

KIC 008774912

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})
008774912-01	OBS	No	349.990766	244.673589	699.8	4.365	29.7	3.5	6.26	4748	16.95	20.48
008774912-02	OBS	No	161.538049	247.881593	677.8	2.649	16.6	6.7	6.26	4748	18.02	57.43
008774912-03	OBS	No	265.033261	386.911402	1876.3	3.086	16.0	9.9	6.26	4748	30.02	29.68
008774912-04	OBS	No	426.394218	135.189409	1581.8	7.714	20.4	6.6	6.26	4748	25.05	15.74
008774912-05	OBS	No	592.800019	275.586499	450.2	3.189	17.1	1.9	6.26	4748	13.96	10.15
008774912-06	OBS	No	409.672444	178.814685	536.3	3.500	16.4	-1.0	6.26	4748	14.00	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008774912-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
008774912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008774912-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-06	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.

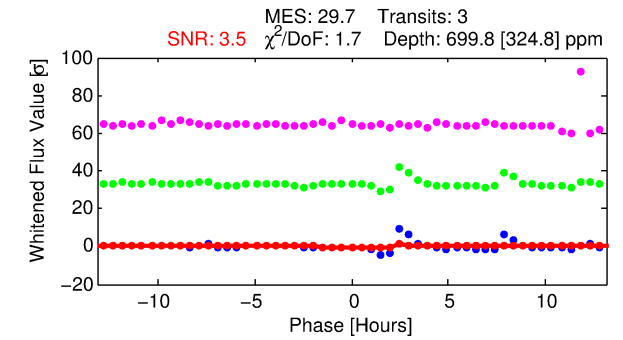
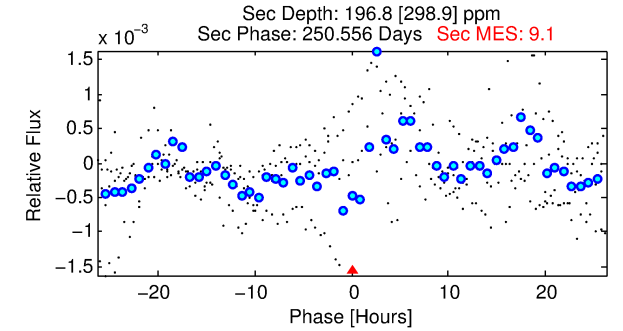
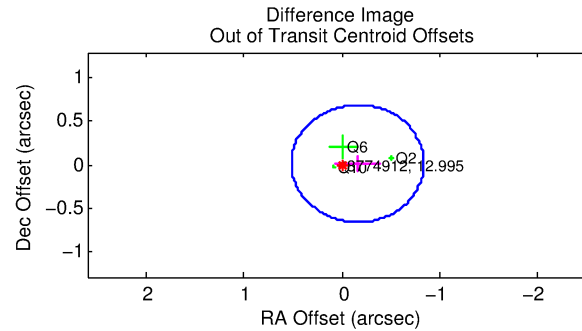
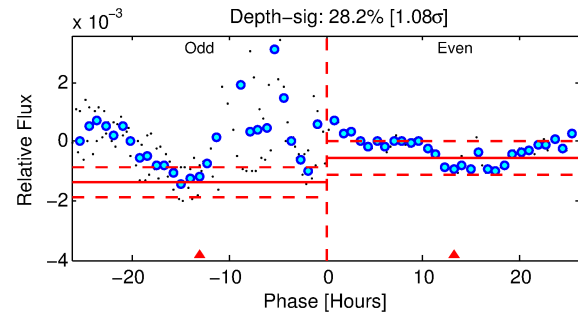
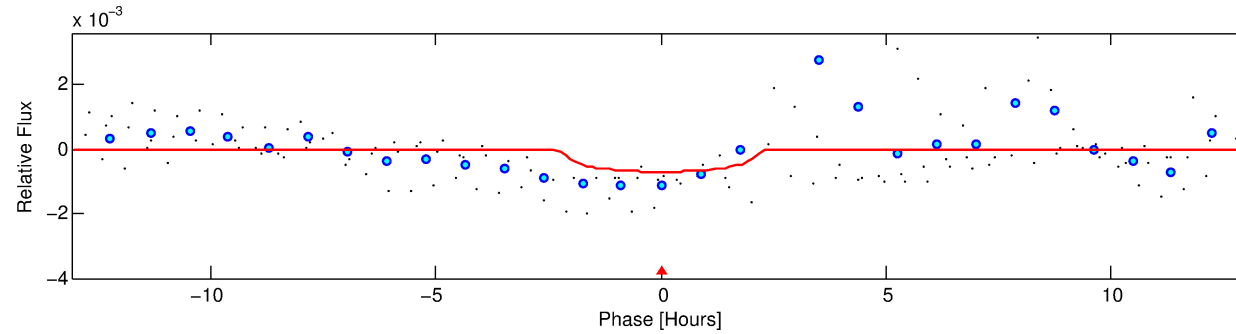
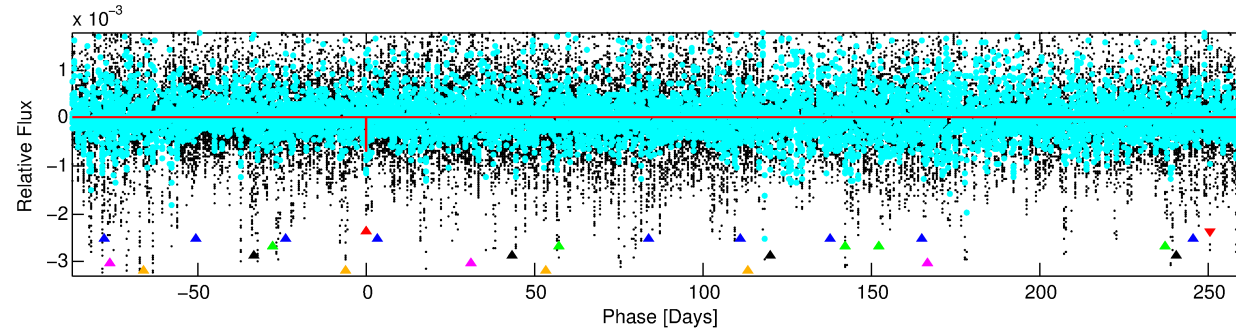
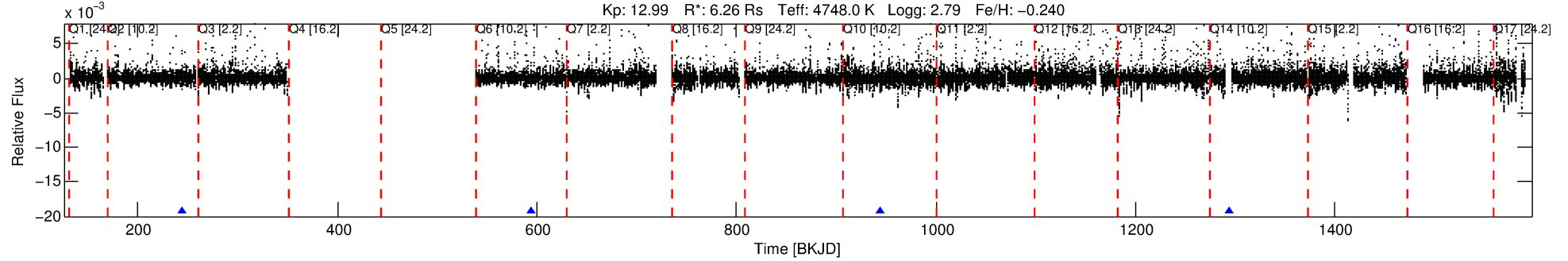
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008774912-01

No Significant Match Found

DV One-Page Summary

KIC: 8774912 Candidate: 1 of 6 Period: 349.991 d



DV Fit Results:

Period = 349.99077 [0.01252] d
Epoch = 244.6736 [0.0135] BKJD
Rp/R* = 0.0248 [0.0884]
a/R* = 521.33 [6107.06]
b = 0.57 [14.13]
Seff = 20.48 [15.95]
Teq = 542 [106] K
Rp = 16.95 [61.44] Re
a = 0.9339 [0.5030] AU
Ag = 328.70 [2410.02] [0.14 σ]
Teffp = 3571 [6511] K [0.47 σ]

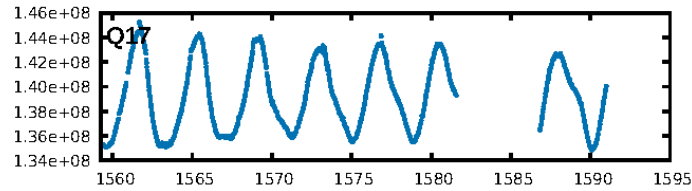
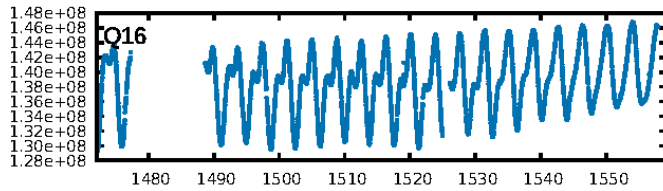
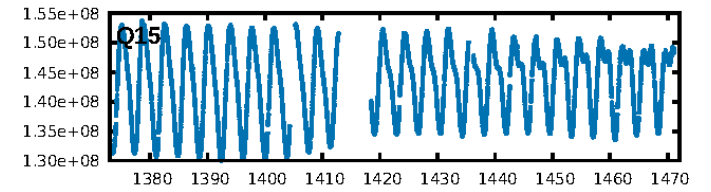
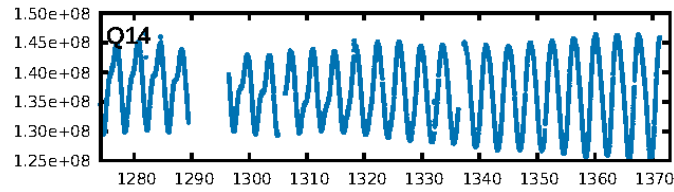
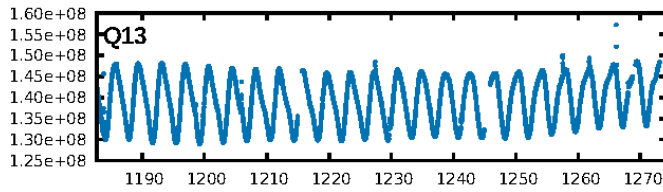
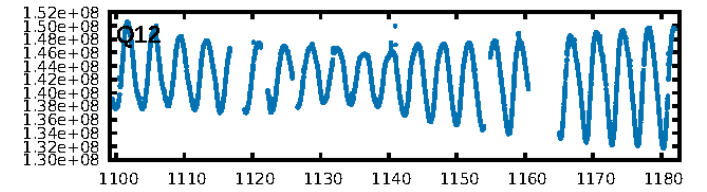
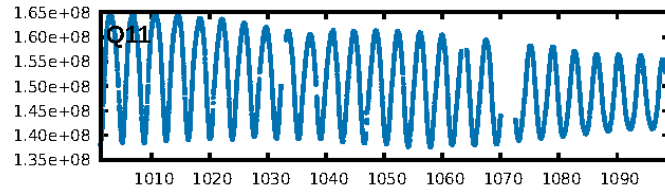
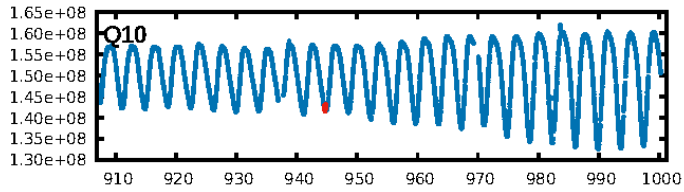
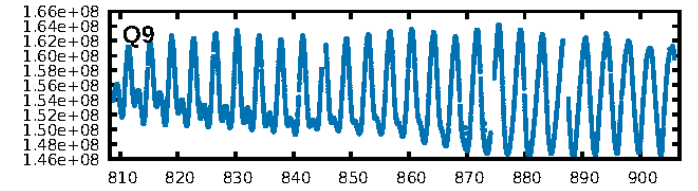
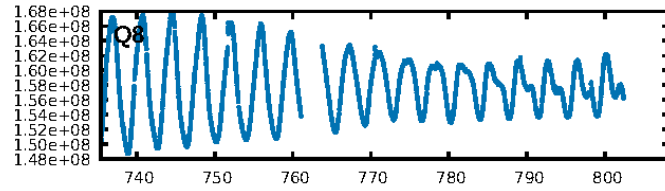
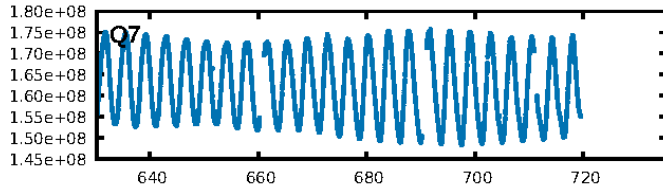
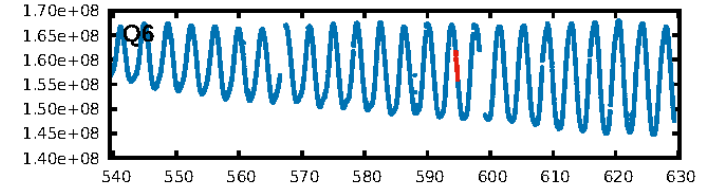
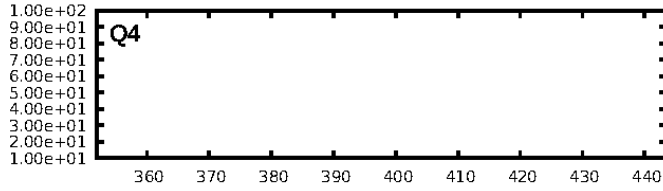
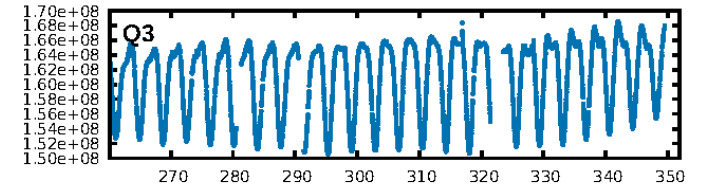
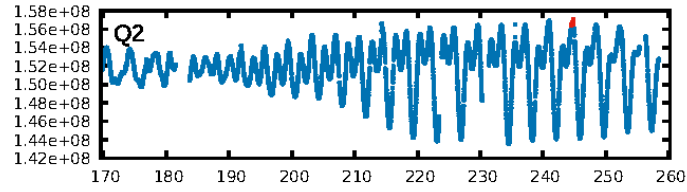
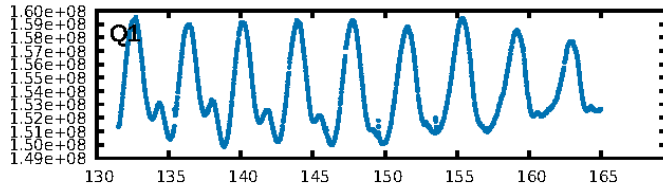
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [381.44 σ]
LongPeriod-sig: 100.0% [256.02 σ]
ModelChiSquare2-sig: 14.8%
ModelChiSquareGof-sig: 87.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 17.53
Centroid-sig: 31.0%
Centroid-so: 0.847 arcsec [1.18 σ]
OotOffset-rm: 0.162 arcsec [0.72 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-rm: **1.008 arcsec [12.07 σ]**
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

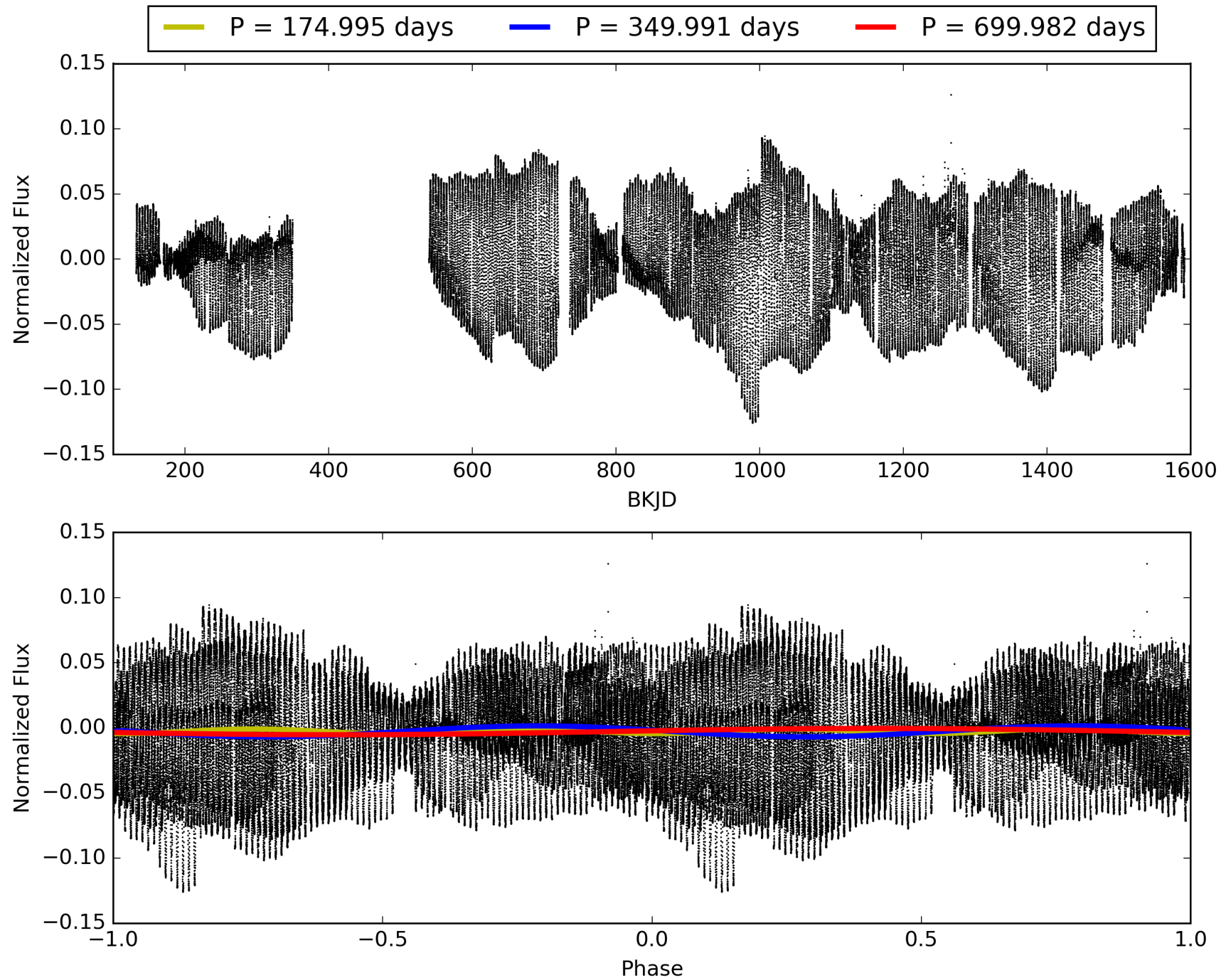
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:37:42 Z

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

TCE 008774912-01, PDC Light Curves

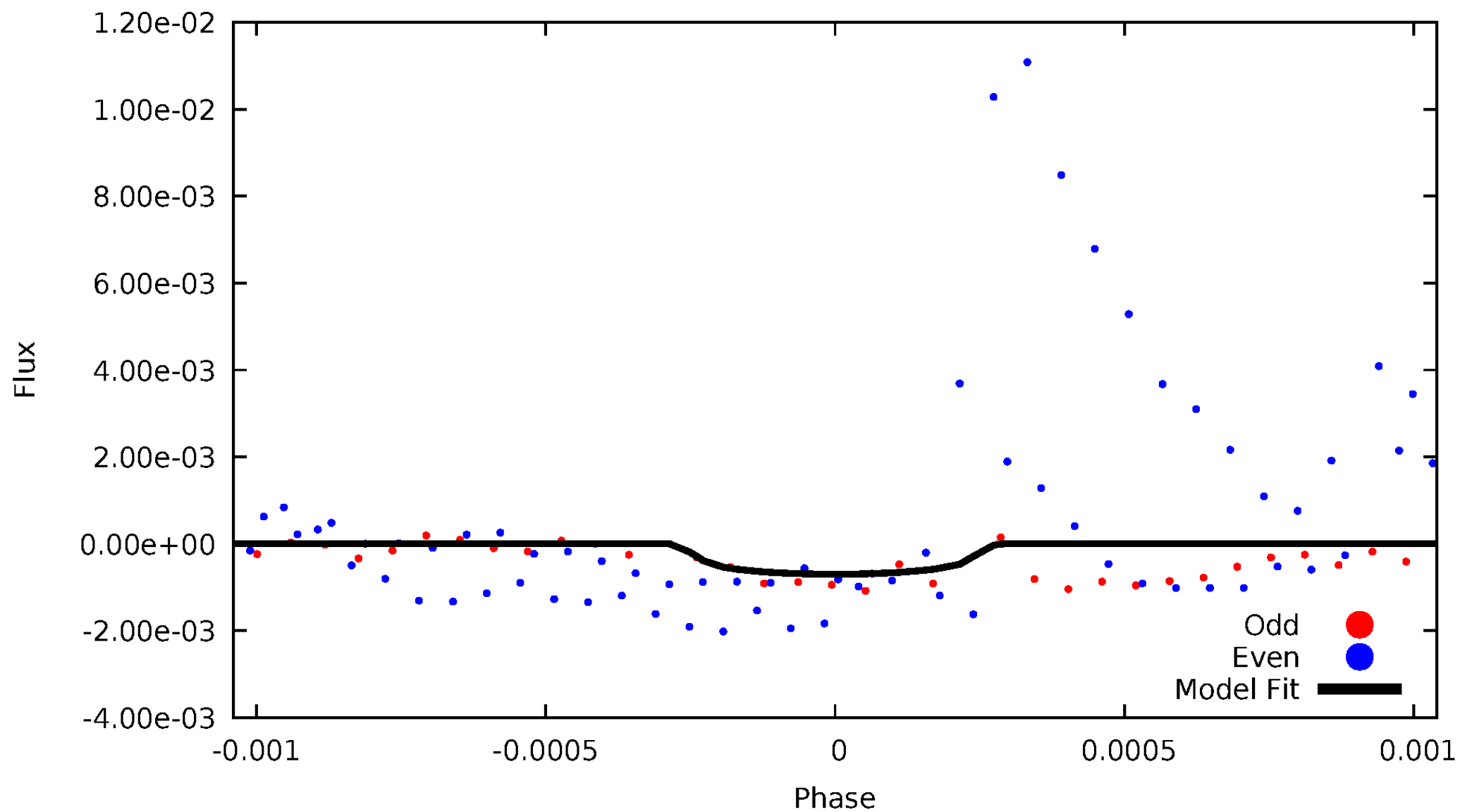


TCE 008774912-01



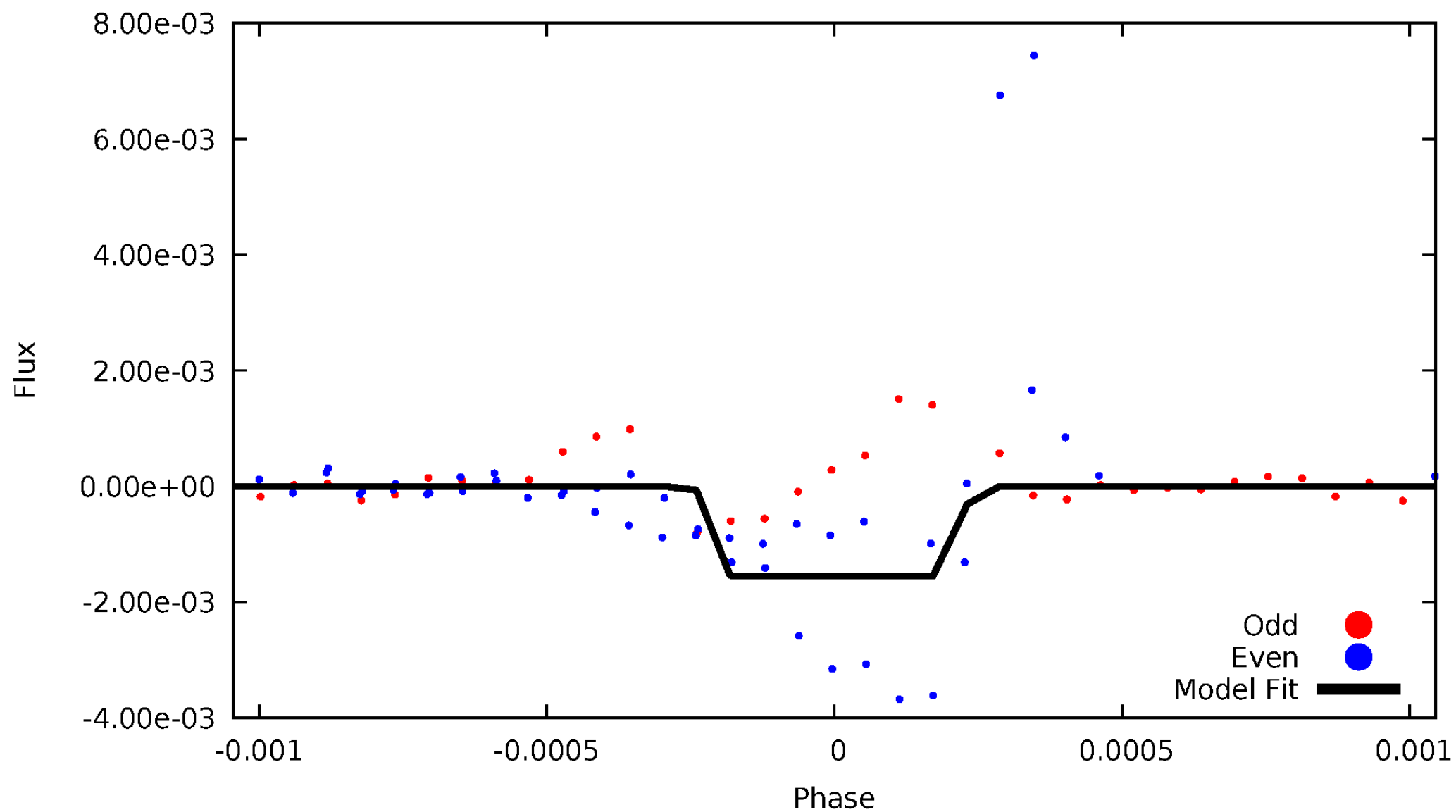
DV Odd/Even

TCE 008774912-01



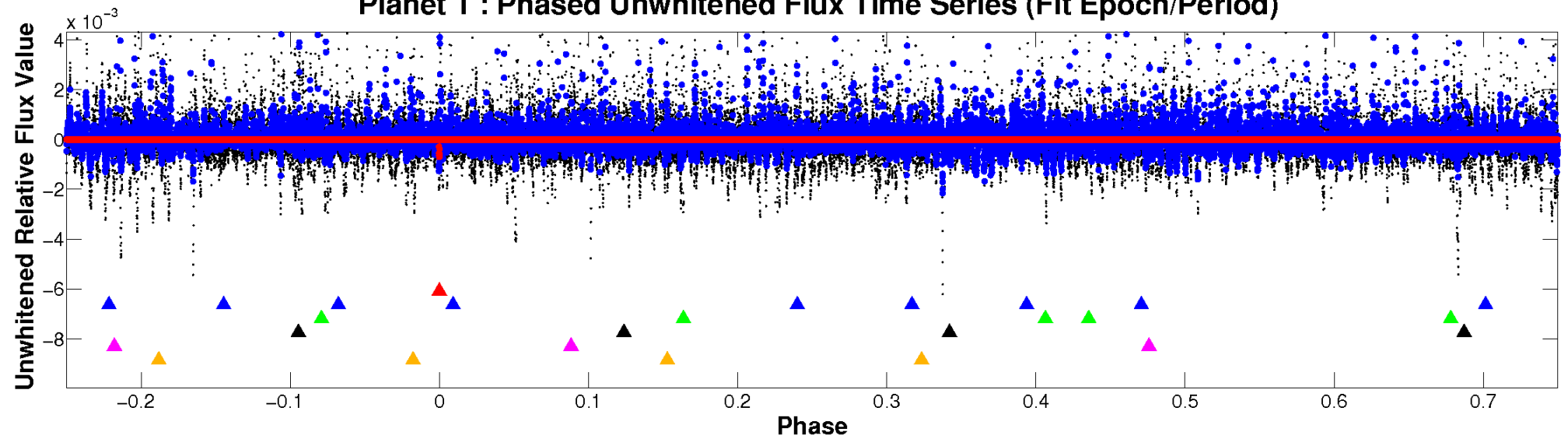
ALT Odd/Even

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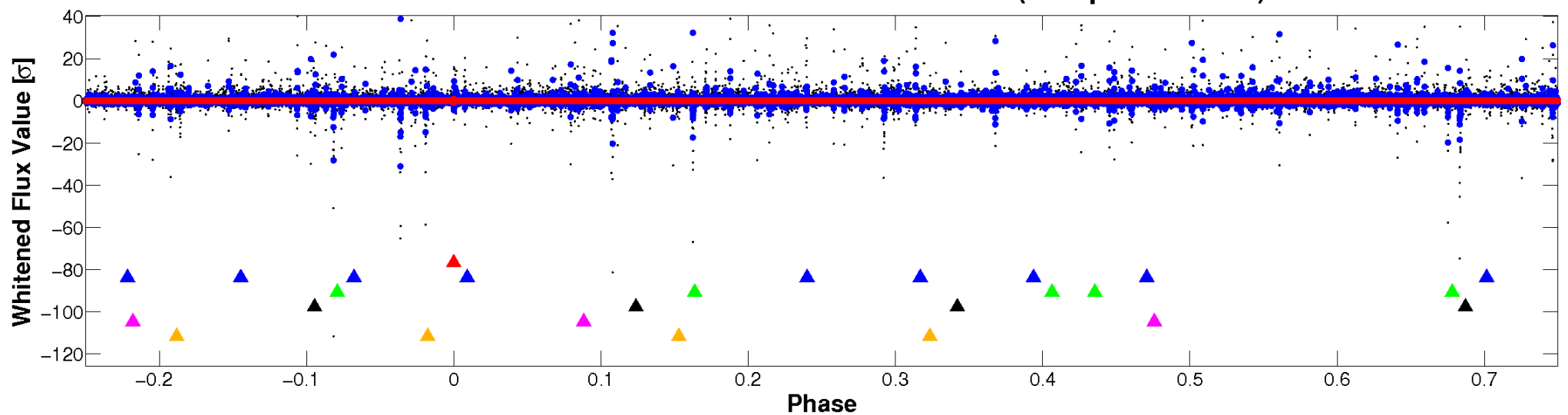


Non-Whitened Vs. Whitened Light Curve

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

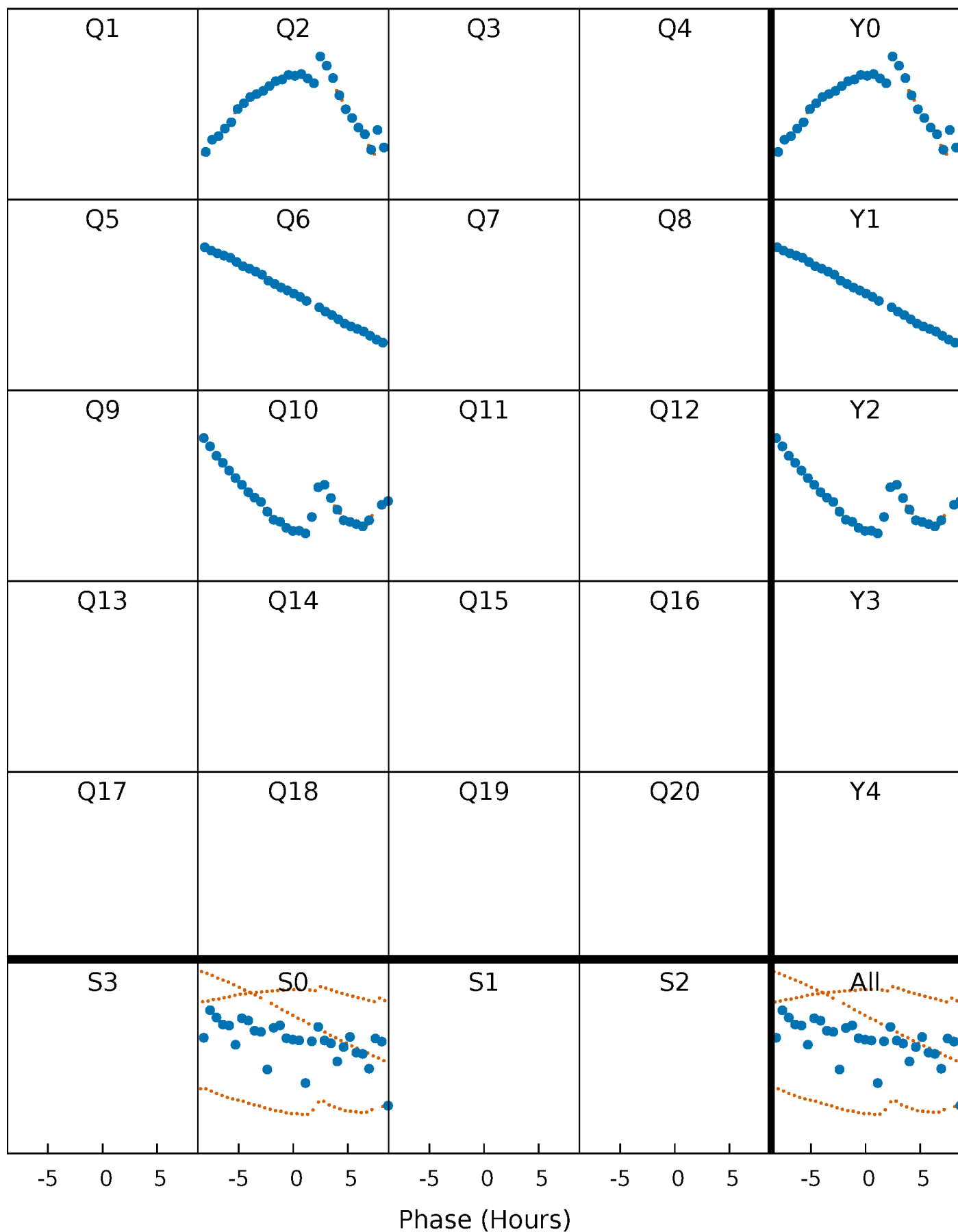


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



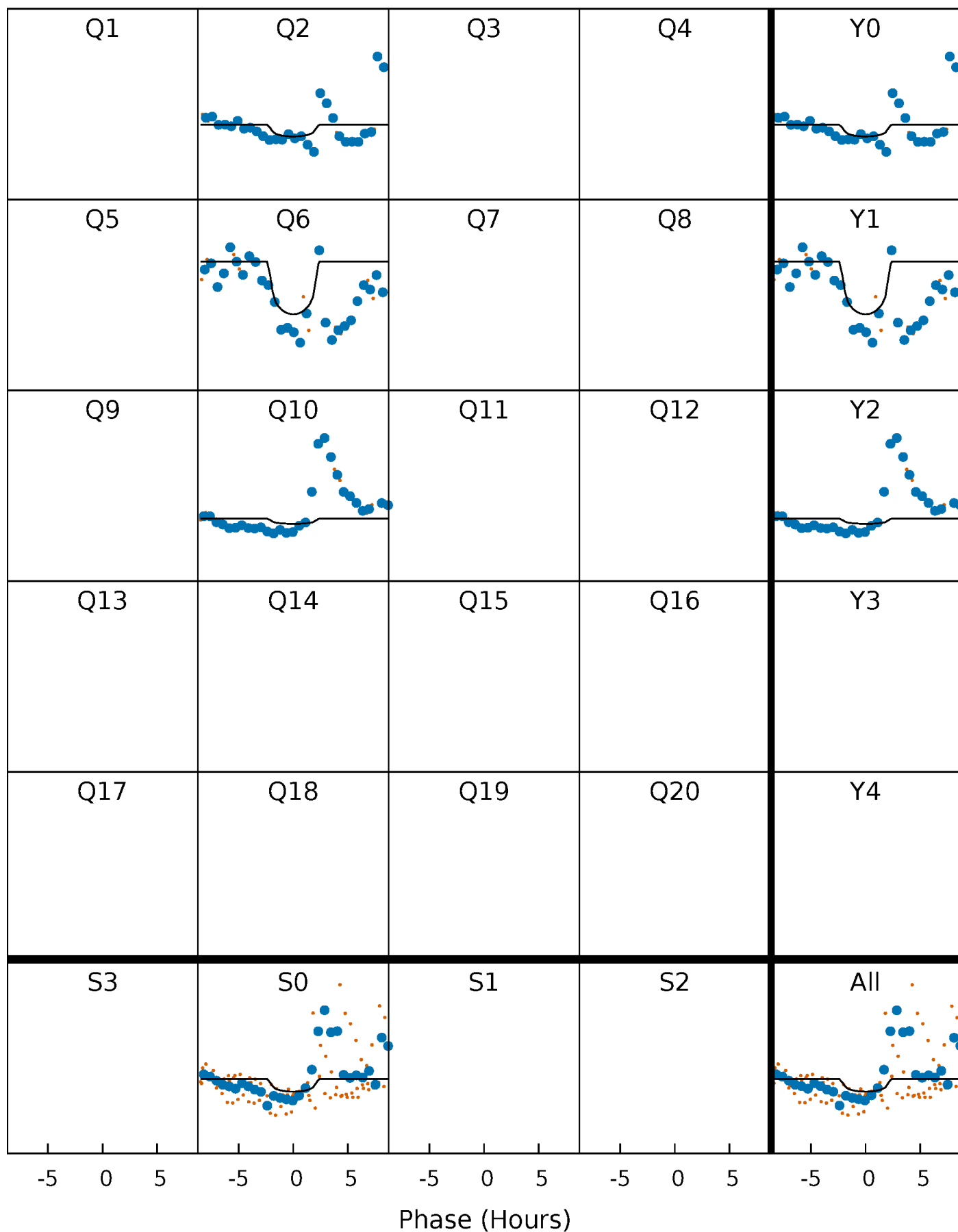
PDC Quarter-Phased Transit Curves

TCE 008774912-01 P=349.990766 Days $T_0=244.673589$ (BKJD)



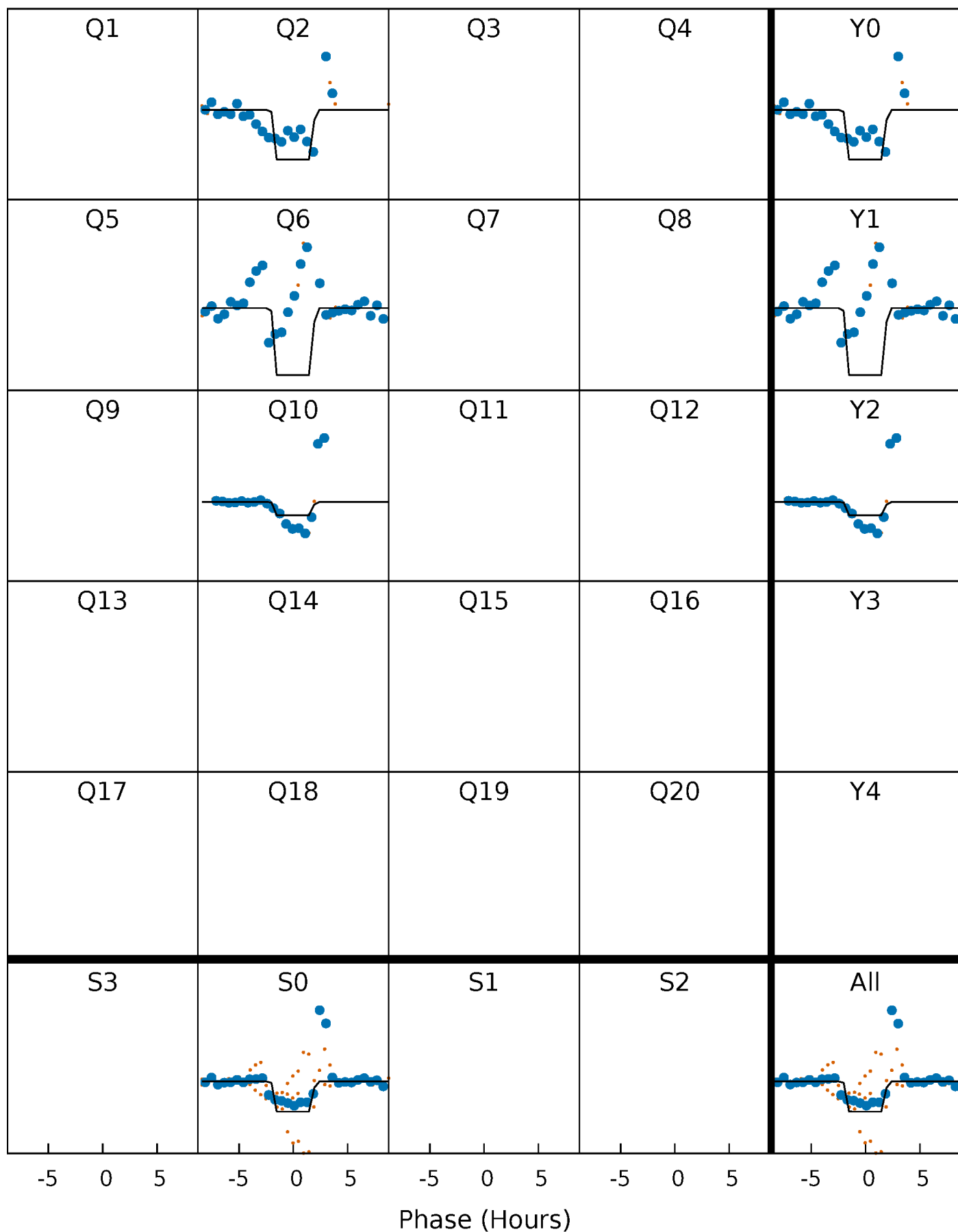
DV Quarter-Phased Transit Curves

TCE 008774912-01 P=349.990766 Days $T_0=244.673589$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

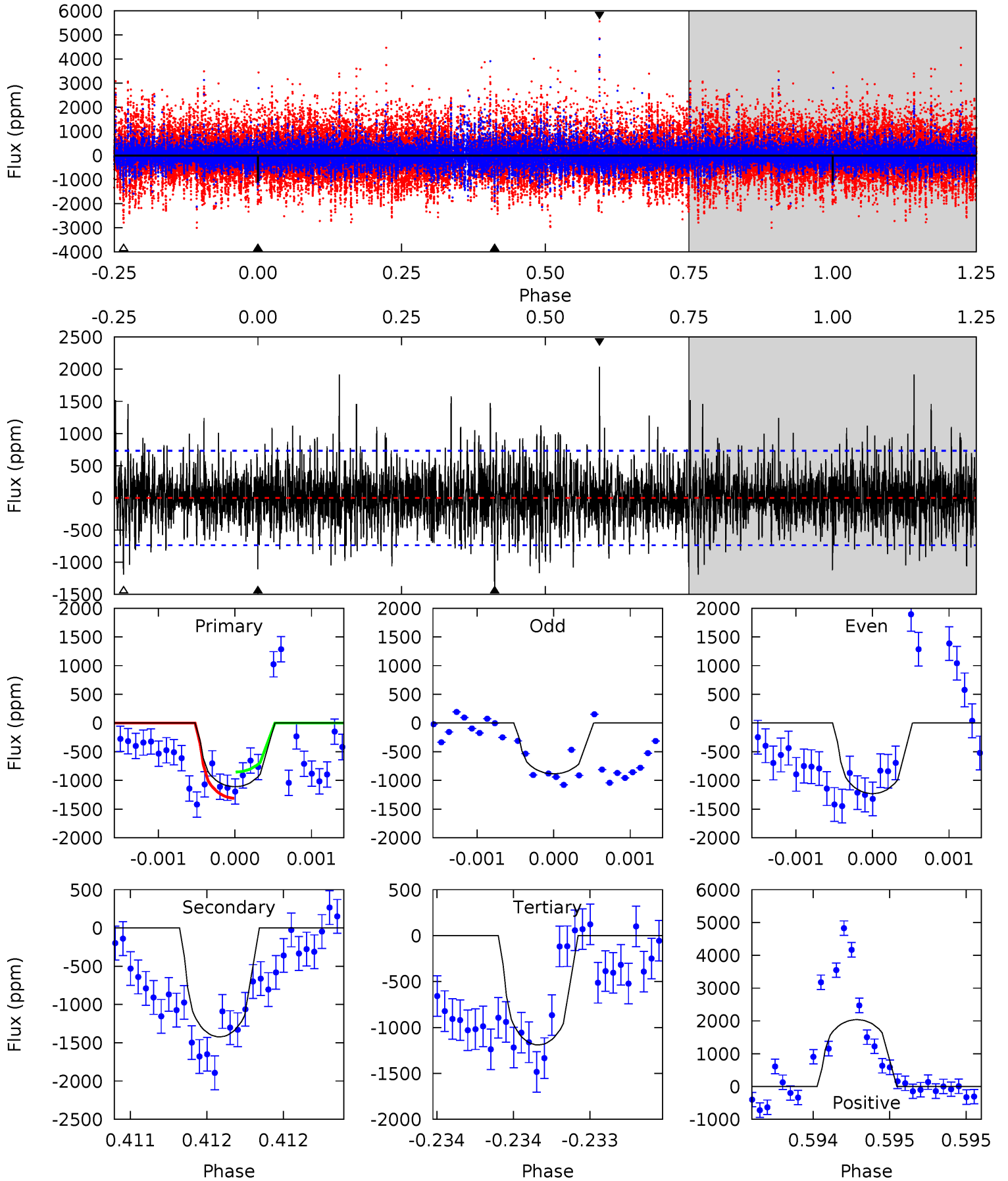
TCE 008774912-01 P=349.986016 Days $T_0=244.678011$ (BKJD)



DV Model-Shift Uniqueness Test

008774912-01, P = 349.990766 Days, E = 244.673589 Days

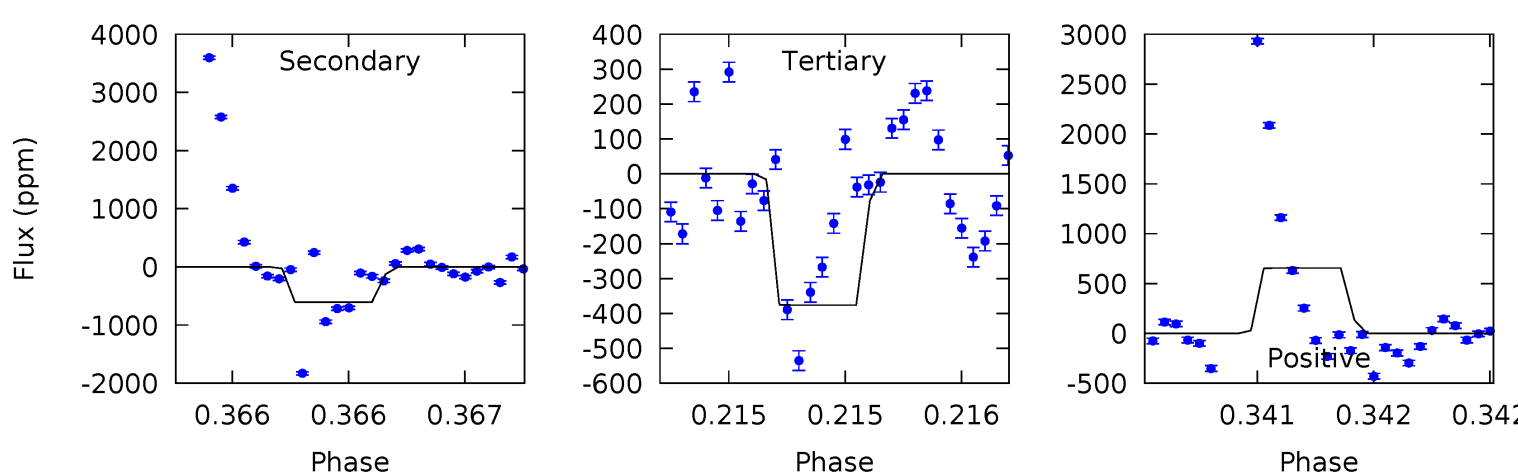
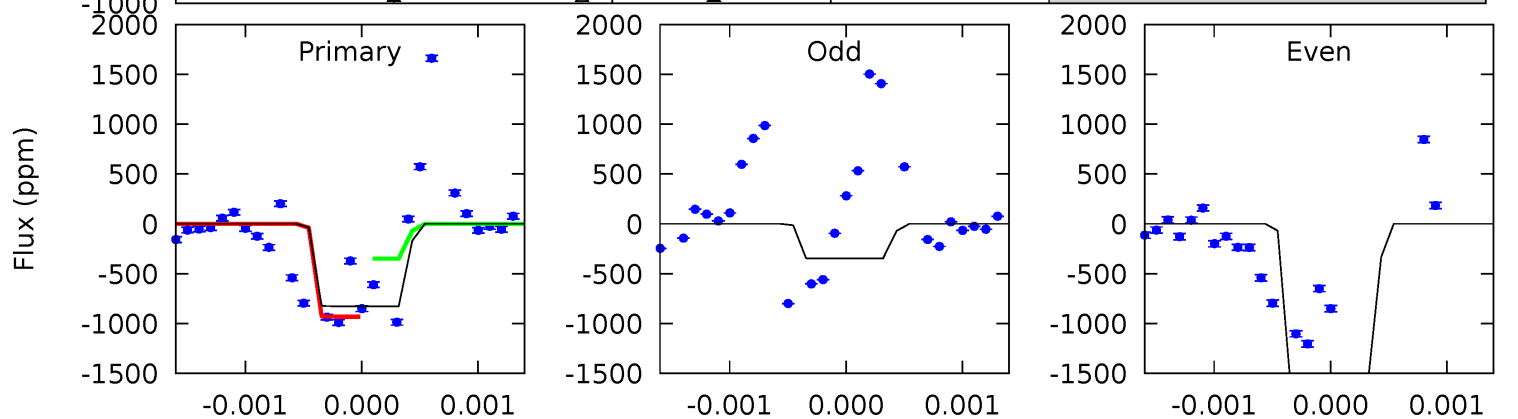
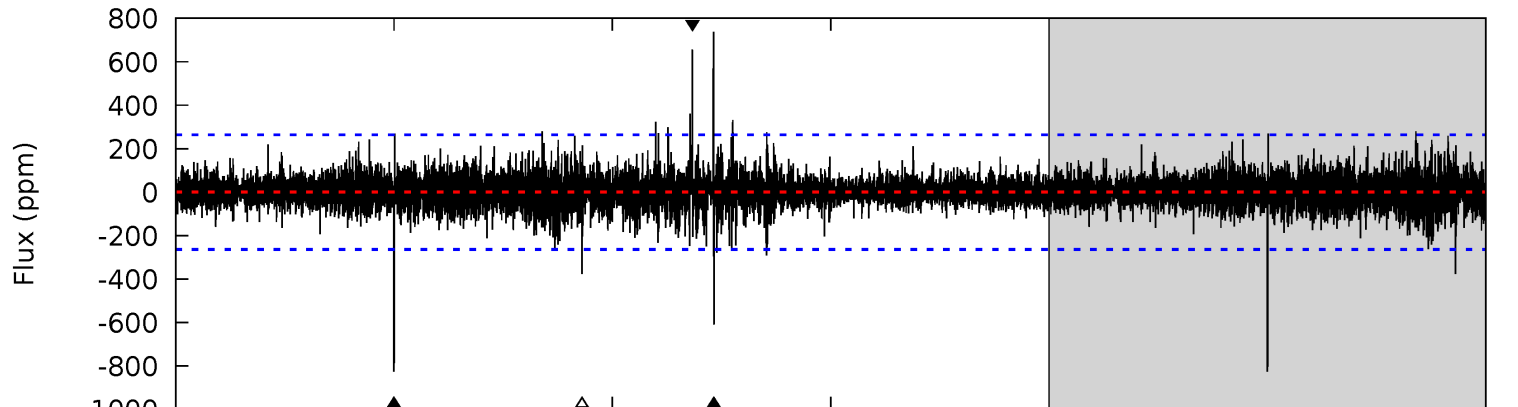
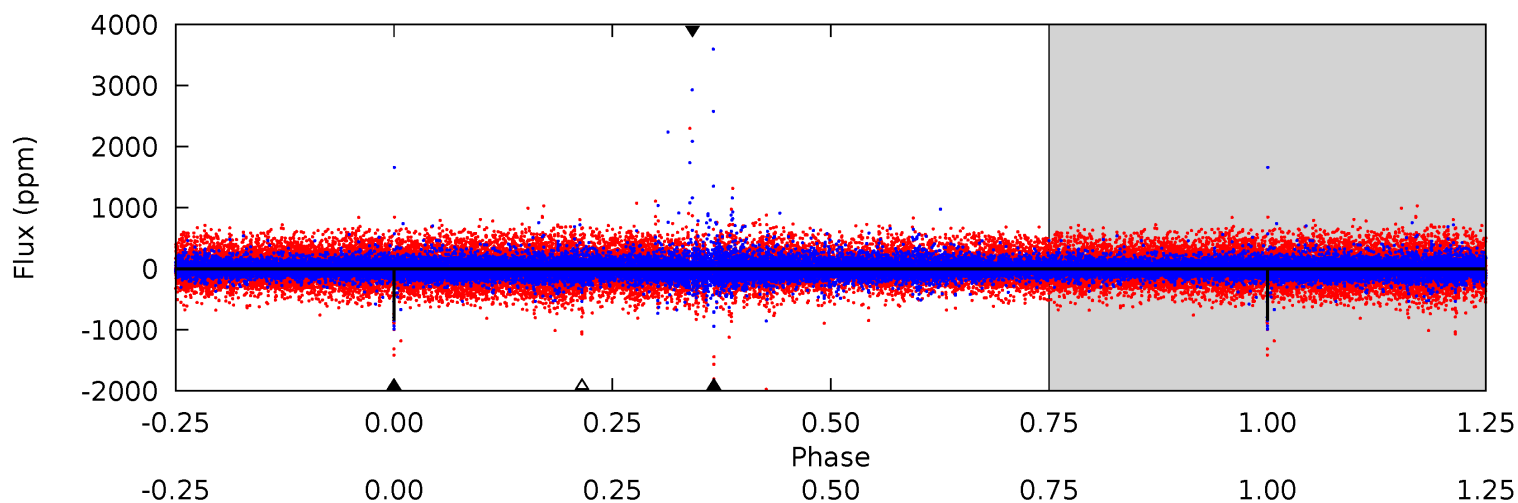
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.41	10.8	9.01	15.4	5.56	3.46	2.42	-0.61	-7.03	1.76	-4.66	0.98	1.00	0.59	1.73



Alt Model-Shift Uniqueness Test

008774912-01, P = 349.986016 Days, E = 244.678011 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	12.8	7.94	13.8	5.56	3.47	1.12	9.51	3.62	4.90	-0.99	11.9	1.21	0.47	0



Stellar Parameters For KIC 008774912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4748^{+143}_{-107}	$2.792^{+0.413}_{-0.337}$	$-0.240^{+0.300}_{-0.200}$	$6.264^{+4.091}_{-2.203}$	$0.886^{+0.432}_{-0.023}$	$0.005^{+0.016}_{-0.003}$
	+3%/-2%	+15%/-12%	+125%/-83%	+65%/-35%	+49%/-3%	+319%/-67%
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 008774912-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1423 ± 132	$49.20^{+54.27}_{-32.57}$	754^{+130}_{-93}	3754^{+1974}_{-703}	307^{+2548}_{-234}
Alt.	-608 ± 47	$49.73^{+64.47}_{-33.58}$	761^{+111}_{-88}	3261^{+1657}_{-608}	123^{+1106}_{-98}

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

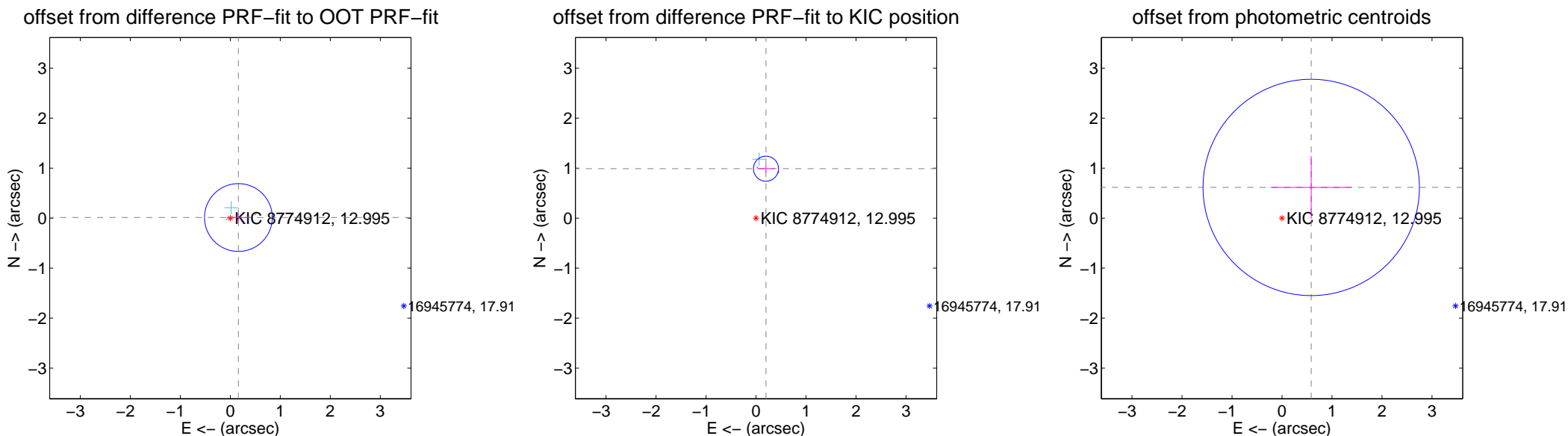
DV Centroid Data

Supplemental centroid analysis for 008774912-01. Kepler magnitude: 12.99. Transit SNR 3.49

There are 2 quarters with good PRF difference image offsets

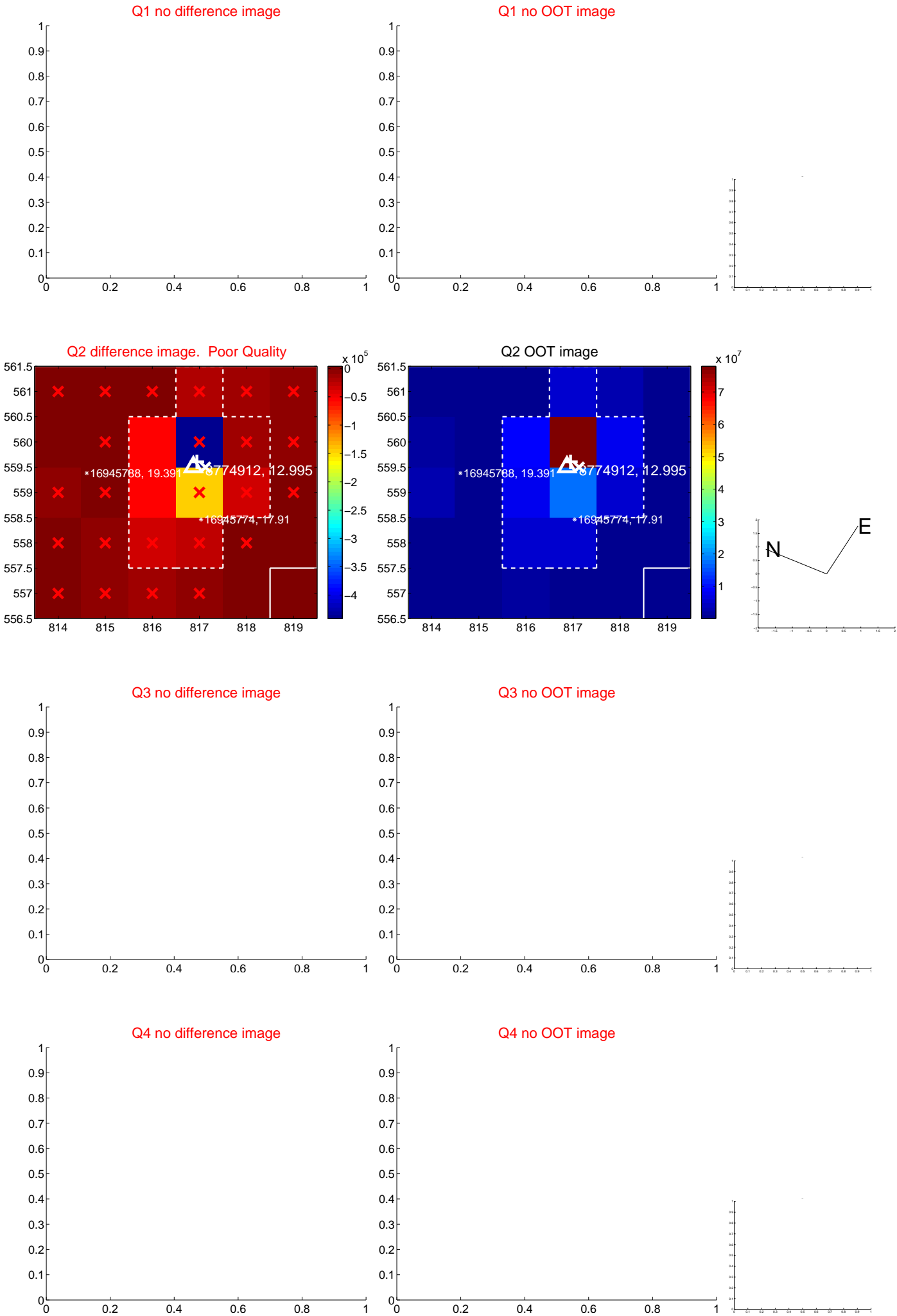
The direct PRF centroid is offset from the target star catalog position by about 1.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.162 ± 0.226	0.72	-0.162 ± 0.226	0.012 ± 0.079
PRF-fit source offset from KIC position	1.008 ± 0.084	12.07	-0.199 ± 0.172	0.988 ± 0.078
photometric centroid source offset	0.85 ± 0.72	1.18	-0.58 ± 0.81	0.61 ± 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.



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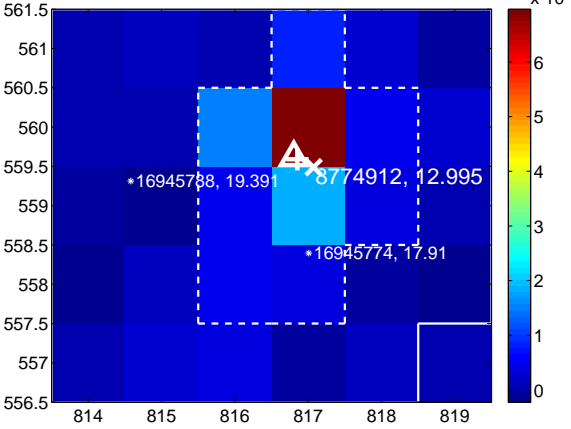
Q5 no difference image



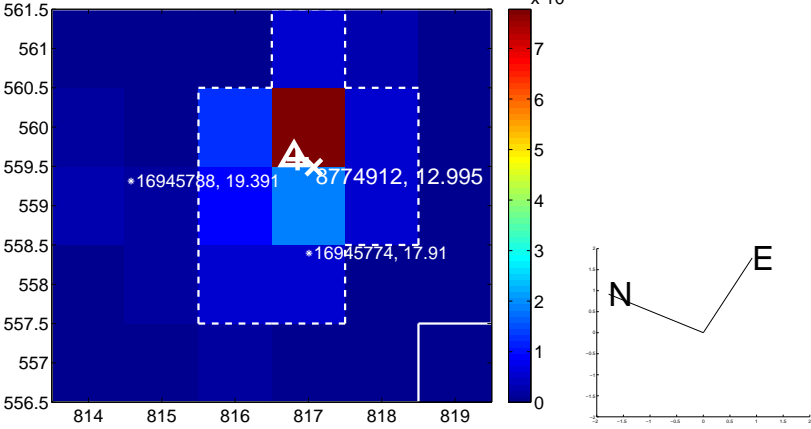
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



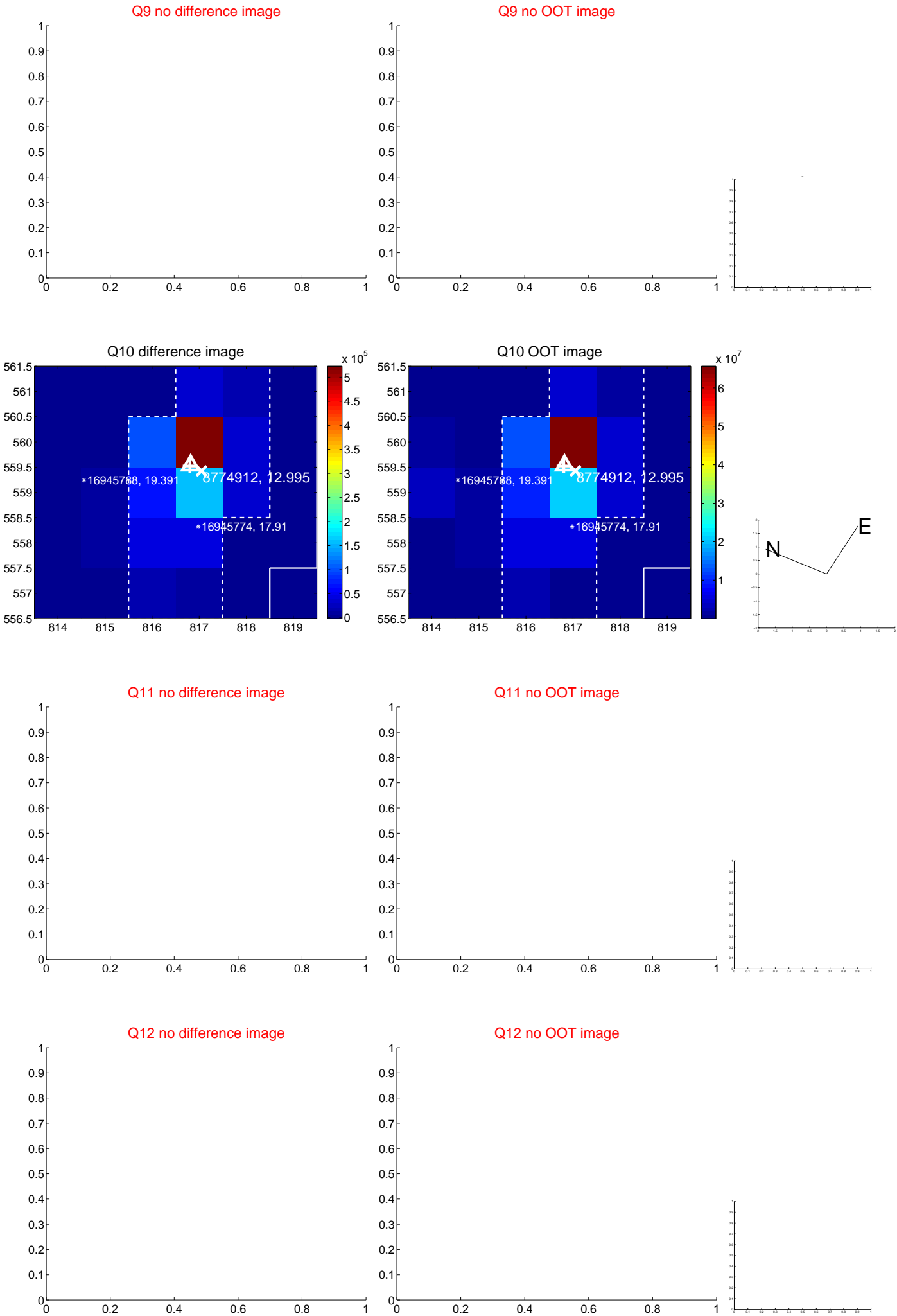
Q8 no difference image



Q8 no OOT image



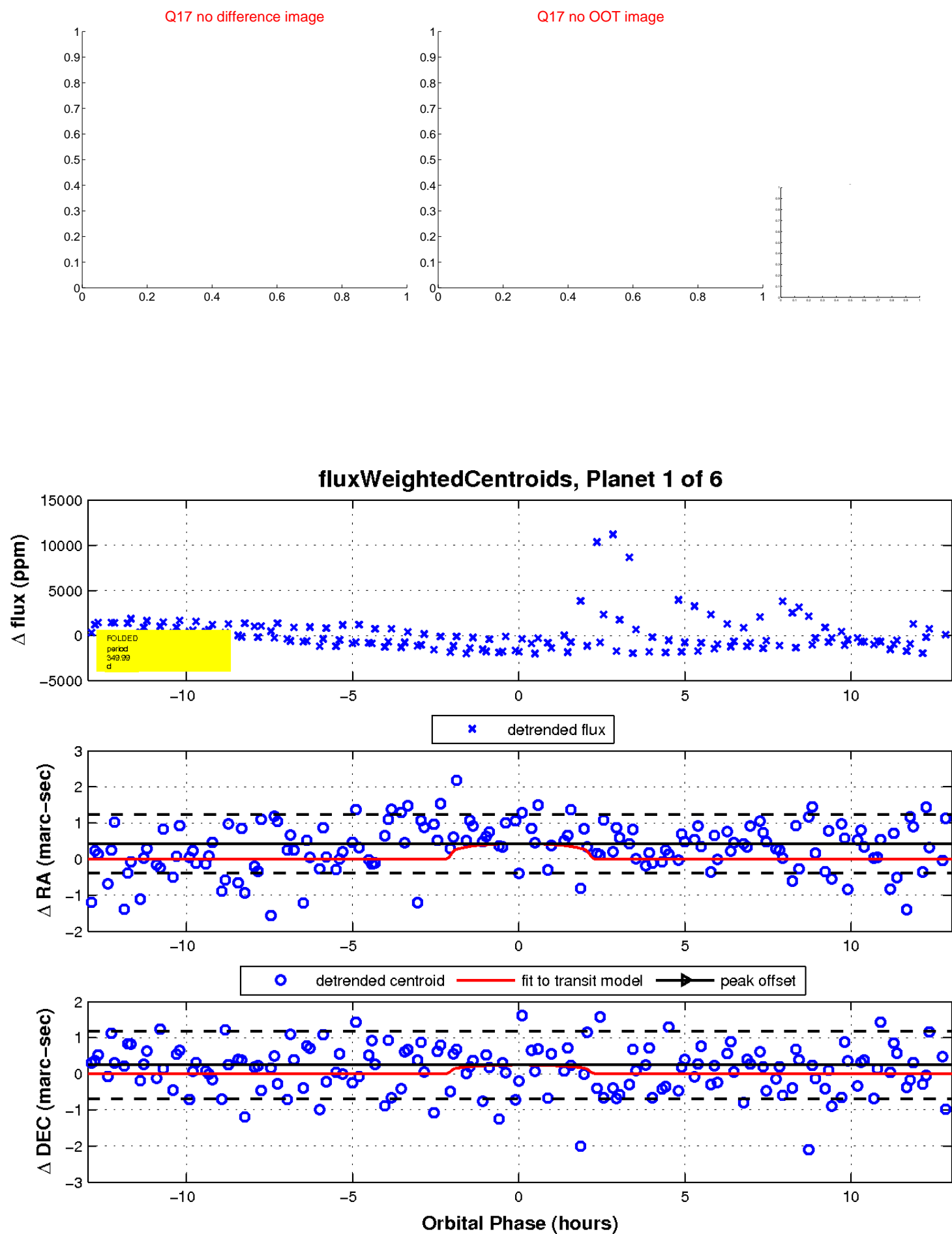
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



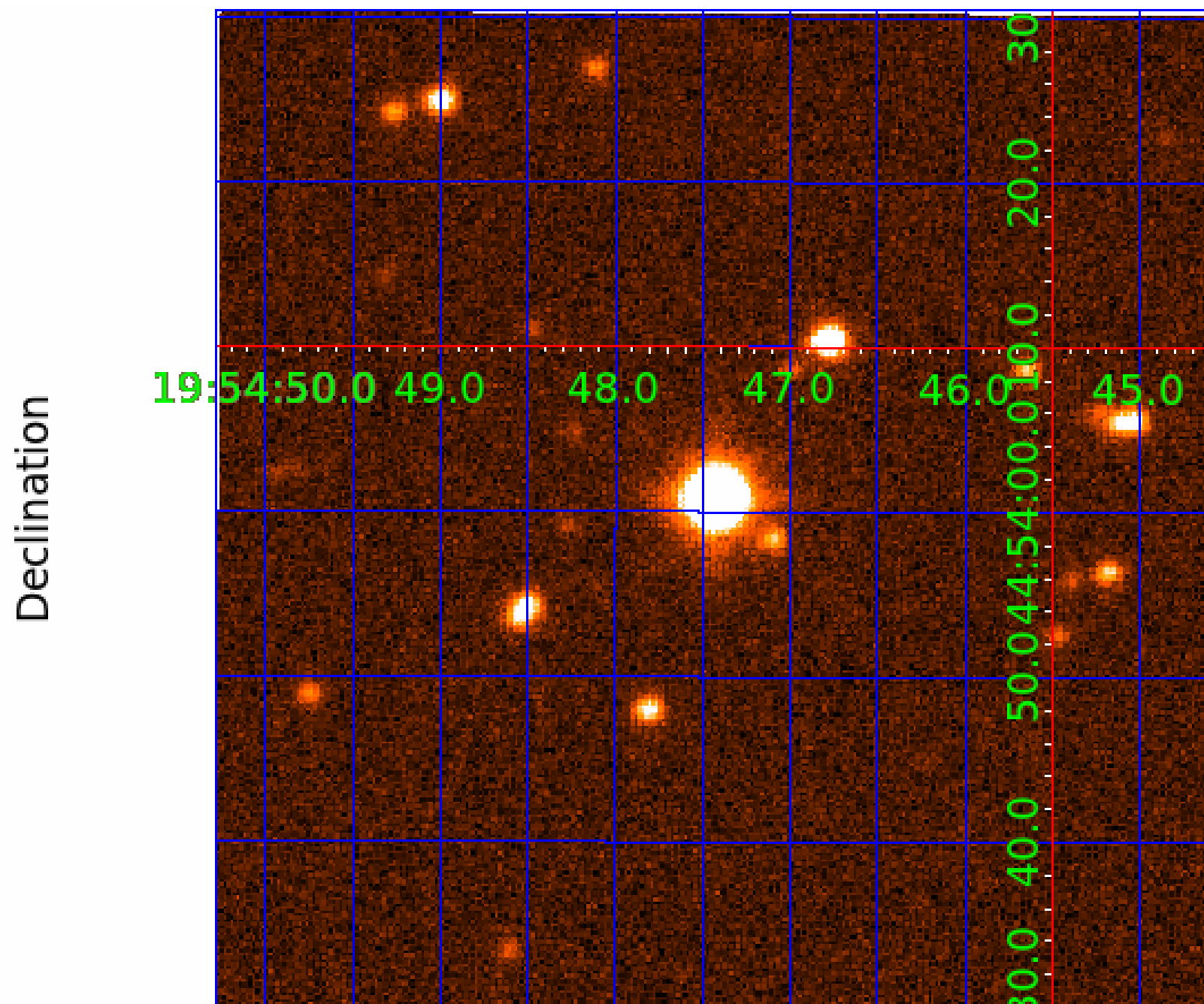
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008774912

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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008774912-05	OBS	No	592.800019	275.586499	450.2	3.189	17.1	1.9	6.26	4748	13.96	10.15
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Robovetter Results

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008774912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
008774912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008774912-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-06	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.

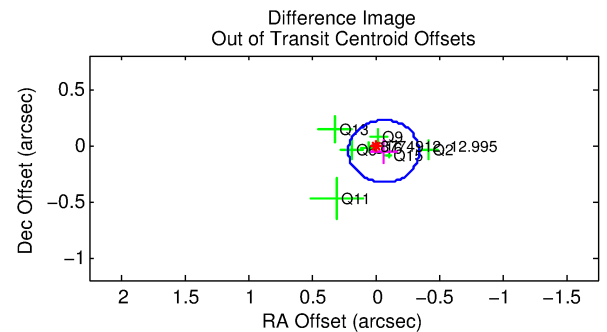
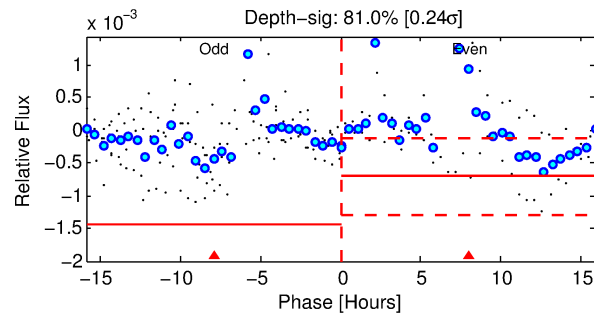
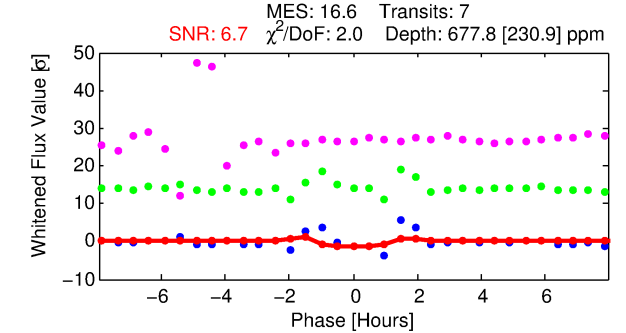
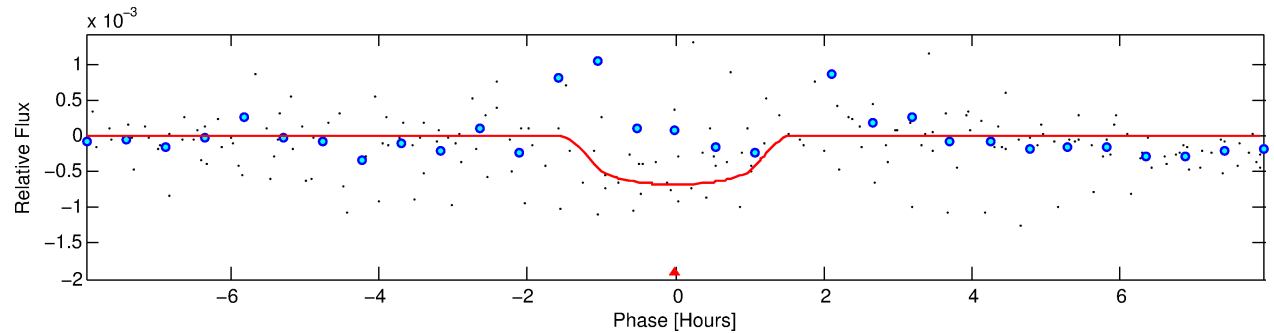
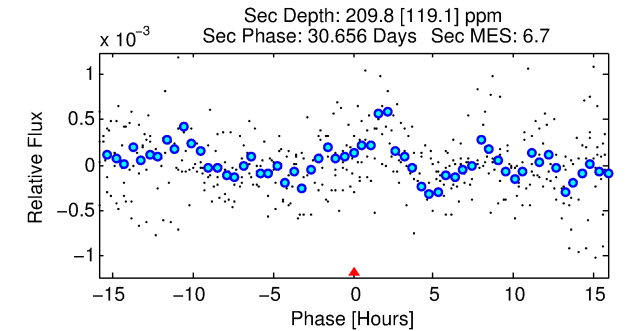
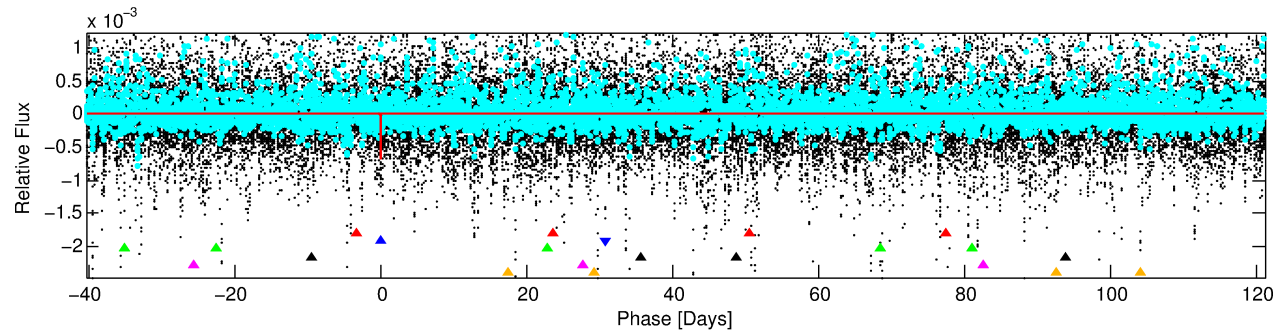
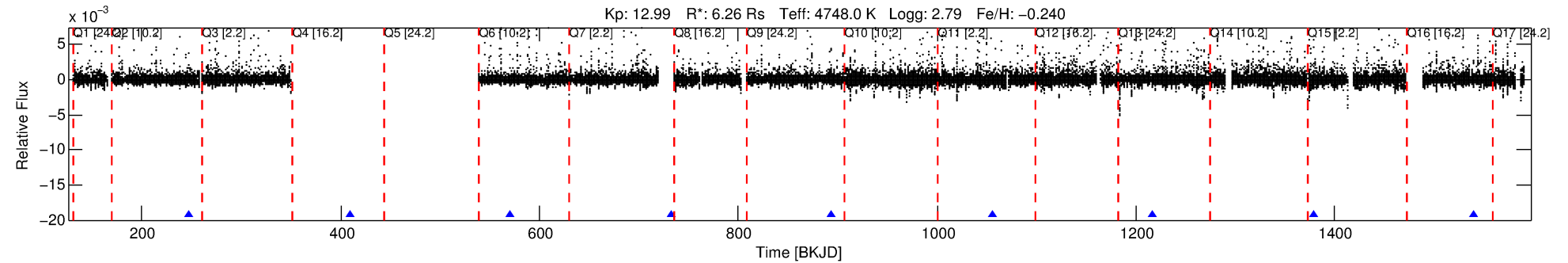
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008774912-02

No Significant Match Found

DV One-Page Summary

KIC: 8774912 Candidate: 2 of 6 Period: 161.538 d



DV Fit Results:

Period = 161.53805 [0.00282] d
Epoch = 247.8816 [0.0167] BKJD
Rp/R* = 0.0264 [0.0549]
a/R* = 315.33 [2229.69]
b = 0.77 [3.80]
Seff = 57.43 [44.71]
Teq = 702 [137] K
Rp = 18.02 [39.32] Re
a = 0.5578 [0.3004] AU
Ag = 110.62 [472.75] [0.23σ]
Teffp = 3520 [3701] K [0.76σ]

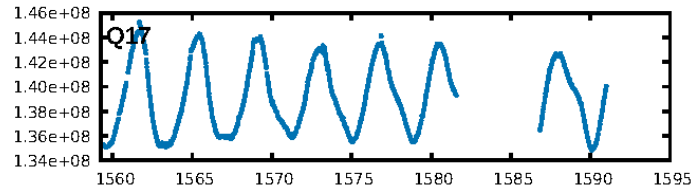
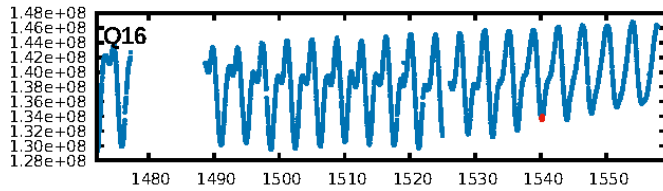
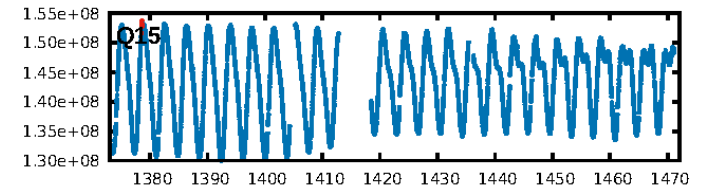
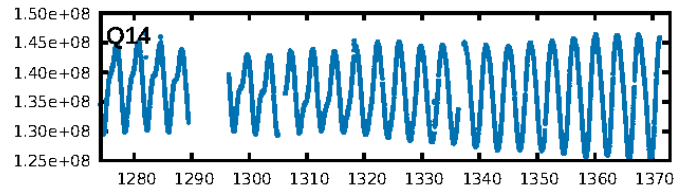
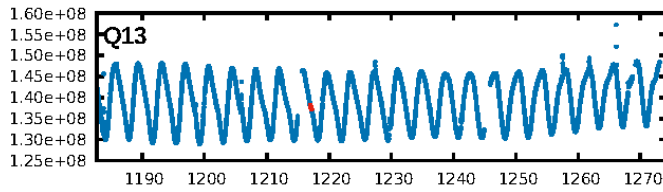
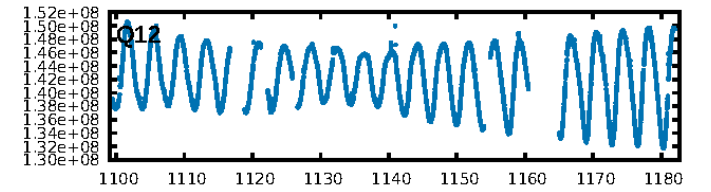
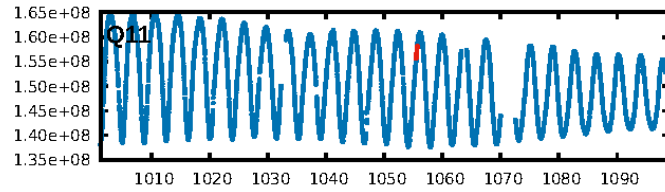
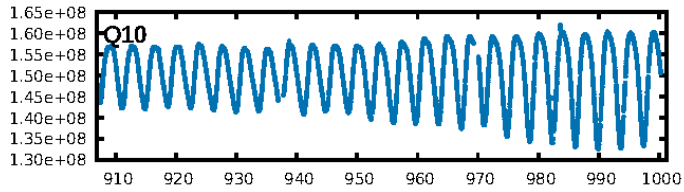
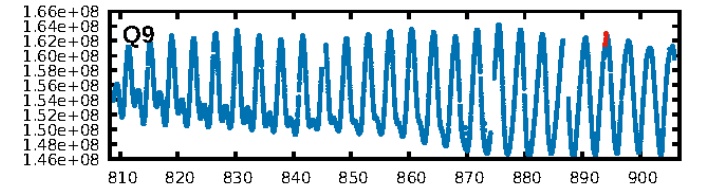
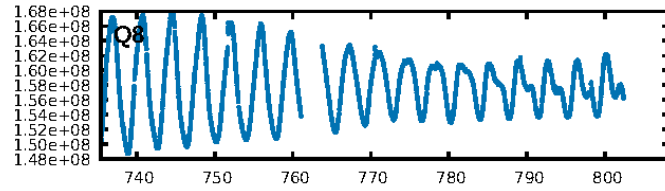
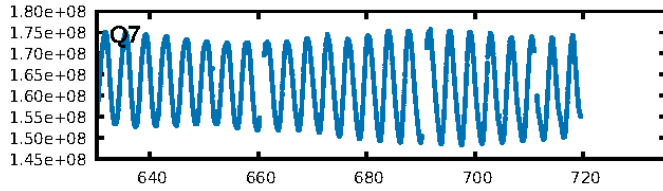
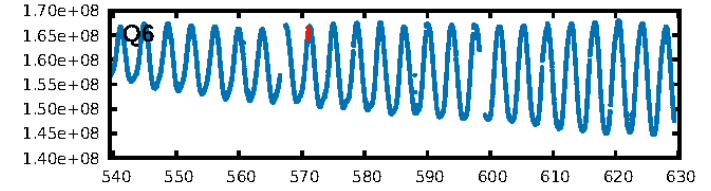
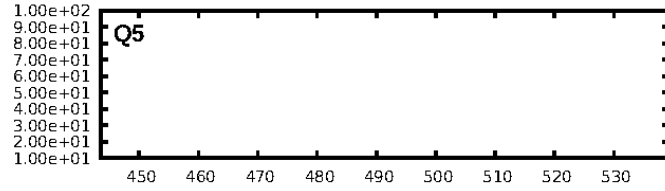
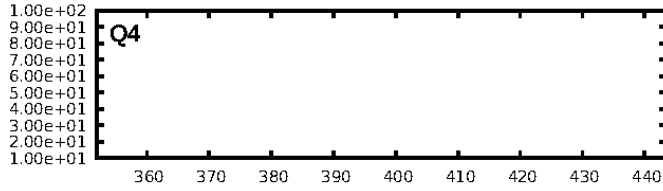
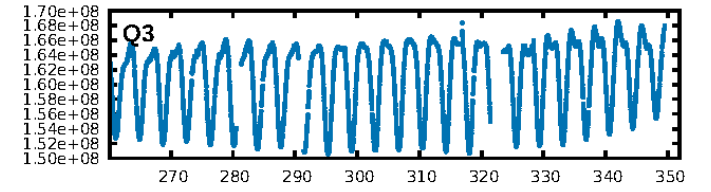
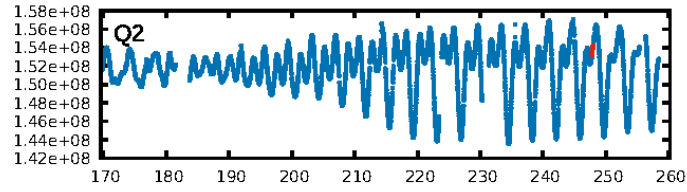
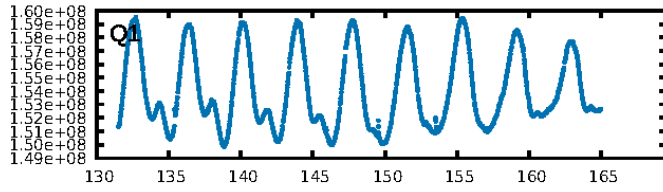
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [610.79σ]
ModelChiSquare2-sig: 8.8%
ModelChiSquareGof-sig: 20.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 1.108
Centroid-sig: 79.5%
Centroid-so: 0.982 arcsec [1.61σ]
OotOffset-rm: 0.085 arcsec [0.92σ]
OotOffset-st: 2/2/1/2 [7]
KicOffset-rm: 0.901 arcsec [8.11σ]
KicOffset-st: 2/2/1/2 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 1.00 [7/7]

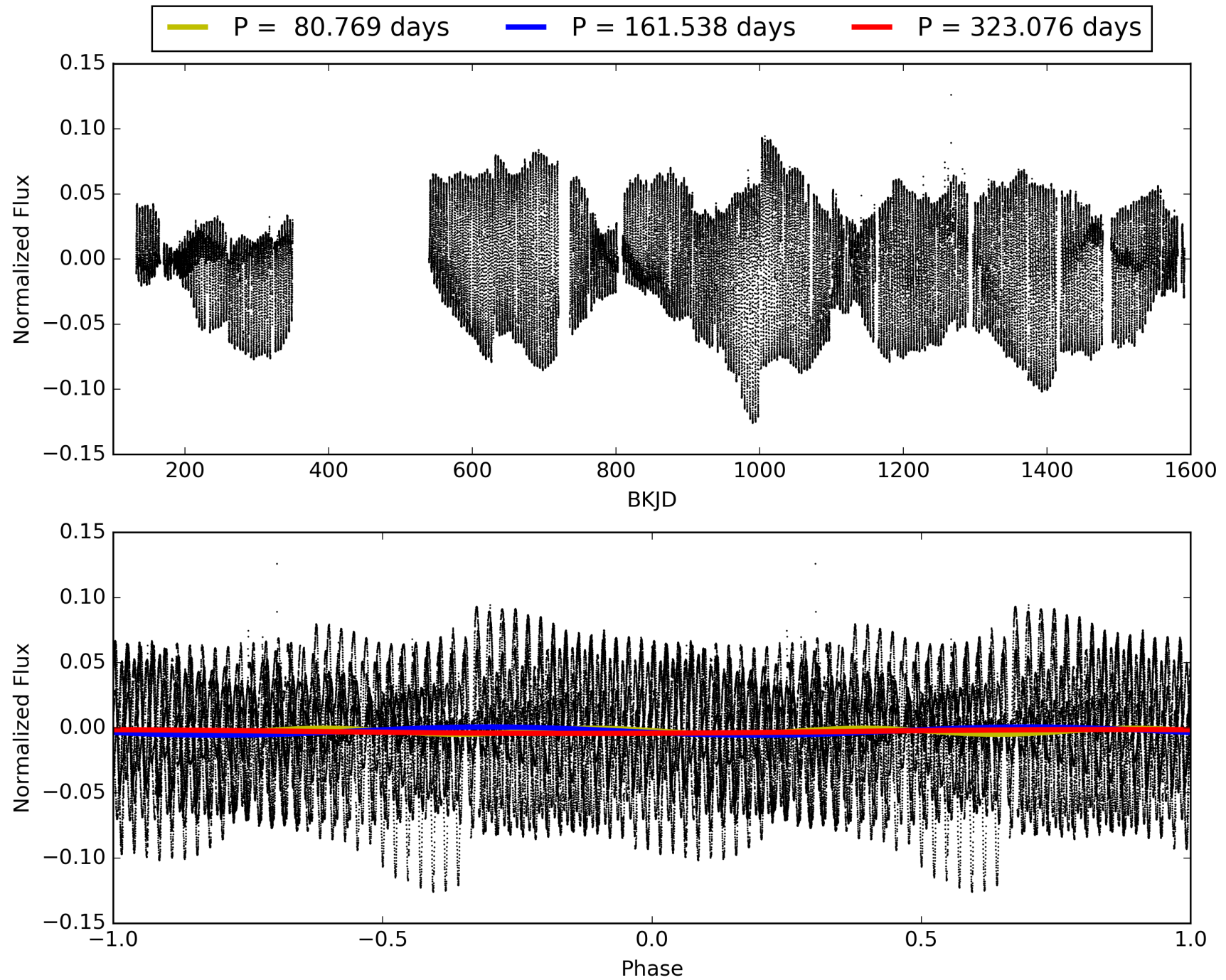
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:37:52 Z

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

TCE 008774912-02, PDC Light Curves

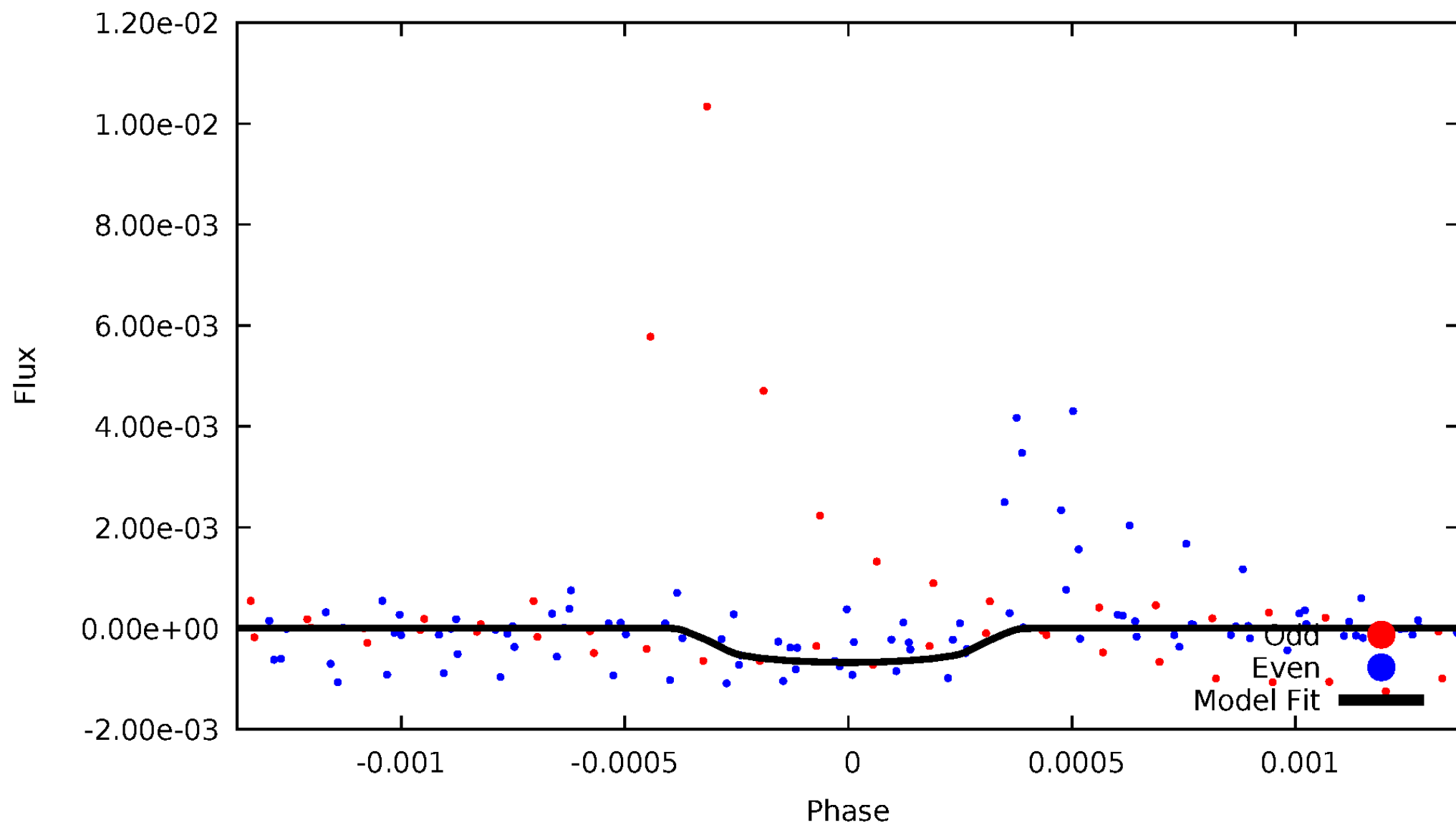


TCE 008774912-02



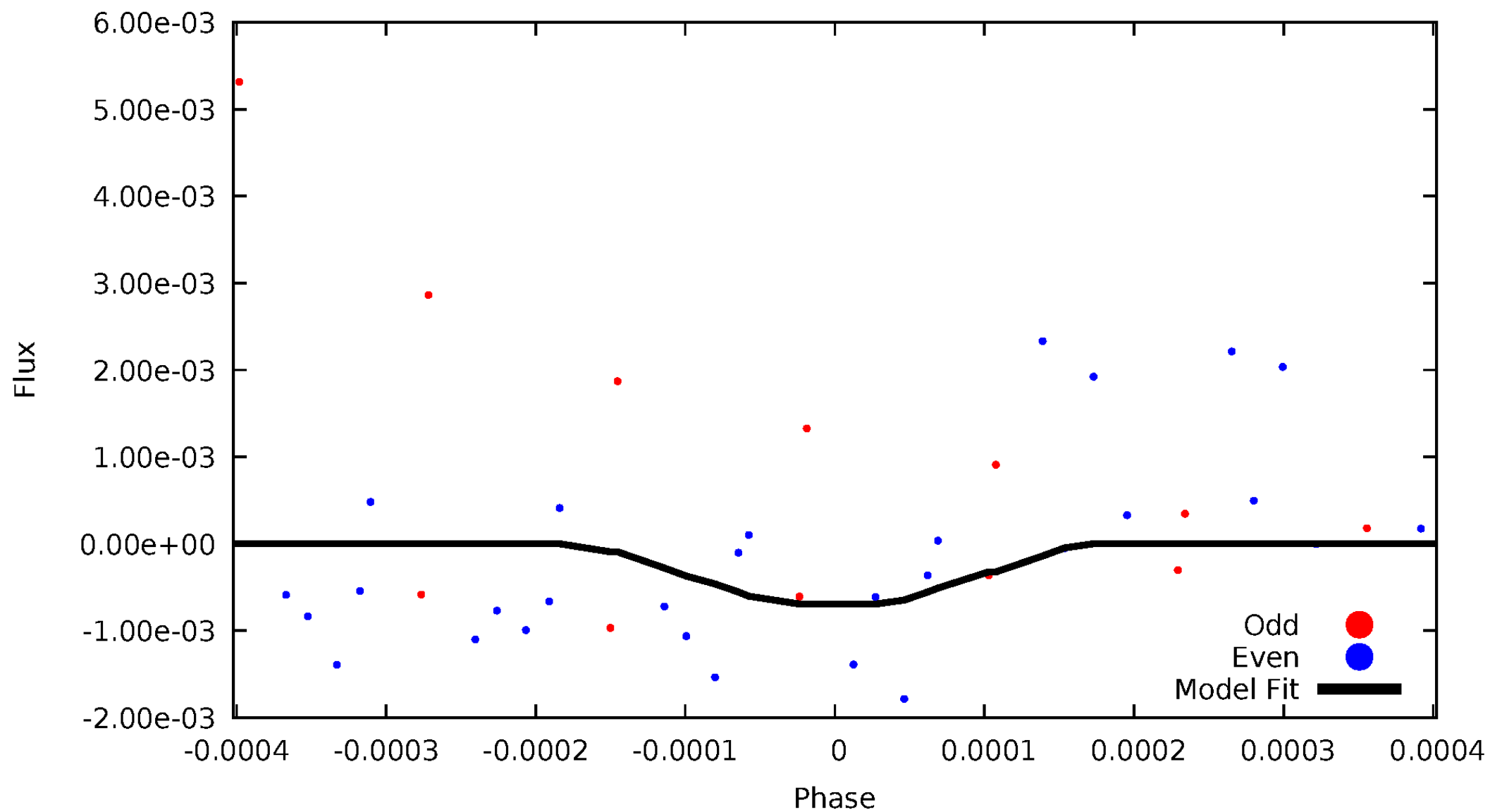
DV Odd/Even

TCE 008774912-02



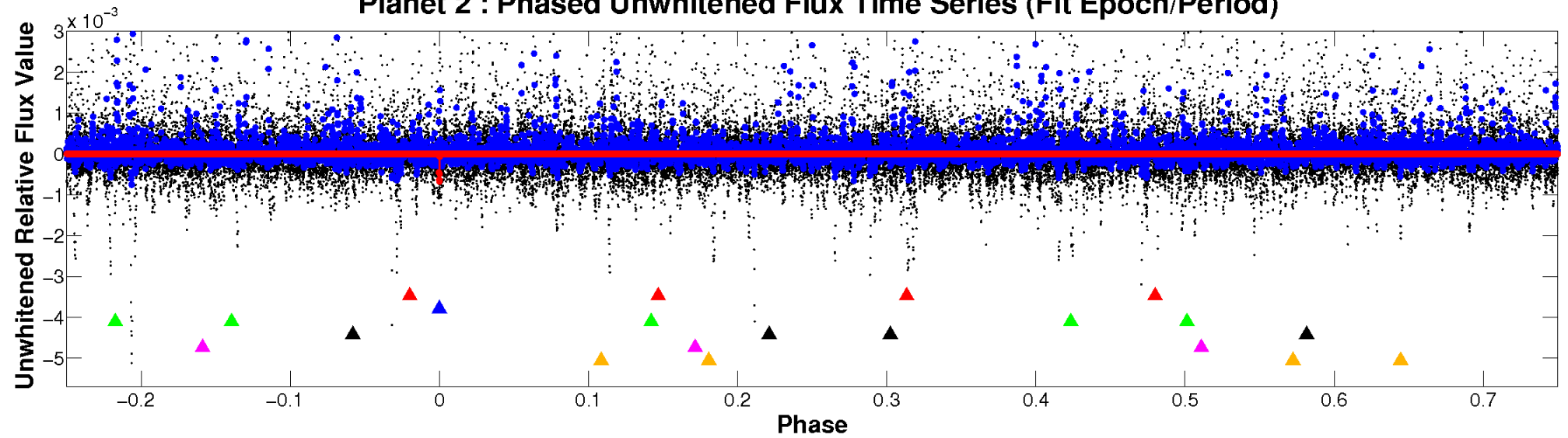
ALT Odd/Even

TCE 008774912-02

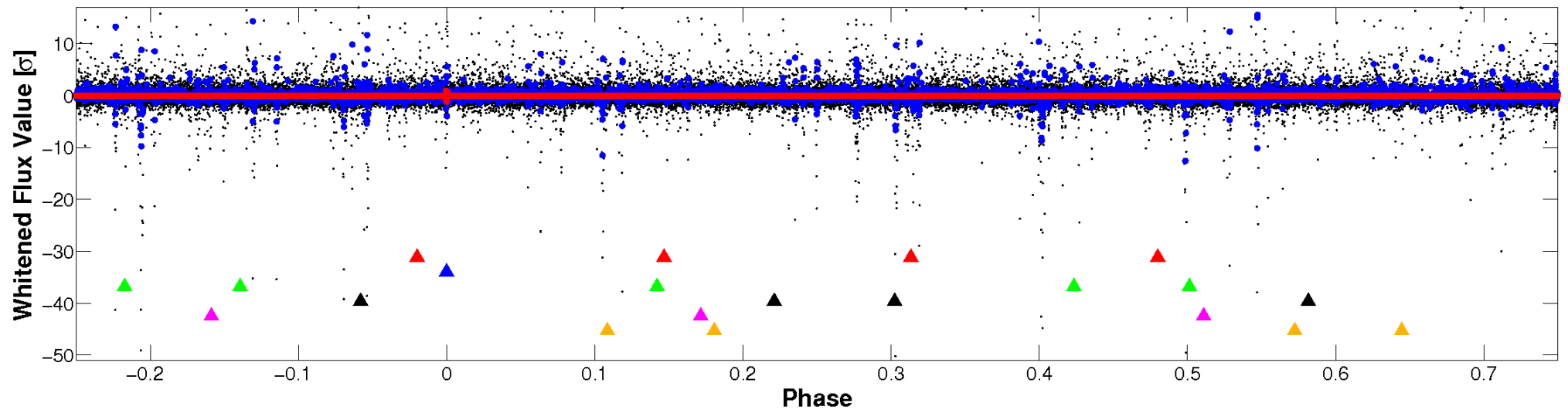


Non-Whitened Vs. Whitened Light Curve

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

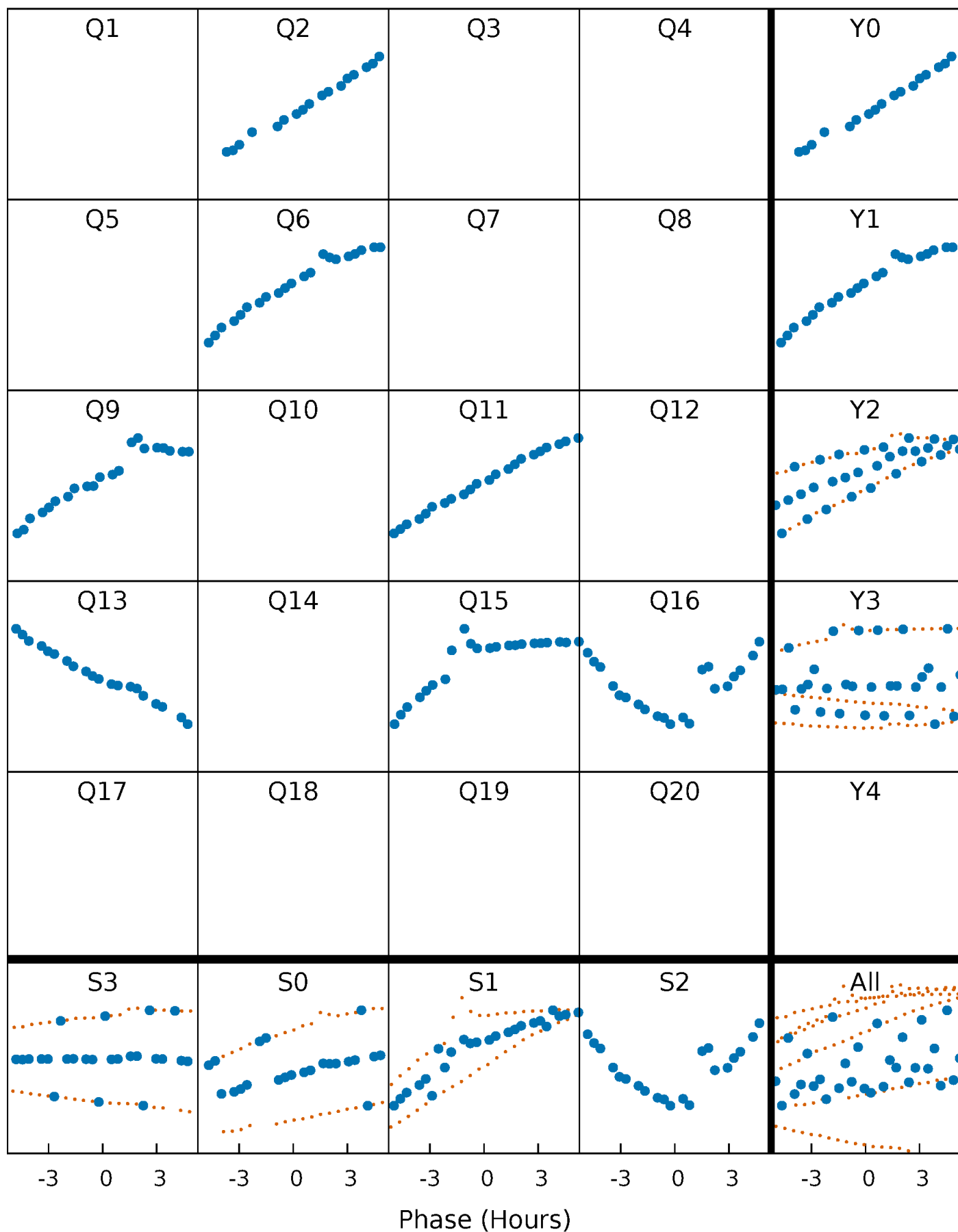


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



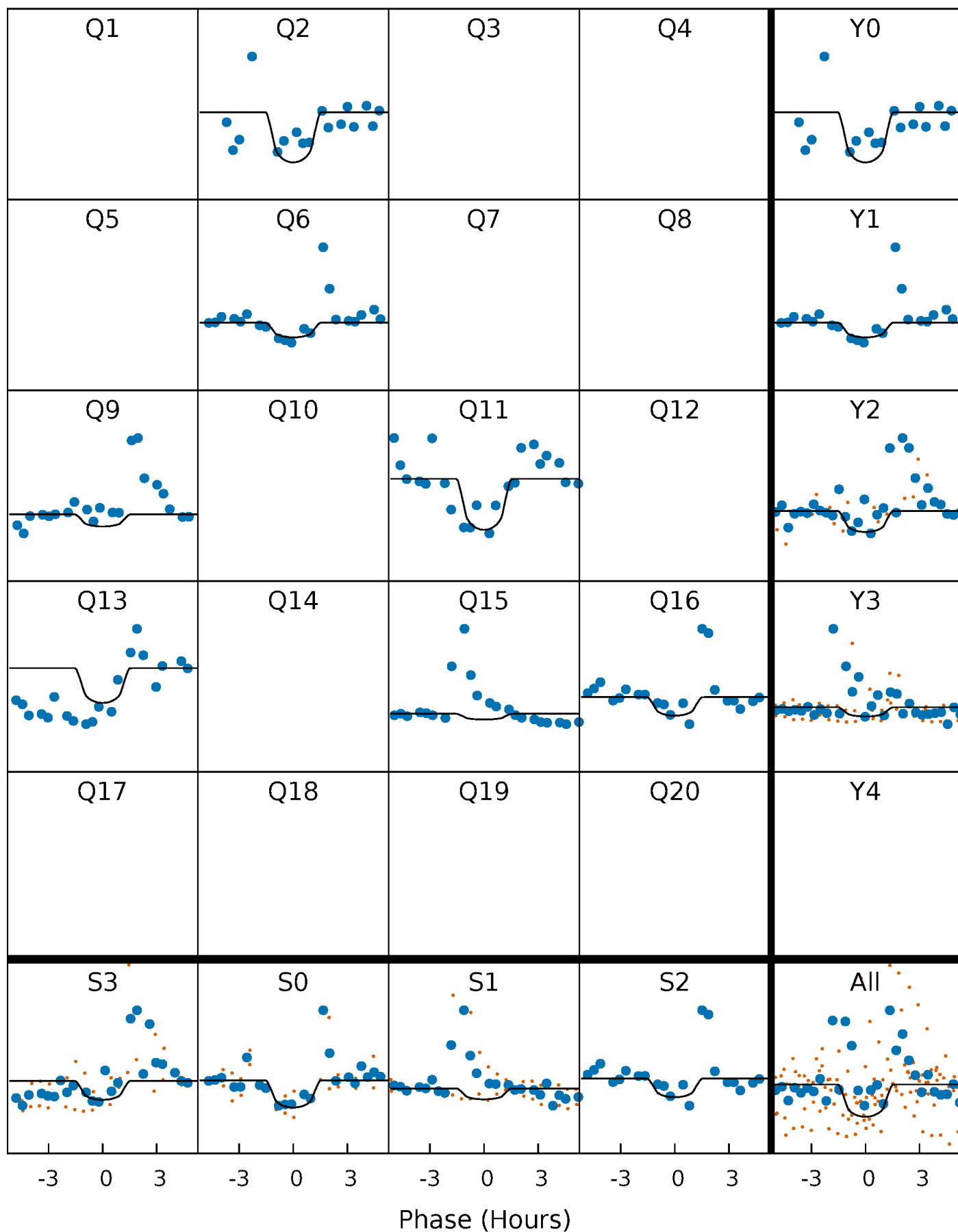
PDC Quarter-Phased Transit Curves

TCE 008774912-02 P=161.538049 Days $T_0=247.881593$ (BKJD)



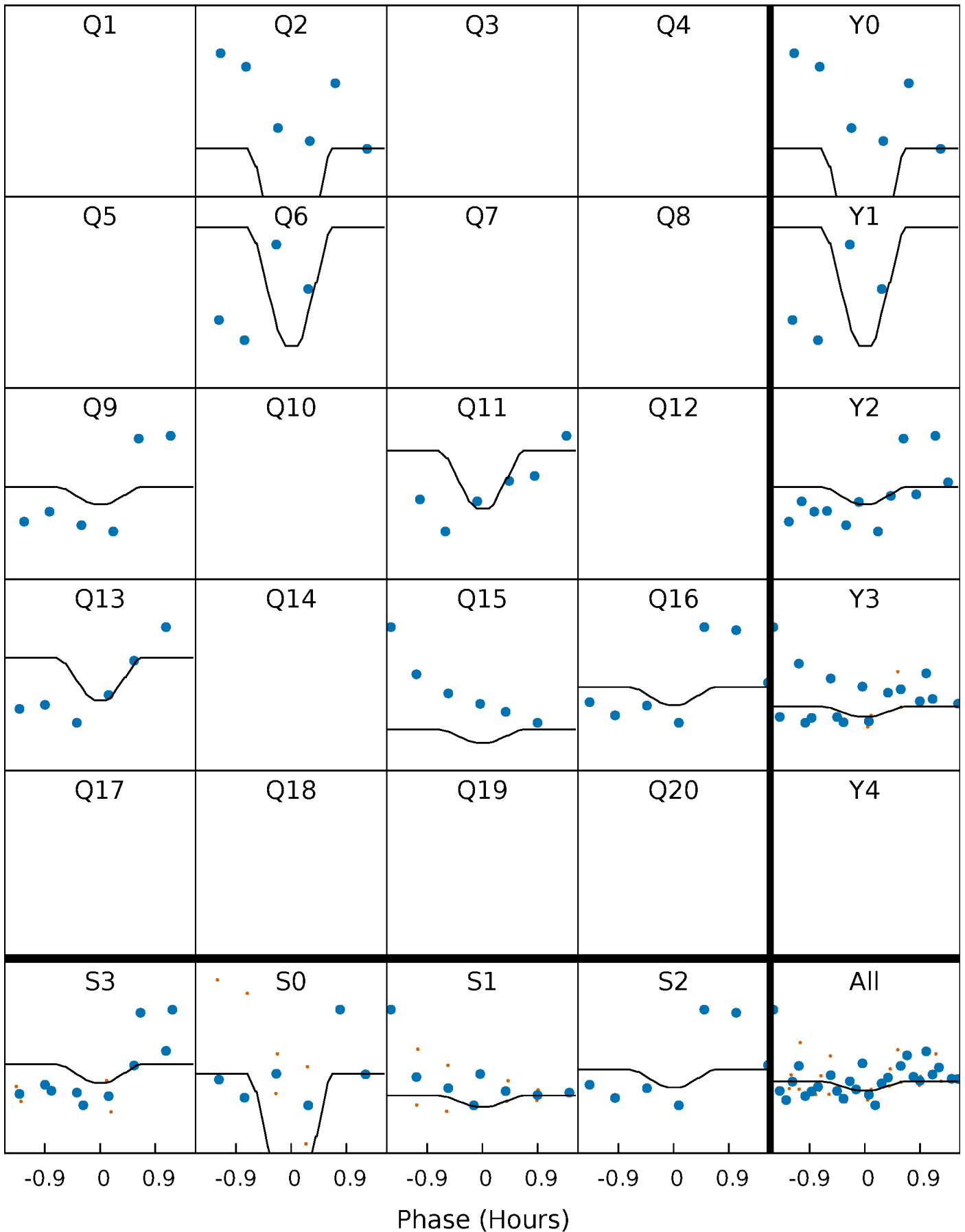
DV Quarter-Phased Transit Curves

TCE 008774912-02 P=161.538049 Days $T_0=247.881593$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

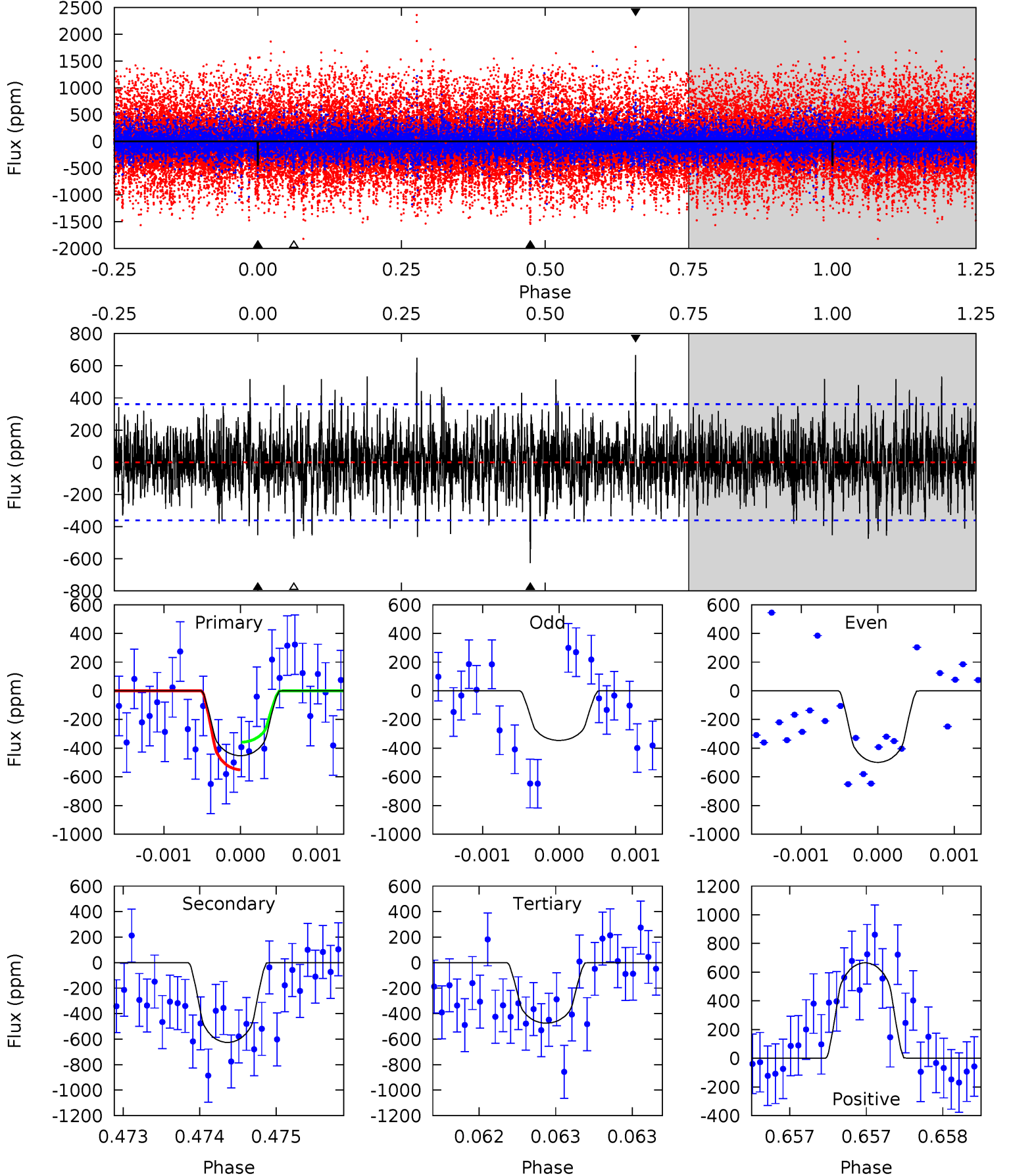
TCE 008774912-02 P=161.538337 Days $T_0=247.913282$ (BKJD)



DV Model-Shift Uniqueness Test

008774912-02, P = 161.538049 Days, E = 86.343544 Days

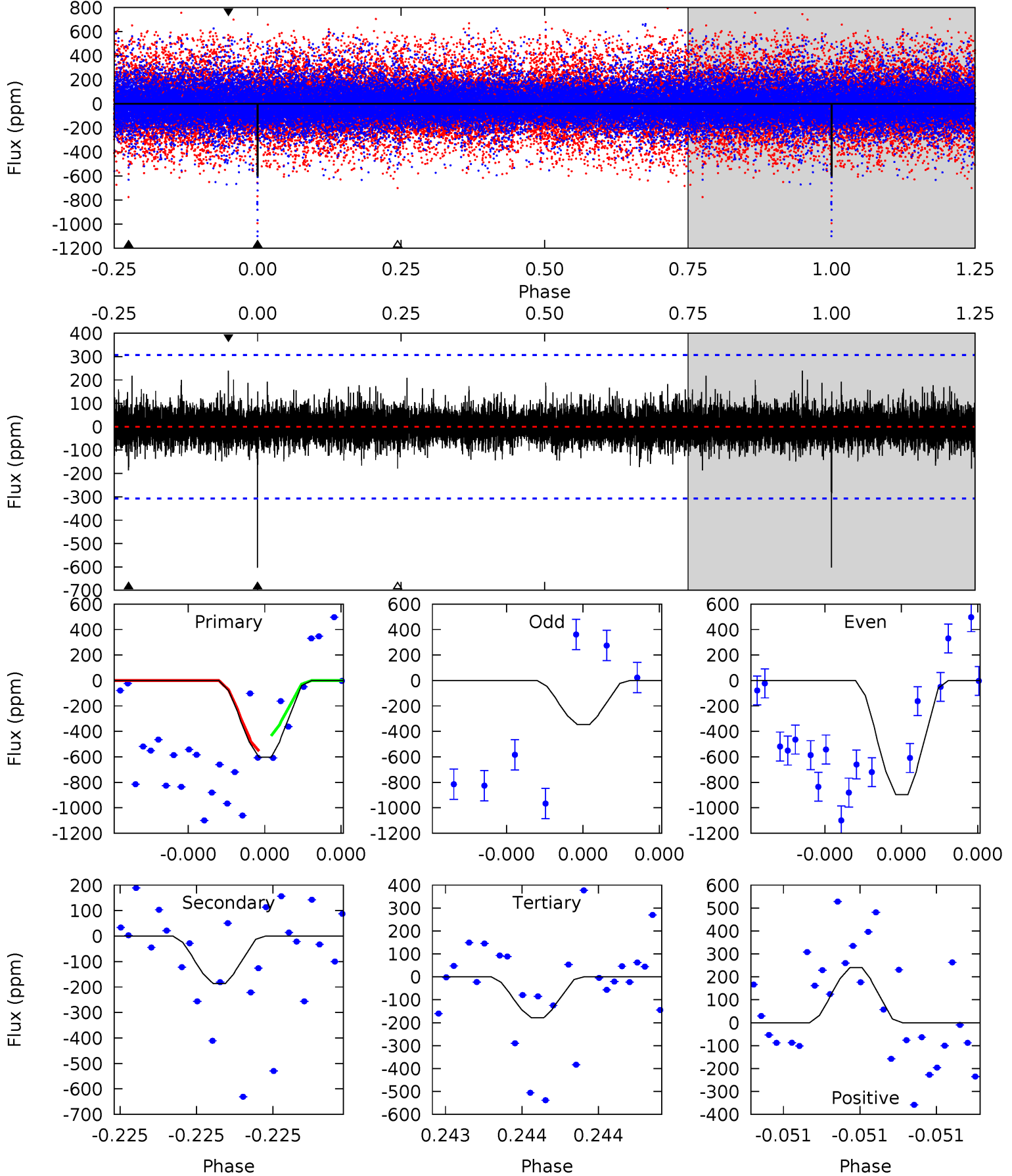
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.89	9.53	7.23	10.1	5.50	3.36	2.04	-0.34	-3.24	2.30	-0.60	0.99	-0.11	0.52	1.48



Alt Model-Shift Uniqueness Test

008774912-02, P = 161.538337 Days, E = 86.374945 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	3.42	3.29	4.41	5.65	3.60	0.81	7.80	6.67	0.14	-0.99	4.65	0.64	0.28	0



Stellar Parameters For KIC 008774912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4748^{+143}_{-107}	$2.792^{+0.413}_{-0.337}$	$-0.240^{+0.300}_{-0.200}$	$6.264^{+4.091}_{-2.203}$	$0.886^{+0.432}_{-0.023}$	$0.005^{+0.016}_{-0.003}$
	+3%/-2%	+15%/-12%	+125%/-83%	+65%/-35%	+49%/-3%	+319%/-67%
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 008774912-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-626 ± 66	$32.77^{+33.71}_{-22.86}$	969^{+144}_{-118}	3725^{+2447}_{-691}	109^{+1050}_{-83}
Alt.	-186 ± 54	$31.15^{+38.65}_{-20.49}$	982^{+137}_{-123}	3126^{+1437}_{-574}	34^{+259}_{-27}

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

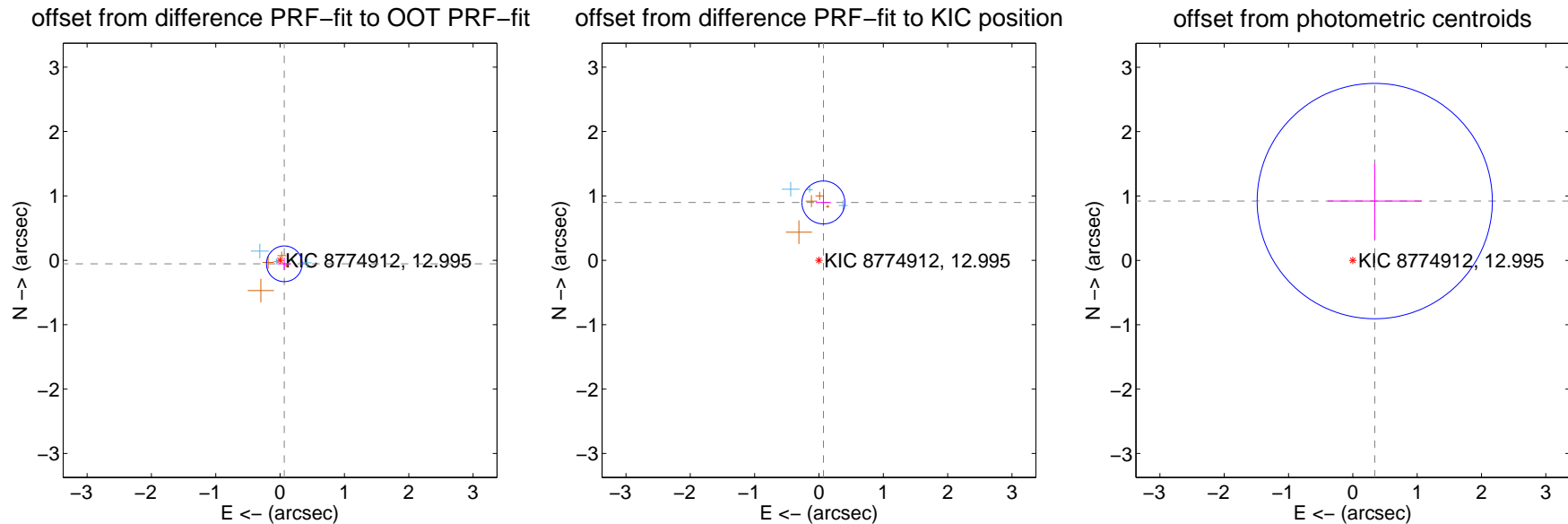
DV Centroid Data

Supplemental centroid analysis for 008774912-02. Kepler magnitude: 12.99. Transit SNR 6.75

There are 3 quarters with good PRF difference image offsets

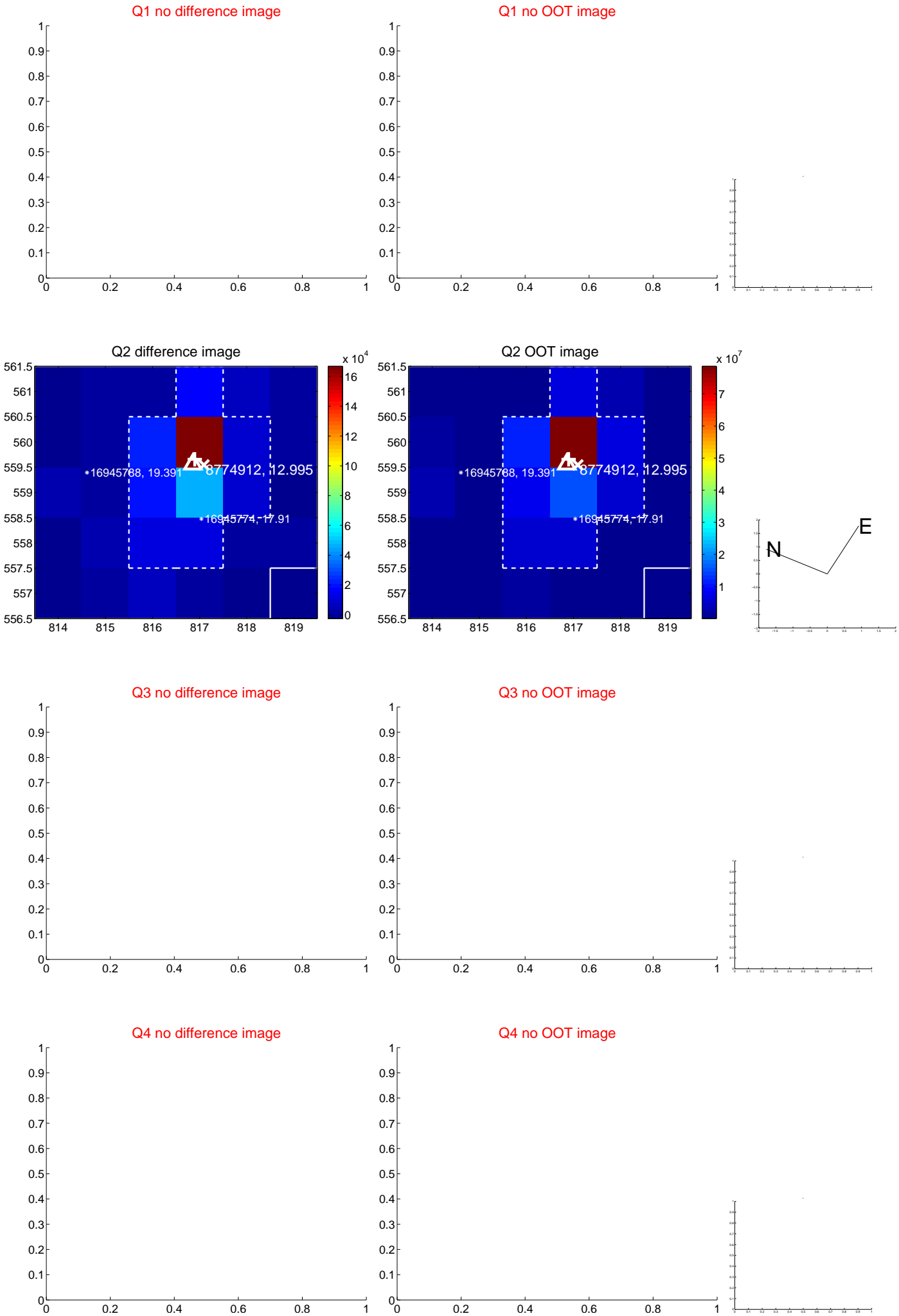
The direct PRF centroid is offset from the target star catalog position by about 1.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.085 ± 0.092	0.92	-0.065 ± 0.108	-0.054 ± 0.097
PRF-fit source offset from KIC position	0.901 ± 0.111	8.11	-0.069 ± 0.117	0.898 ± 0.110
photometric centroid source offset	0.98 ± 0.61	1.61	-0.34 ± 0.73	0.92 ± 0.59

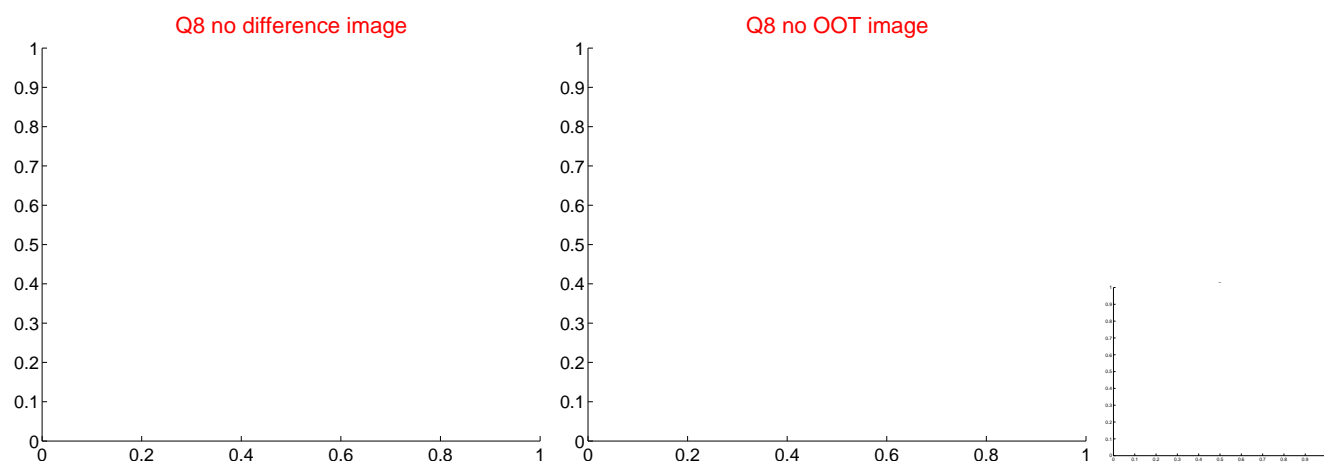
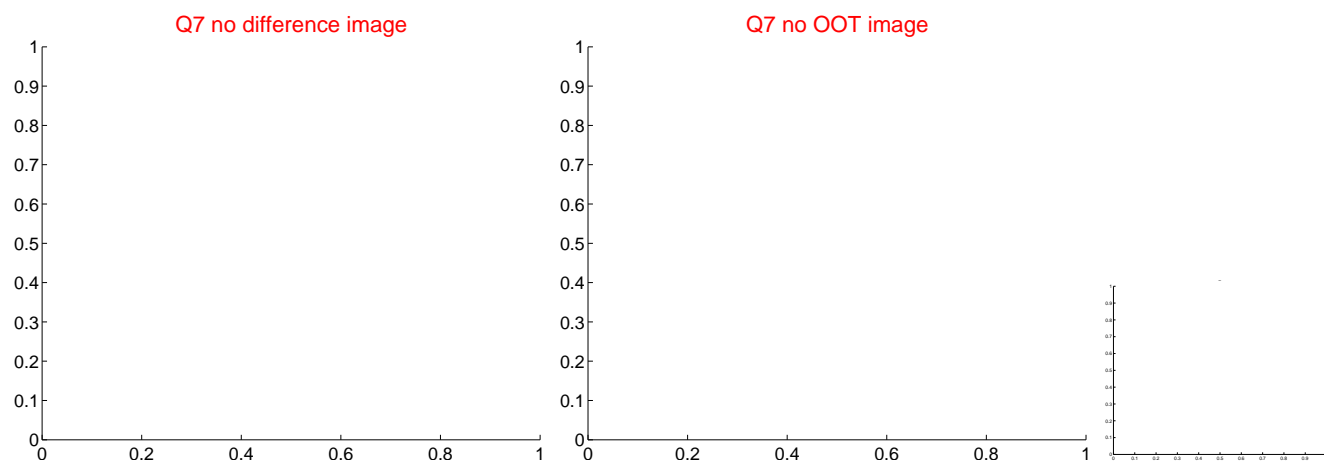
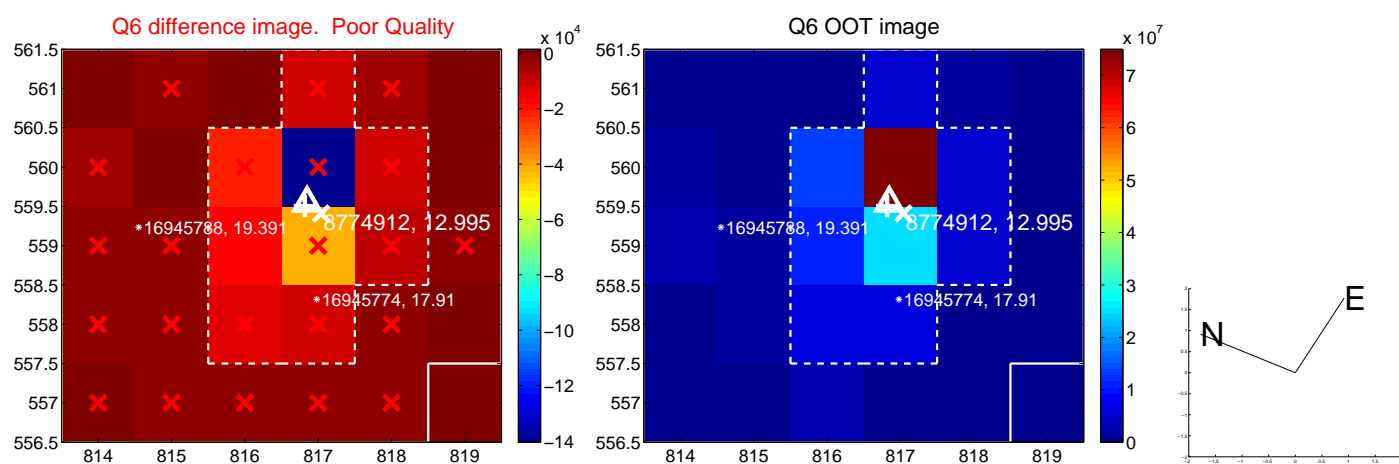
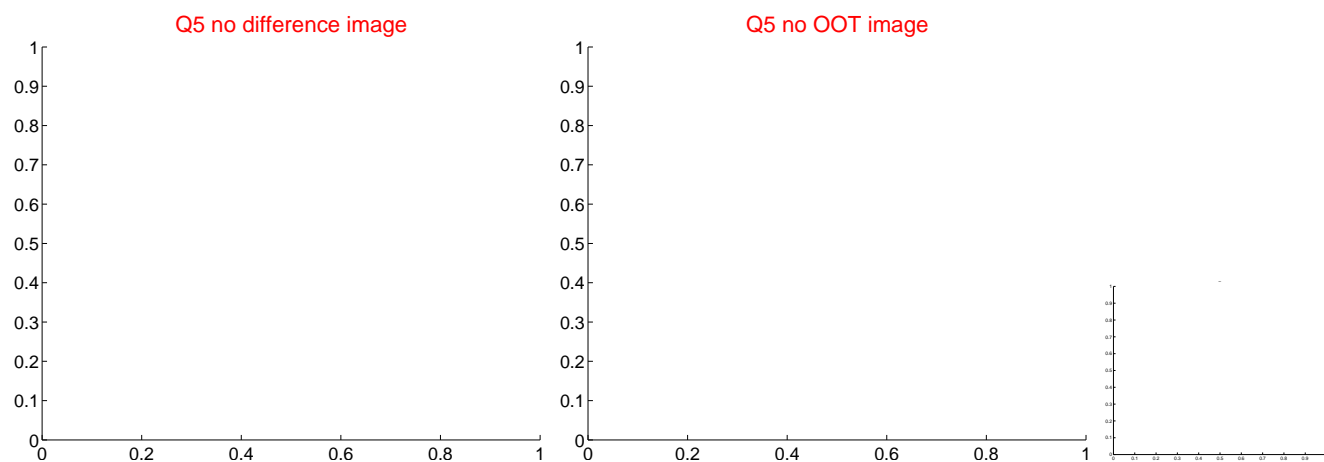


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

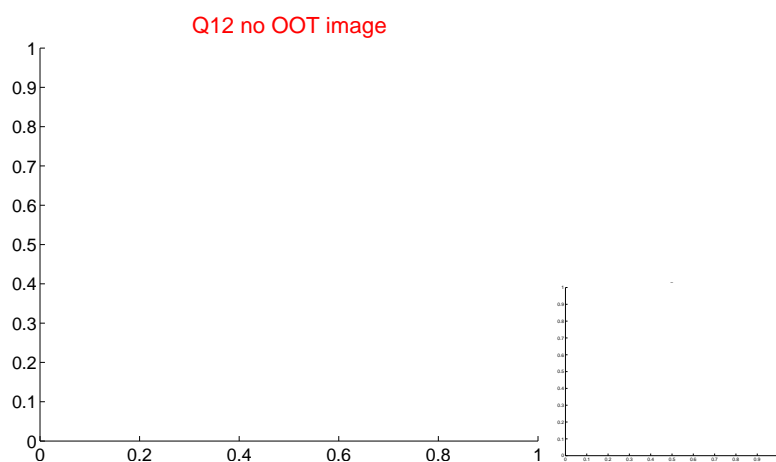
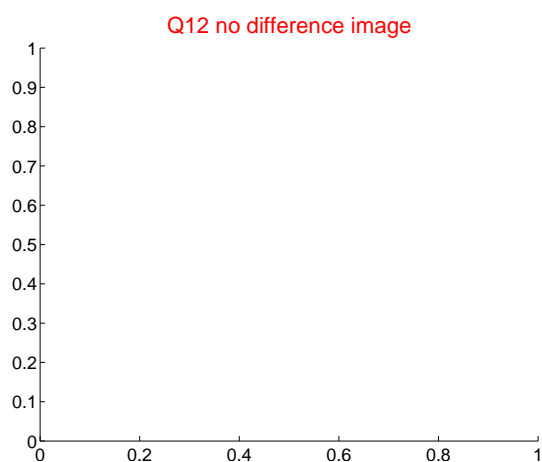
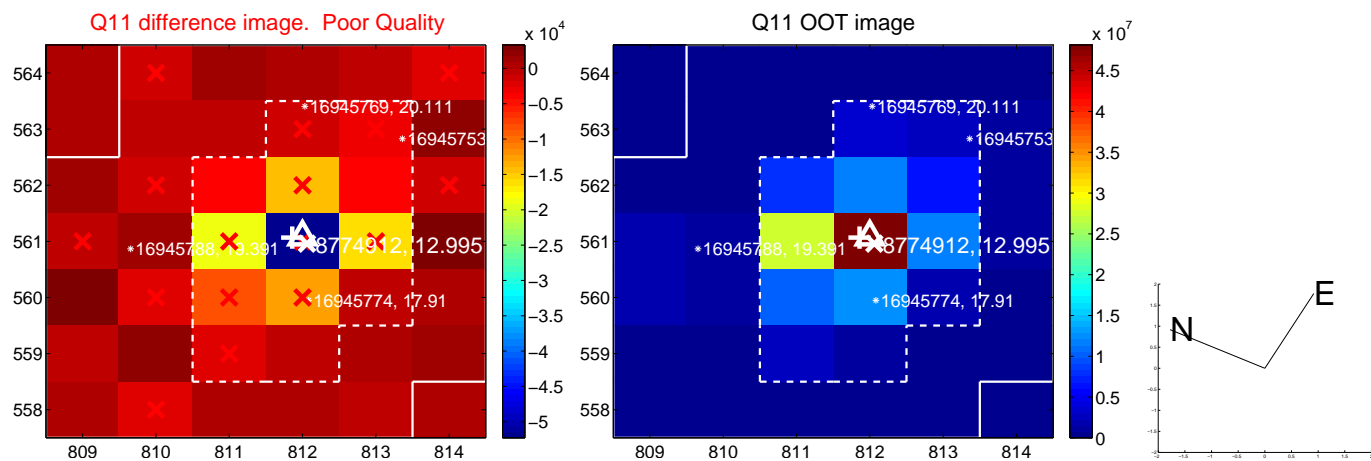
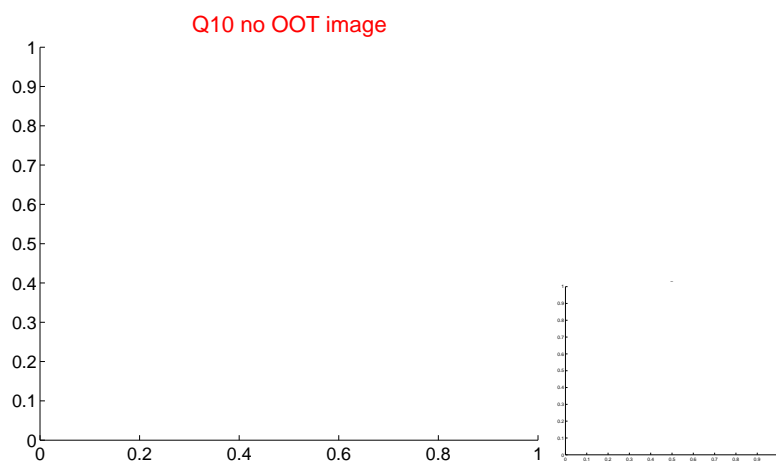
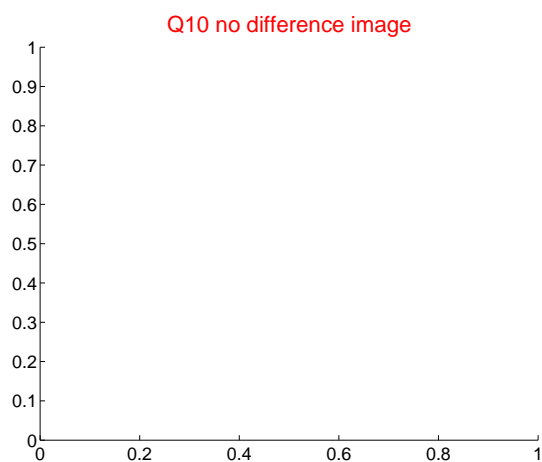
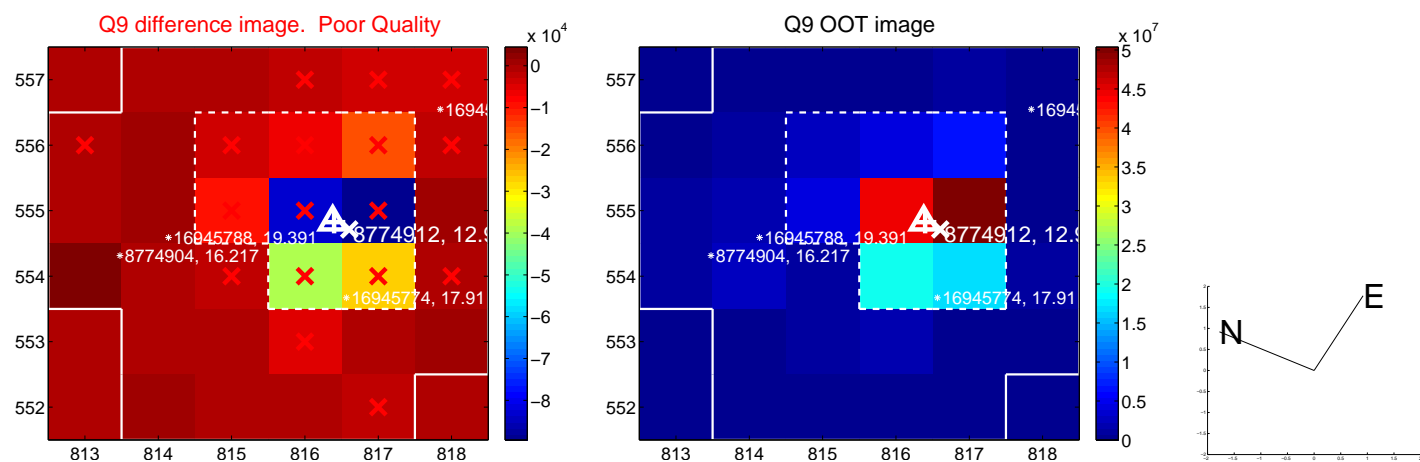
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



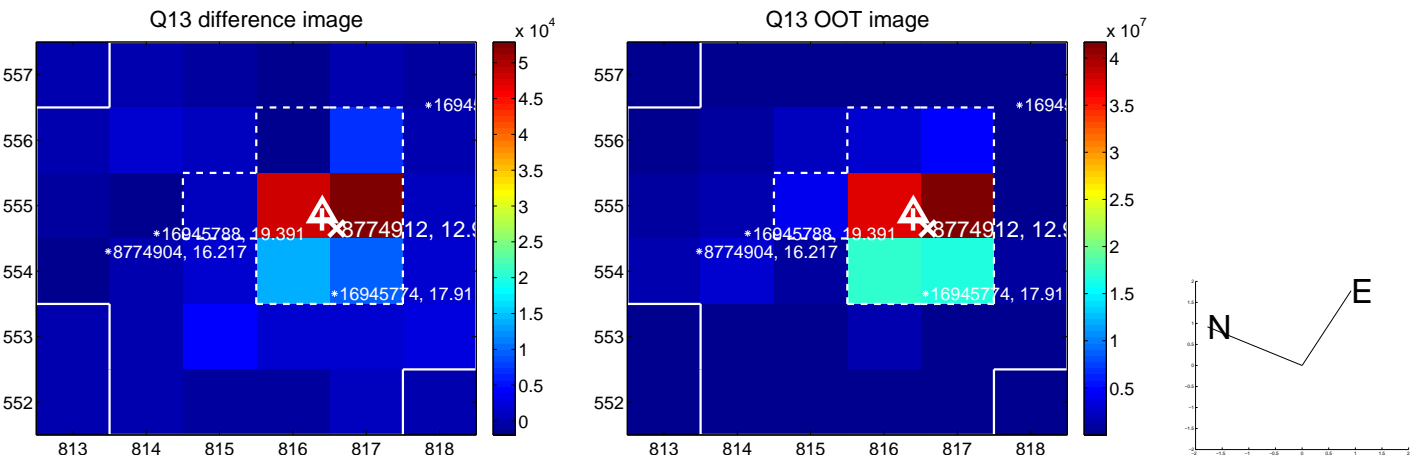
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



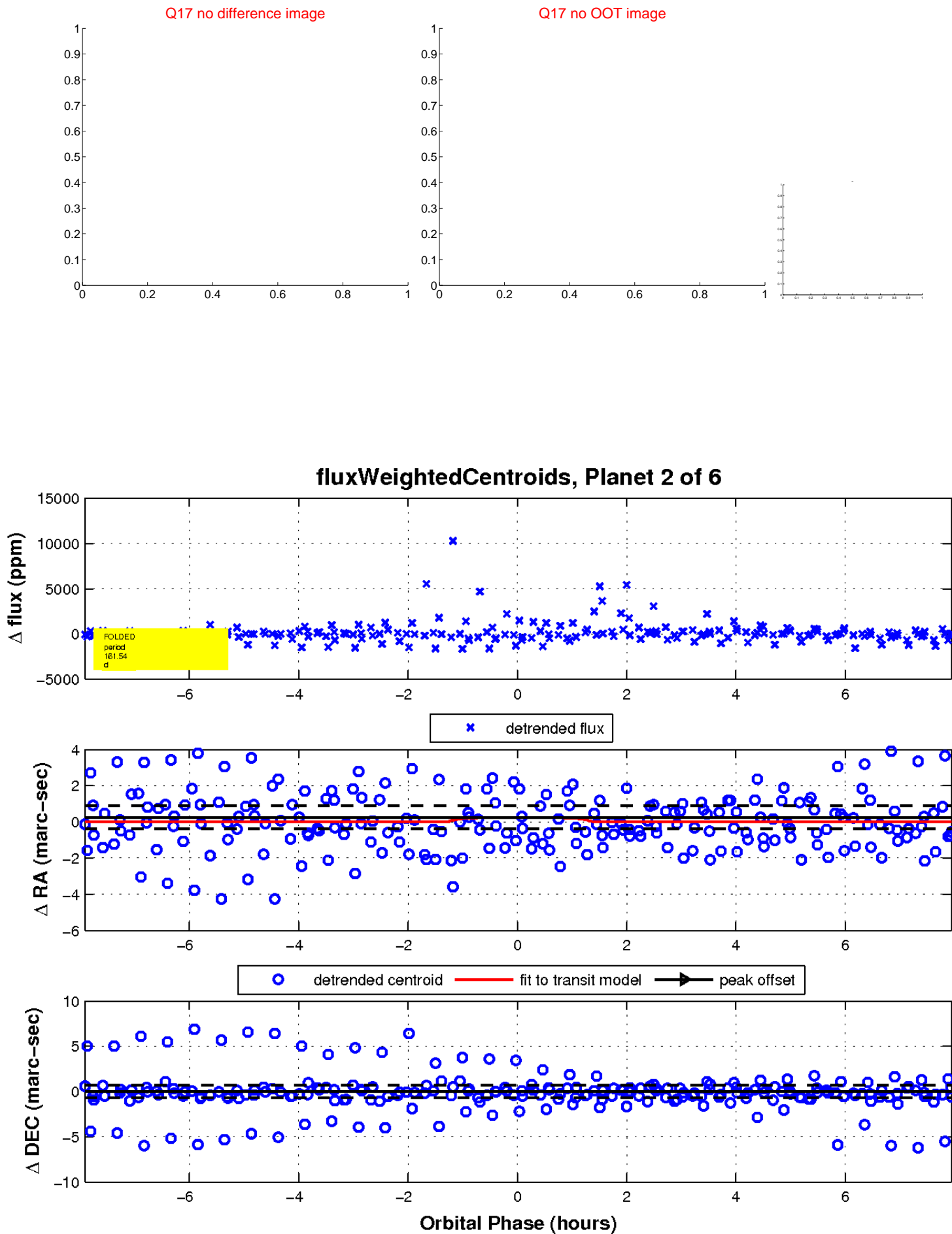
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



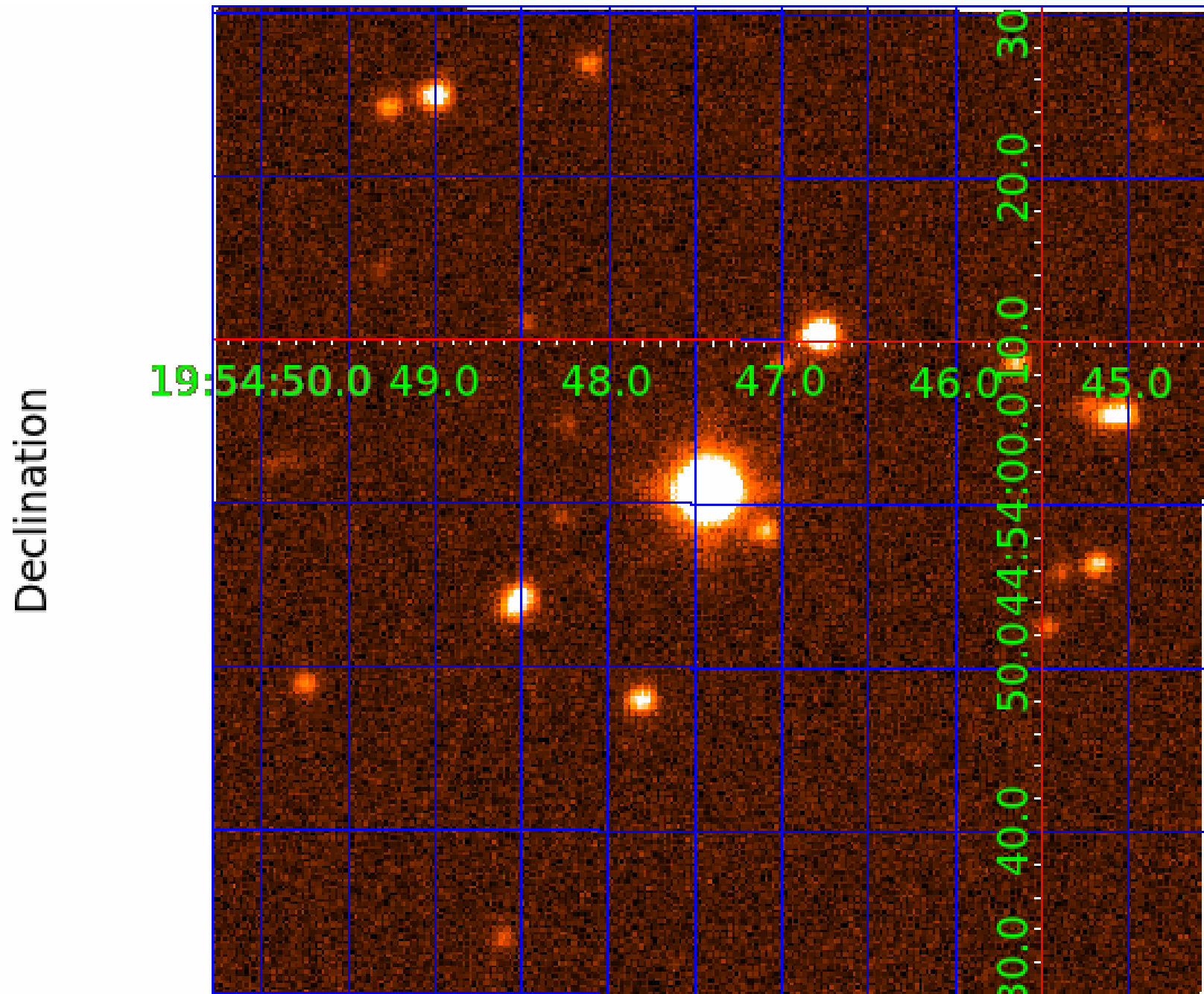
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008774912

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})
008774912-01	OBS	No	349.990766	244.673589	699.8	4.365	29.7	3.5	6.26	4748	16.95	20.48
008774912-02	OBS	No	161.538049	247.881593	677.8	2.649	16.6	6.7	6.26	4748	18.02	57.43
008774912-03	OBS	No	265.033261	386.911402	1876.3	3.086	16.0	9.9	6.26	4748	30.02	29.68
008774912-04	OBS	No	426.394218	135.189409	1581.8	7.714	20.4	6.6	6.26	4748	25.05	15.74
008774912-05	OBS	No	592.800019	275.586499	450.2	3.189	17.1	1.9	6.26	4748	13.96	10.15
008774912-06	OBS	No	409.672444	178.814685	536.3	3.500	16.4	-1.0	6.26	4748	14.00	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008774912-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
008774912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008774912-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-06	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.

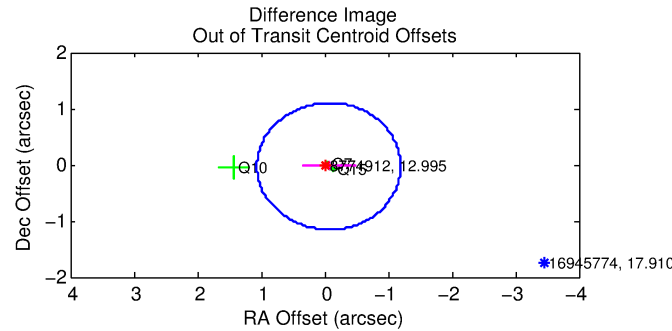
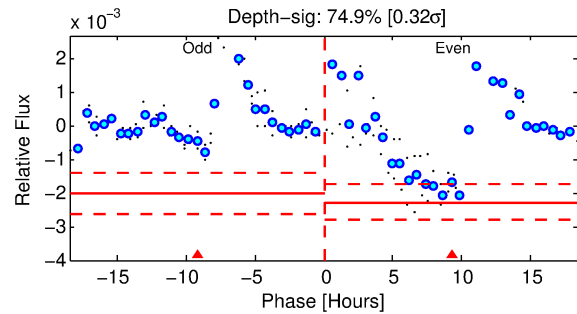
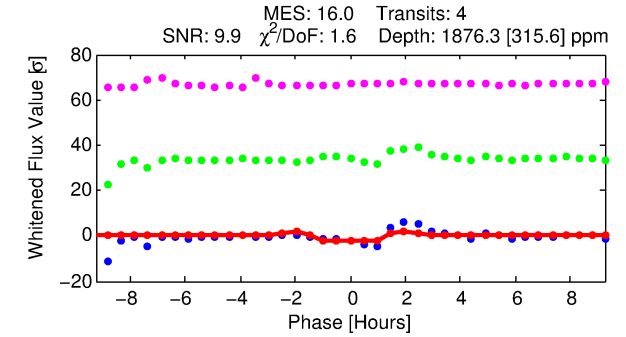
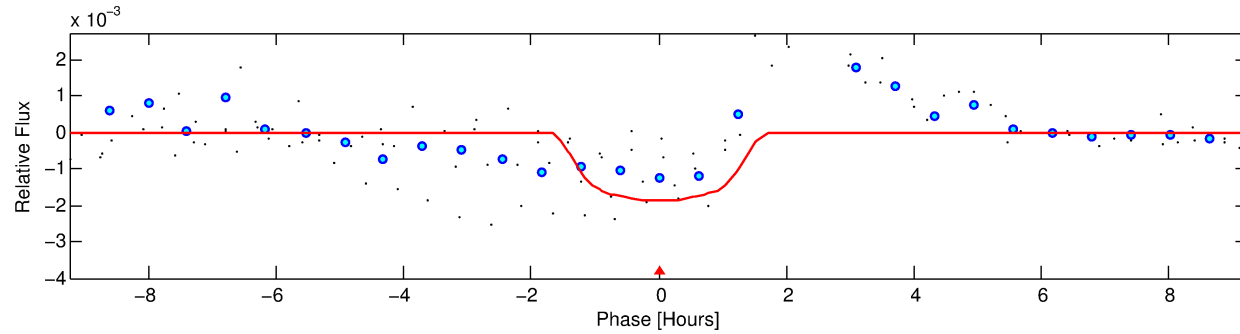
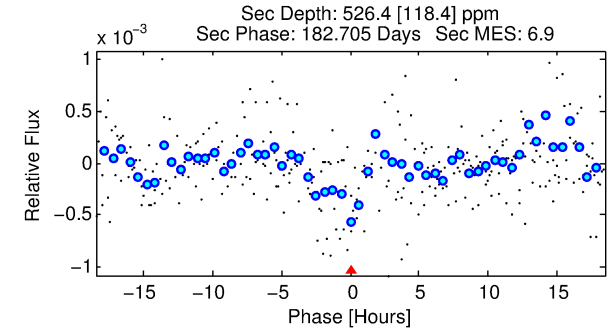
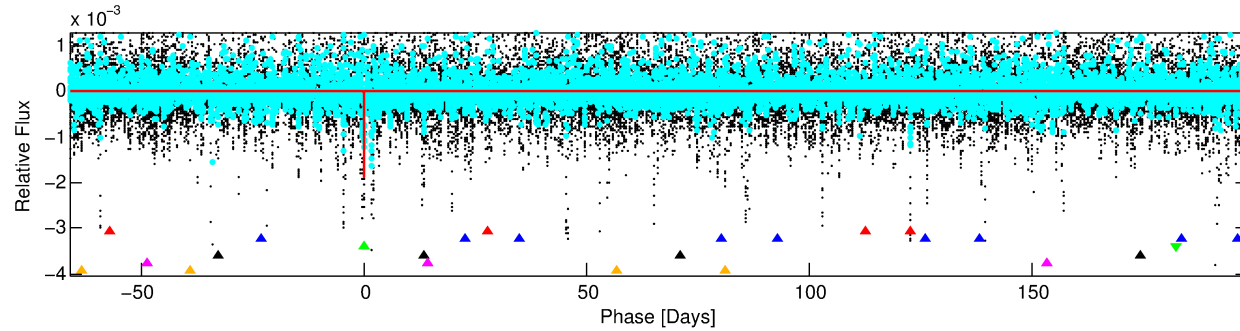
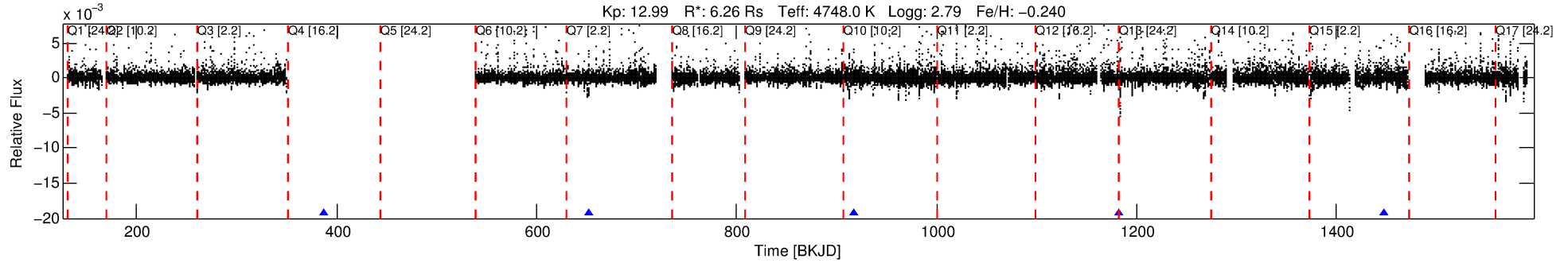
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008774912-03

No Significant Match Found

DV One-Page Summary

KIC: 8774912 Candidate: 3 of 6 Period: 265.033 d



DV Fit Results:

Period = 265.03326 [0.00306] d
Epoch = 386.9114 [0.0080] BKJD
Rp/R* = 0.0439 [0.0293]
a/R* = 459.75 [997.26]
b = 0.77 [1.16]
Seff = 29.68 [23.10]
Teq = 595 [116] K
Rp = 30.02 [28.01] Re
a = 0.7759 [0.4179] AU
Ag = 193.49 [300.93] [0.64 σ]
Teffp = 3432 [1164] K [2.42 σ]

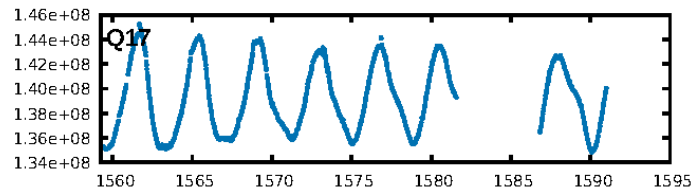
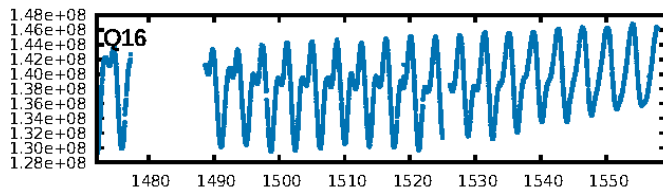
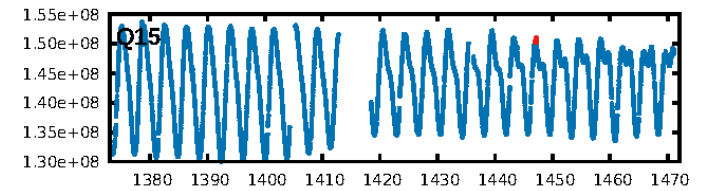
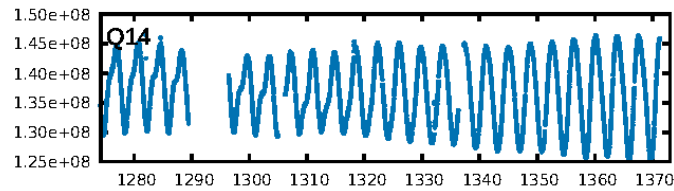
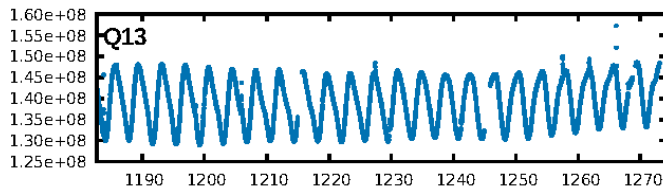
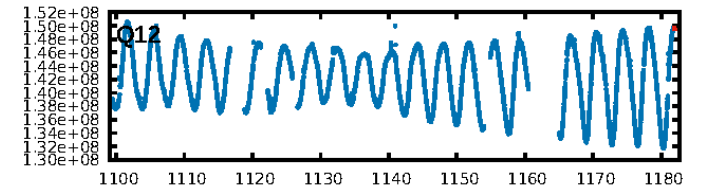
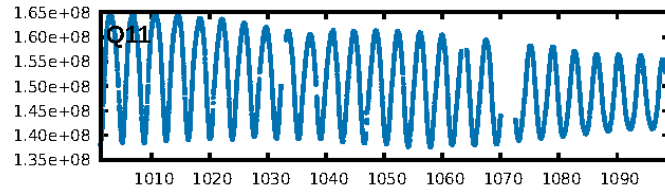
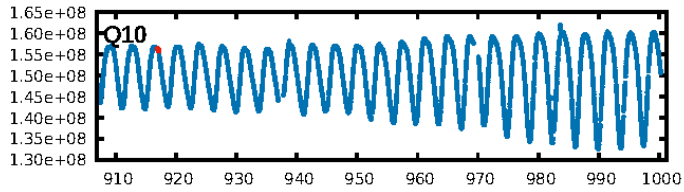
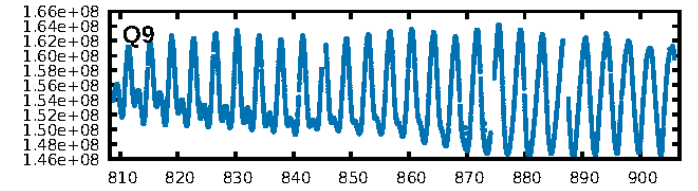
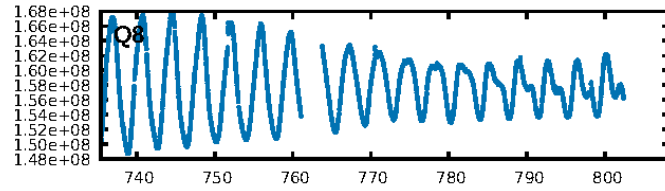
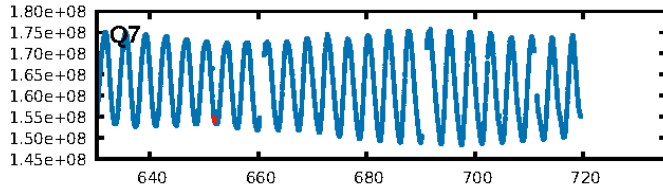
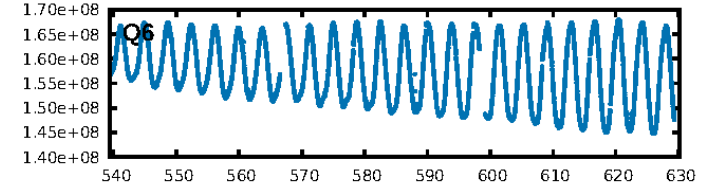
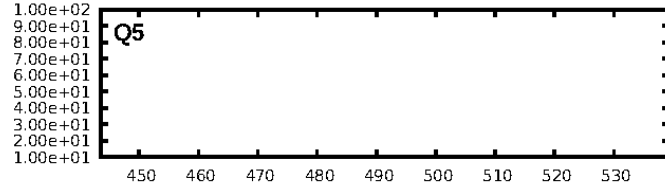
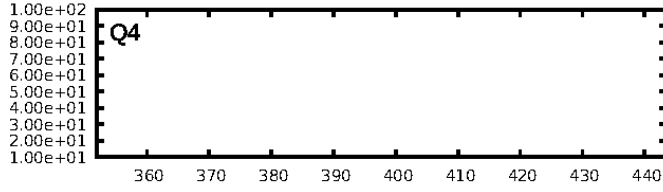
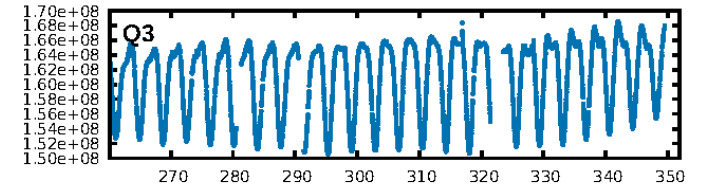
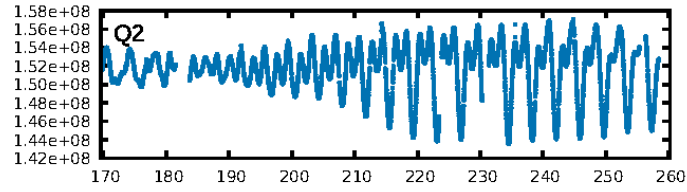
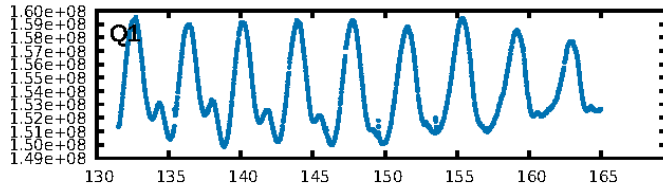
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [610.79 σ]
LongPeriod-sig: 100.0% [381.44 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 8.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.5612
Centroid-sig: 7.9%
Centroid-so: 1.341 arcsec [5.10 σ]
OotOffset-rm: 0.072 arcsec [0.19 σ]
KicOffset-rm: 0.858 arcsec [8.77 σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

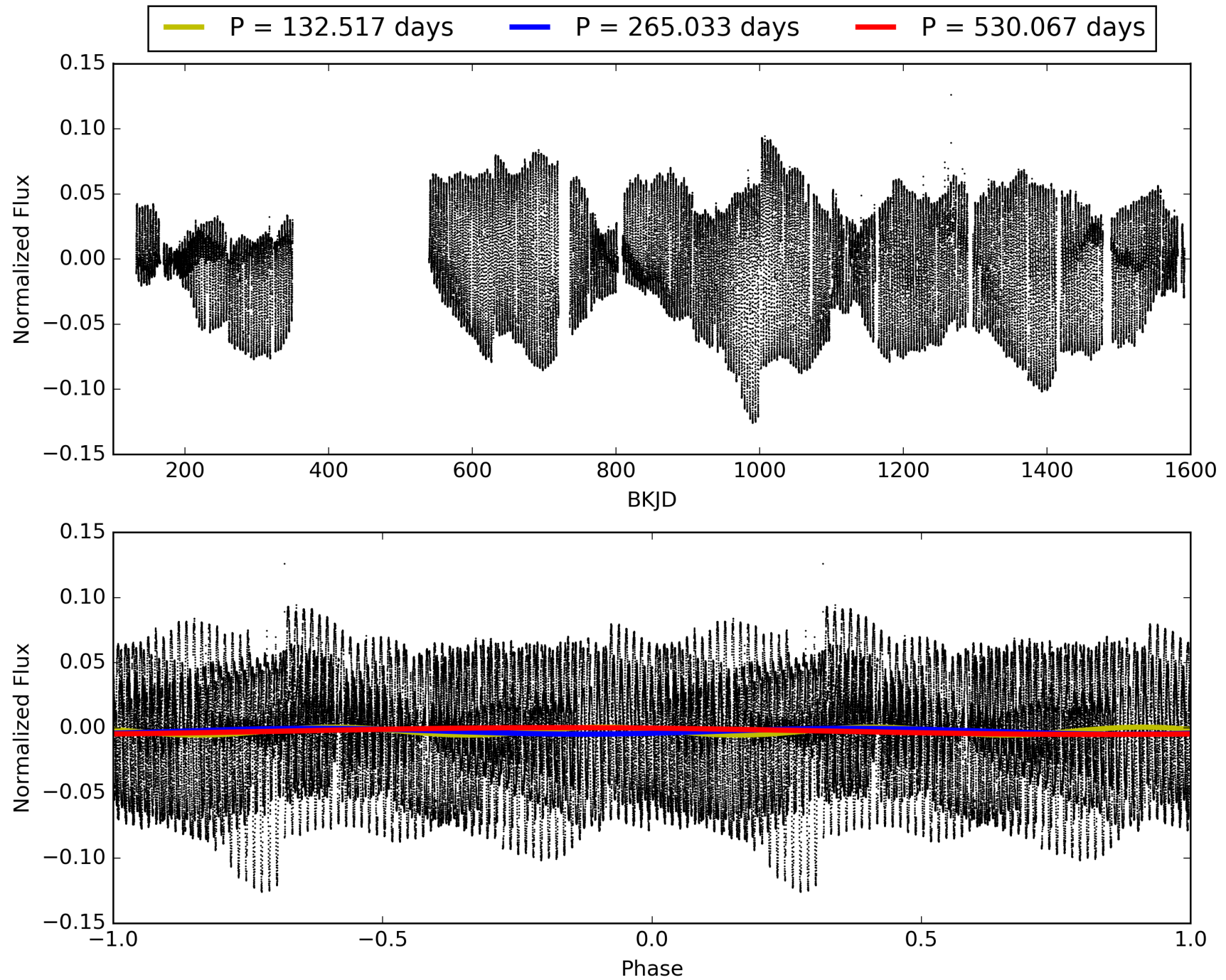
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:38:05 Z

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

TCE 008774912-03, PDC Light Curves

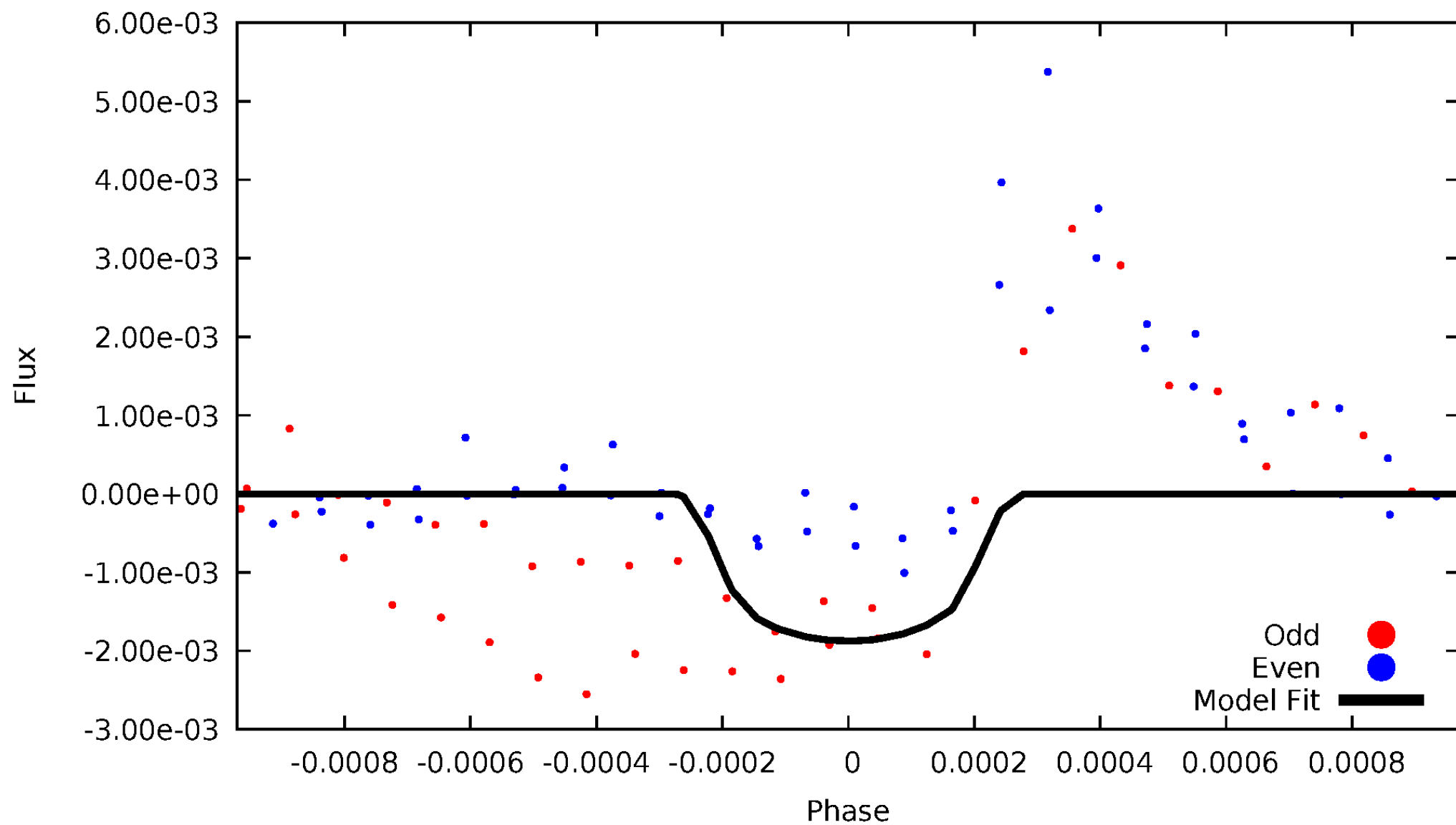


TCE 008774912-03



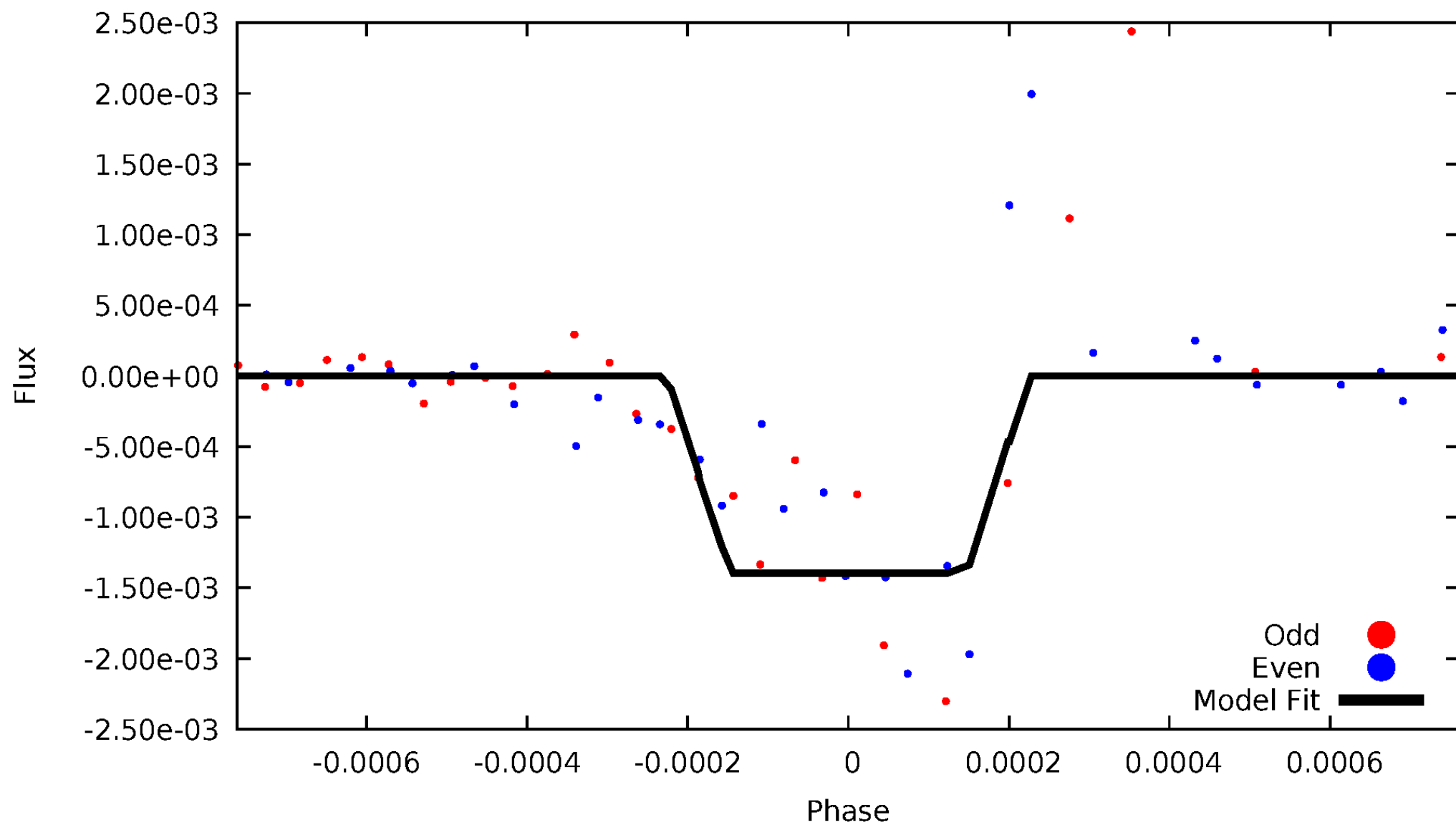
DV Odd/Even

TCE 008774912-03



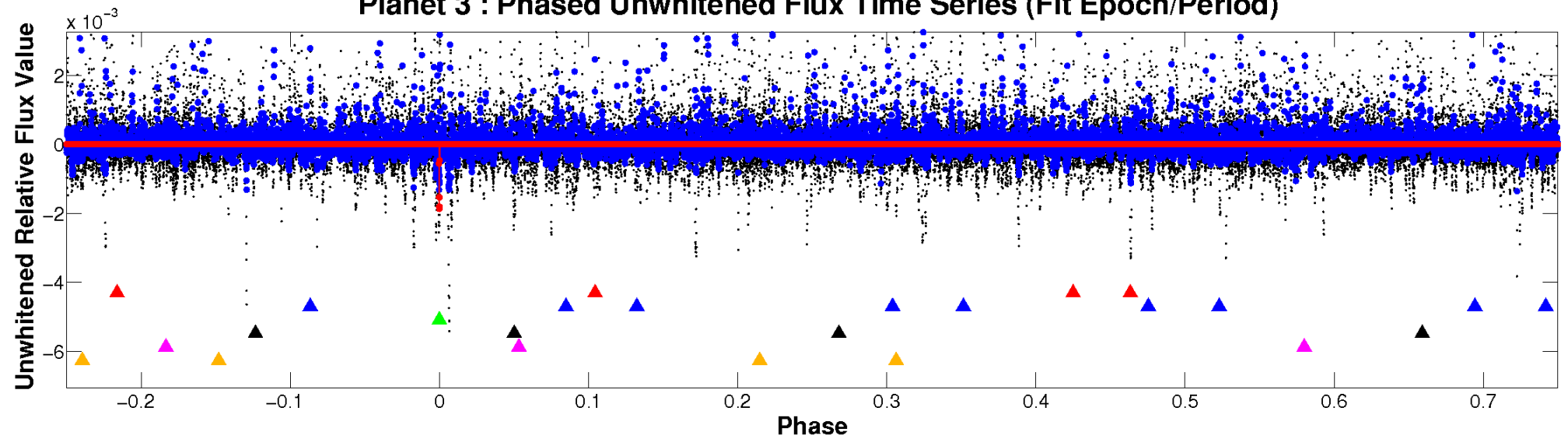
ALT Odd/Even

TCE 008774912-03

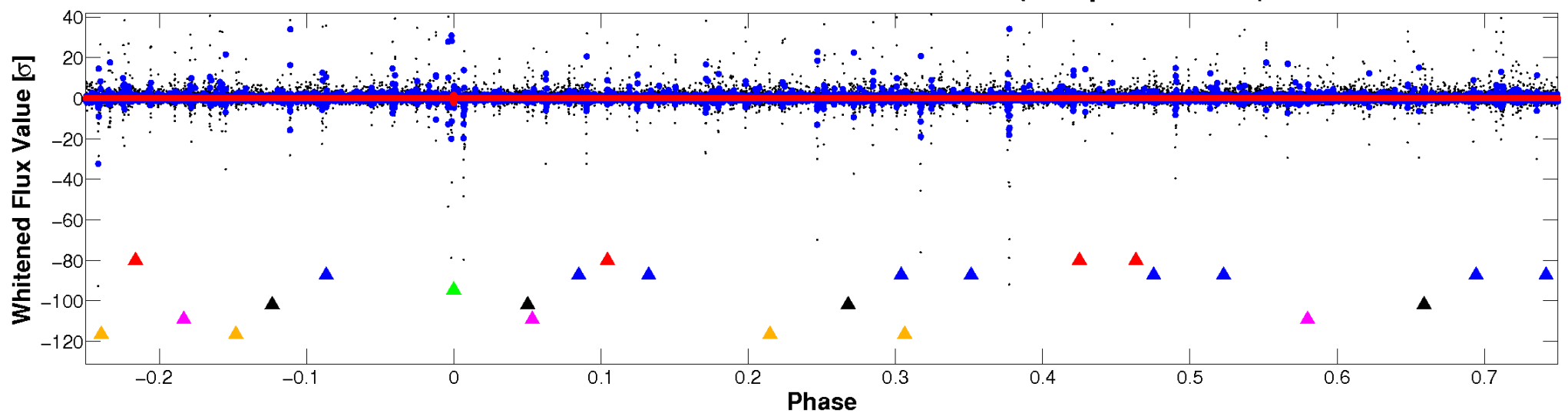


Non-Whitened Vs. Whitened Light Curve

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

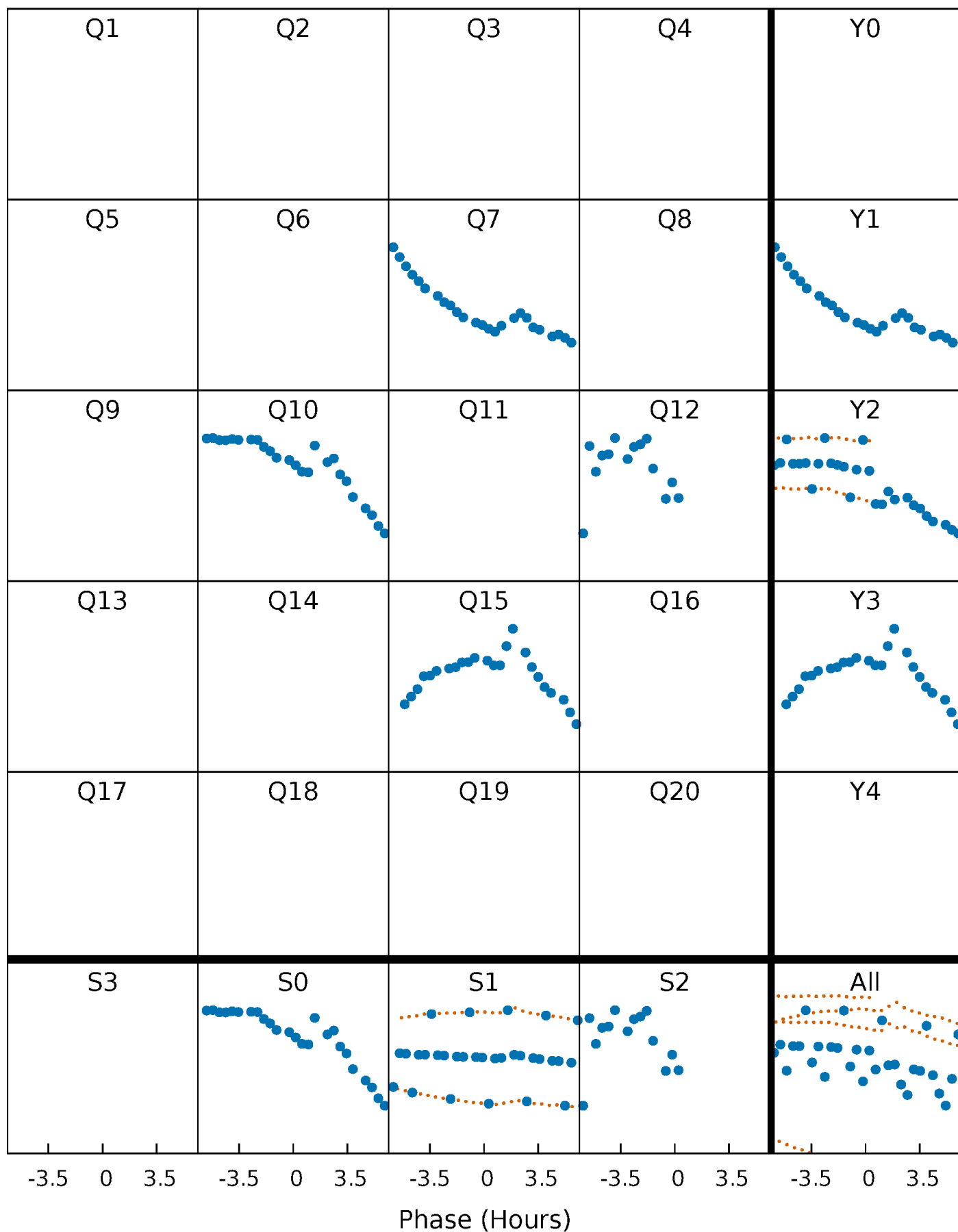


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



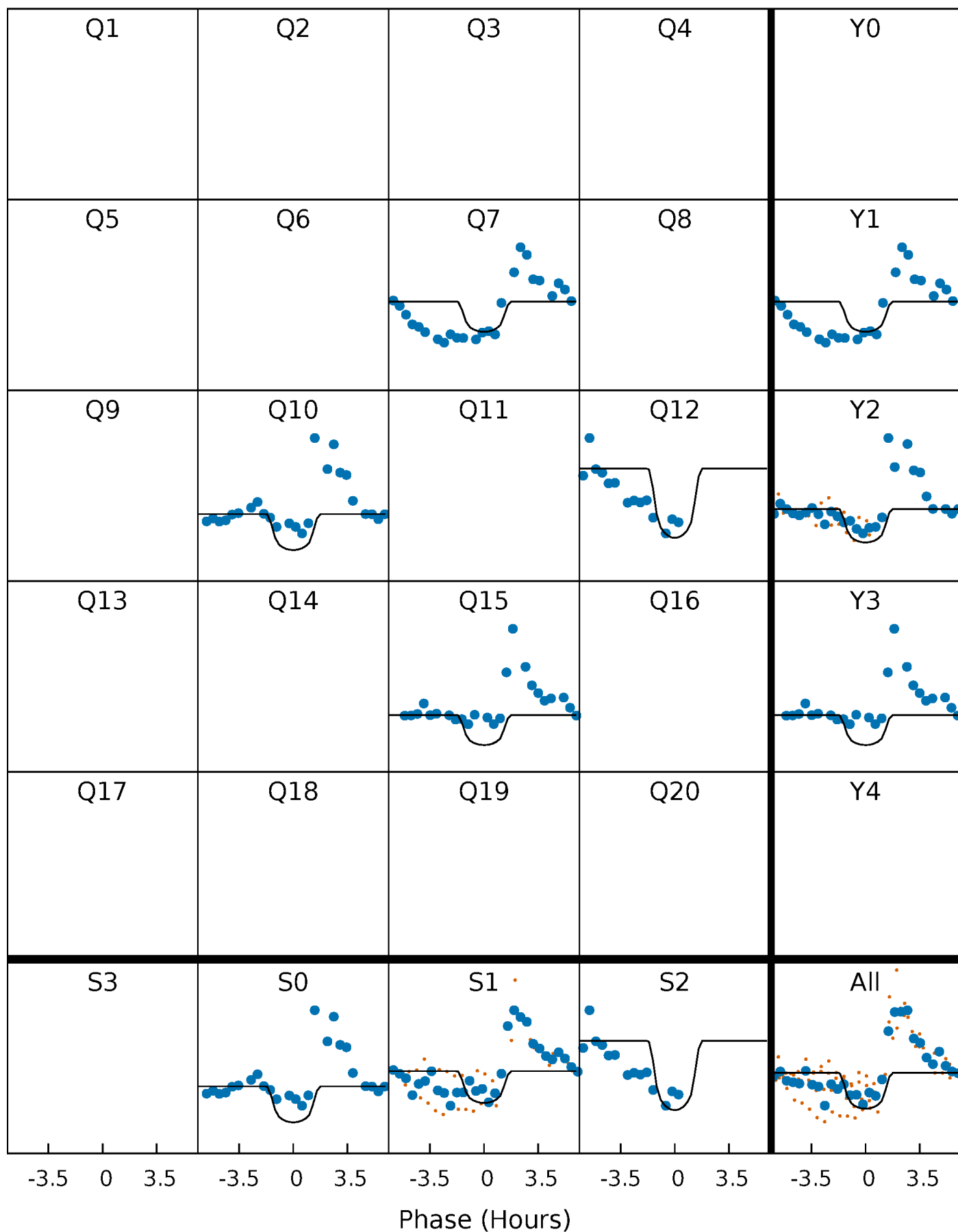
PDC Quarter-Phased Transit Curves

TCE 008774912-03 P=265.033260 Days $T_0=386.911402$ (BKJD)



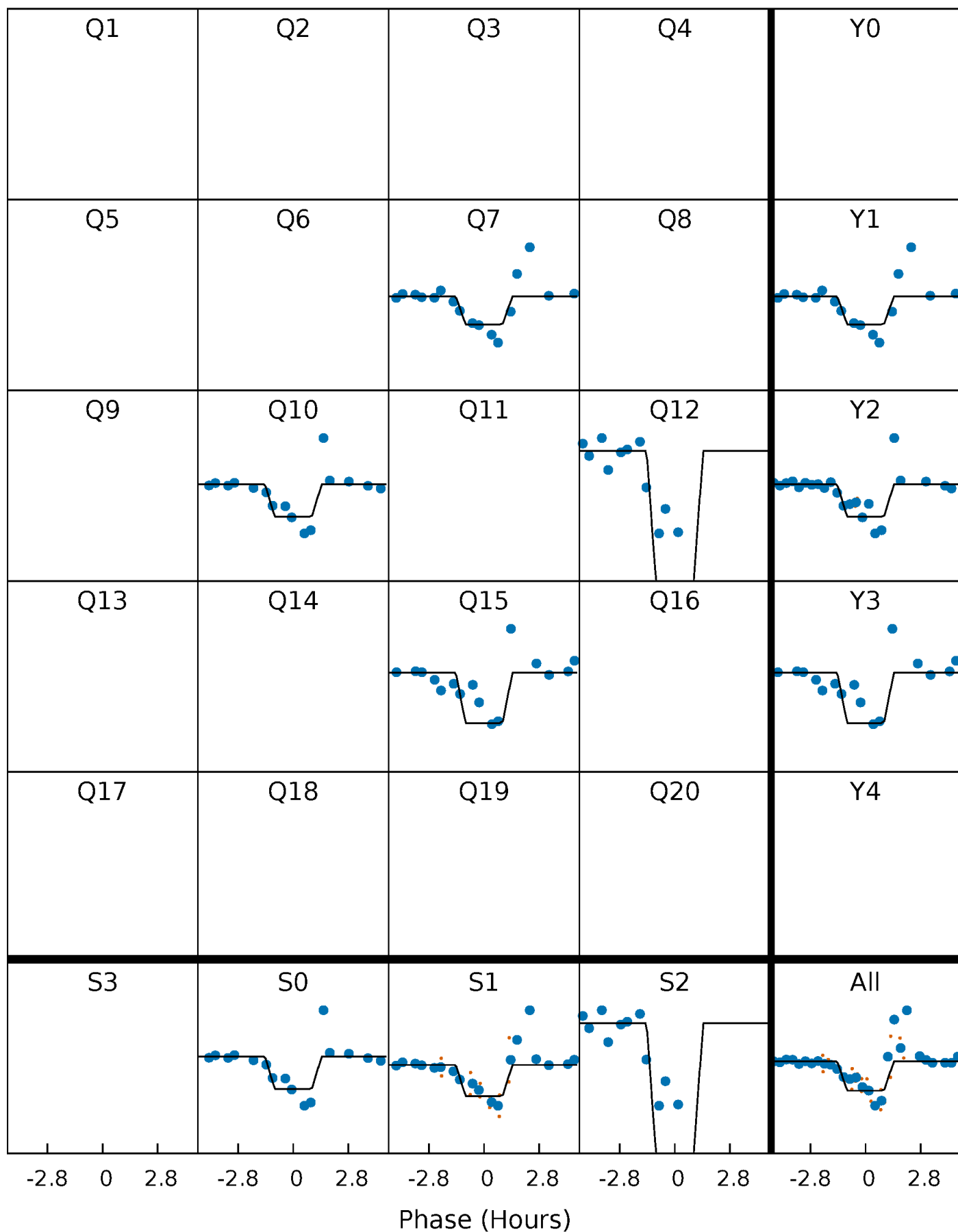
DV Quarter-Phased Transit Curves

TCE 008774912-03 $P=265.033260$ Days $T_0=386.911402$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

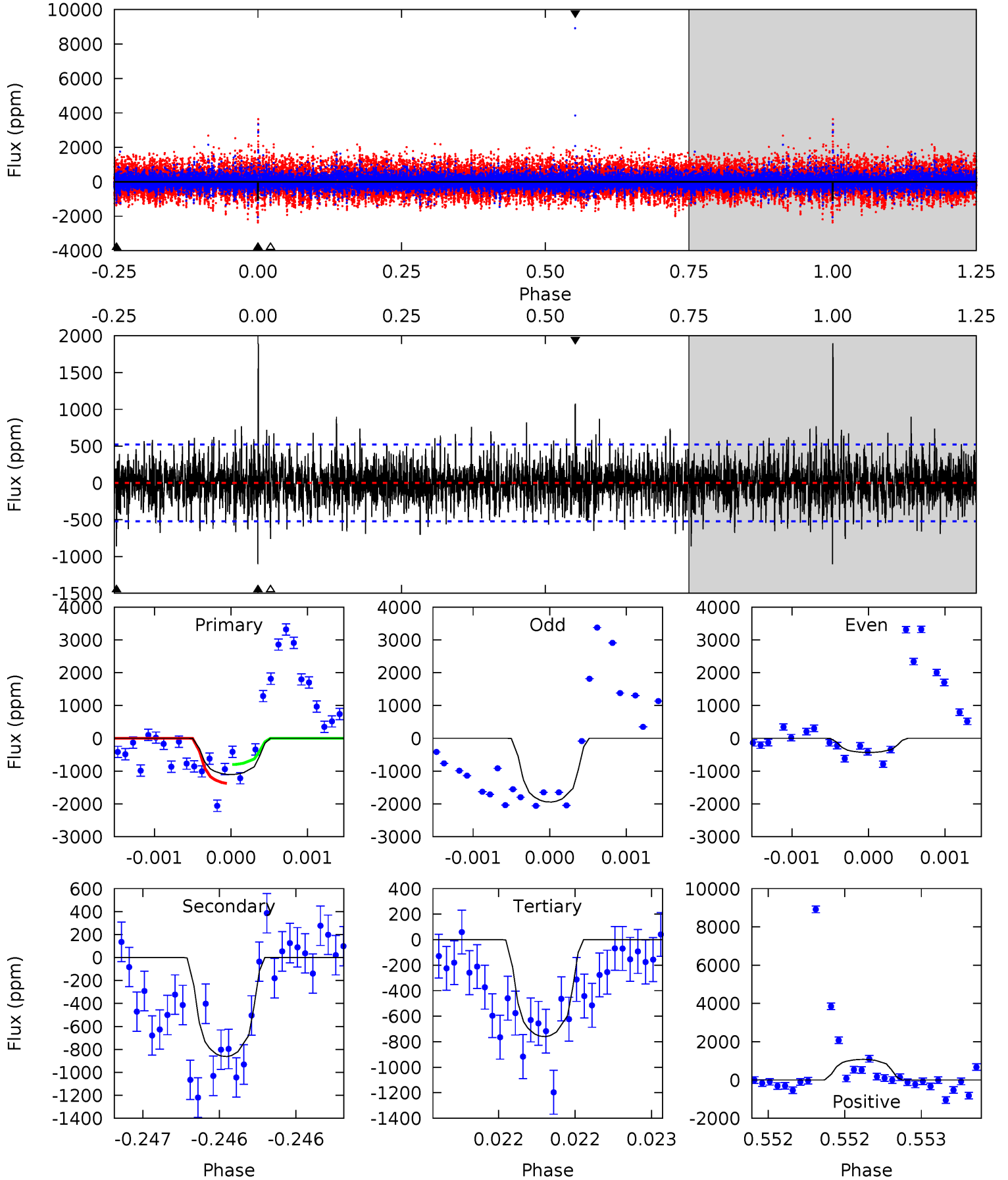
TCE 008774912-03 P=265.036496 Days $T_0=386.908882$ (BKJD)



DV Model-Shift Uniqueness Test

008774912-03, P = 265.033260 Days, E = 121.878142 Days

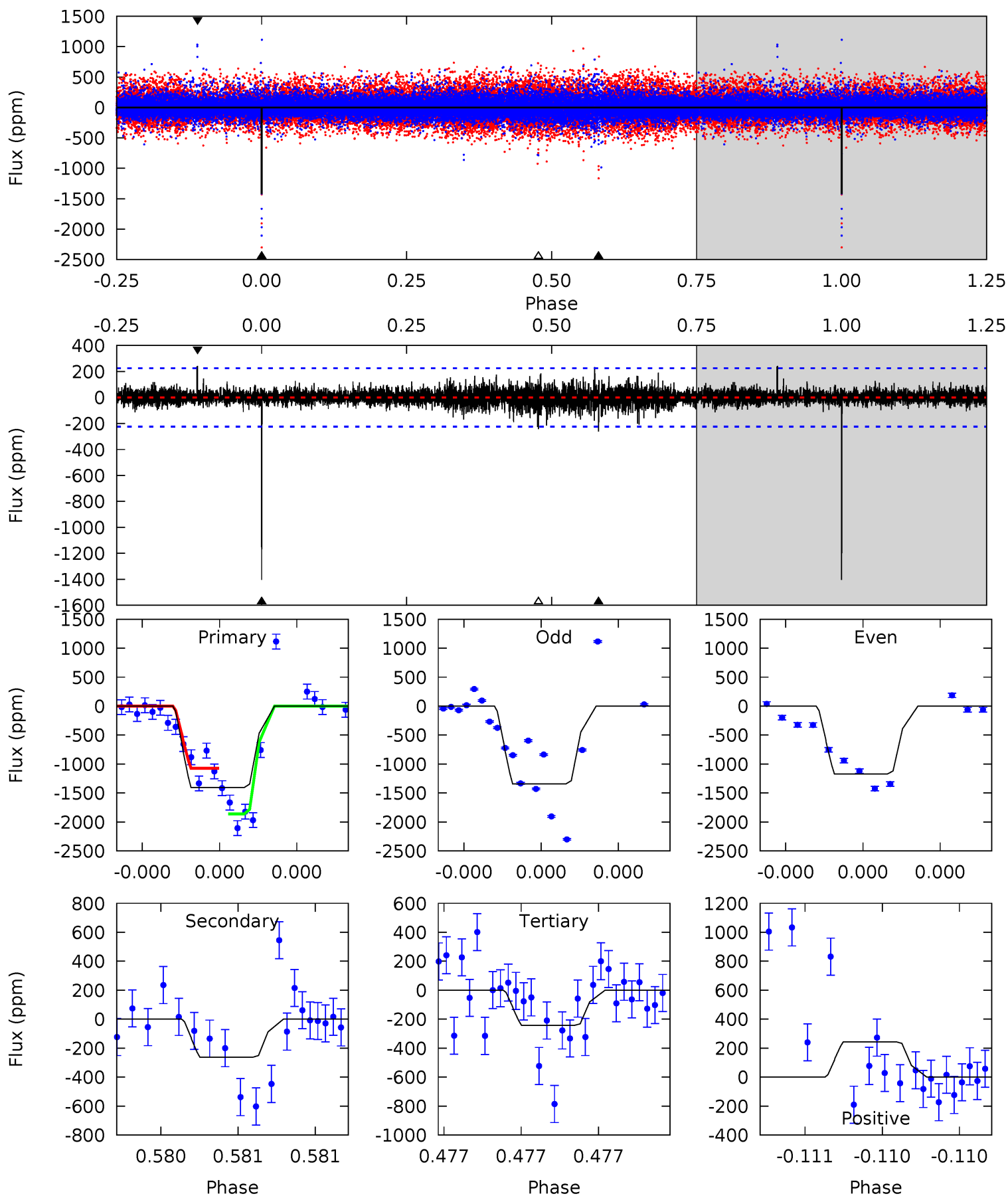
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	9.18	8.09	11.5	5.56	3.46	2.14	3.67	0.28	1.09	-2.29	6.97	1.03	0.63	3.08



Alt Model-Shift Uniqueness Test

008774912-03, P = 265.036496 Days, E = 121.872386 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.1	6.55	6.06	6.09	5.62	3.55	1.00	29.1	29.0	0.49	0.46	2.00	1.02	0.15	9.89



Stellar Parameters For KIC 008774912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4748^{+143}_{-107}	$2.792^{+0.413}_{-0.337}$	$-0.240^{+0.300}_{-0.200}$	$6.264^{+4.091}_{-2.203}$	$0.886^{+0.432}_{-0.023}$	$0.005^{+0.016}_{-0.003}$
	+3%/-2%	+15%/-12%	+125%/-83%	+65%/-35%	+49%/-3%	+319%/-67%
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 008774912-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-862 ± 94	$30.86^{+22.70}_{-17.71}$	822^{+124}_{-100}	4049^{+1545}_{-607}	349^{+1423}_{-241}
Alt.	-262 ± 40	$27.86^{+24.10}_{-16.44}$	828^{+131}_{-101}	3448^{+1292}_{-494}	116^{+601}_{-80}

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

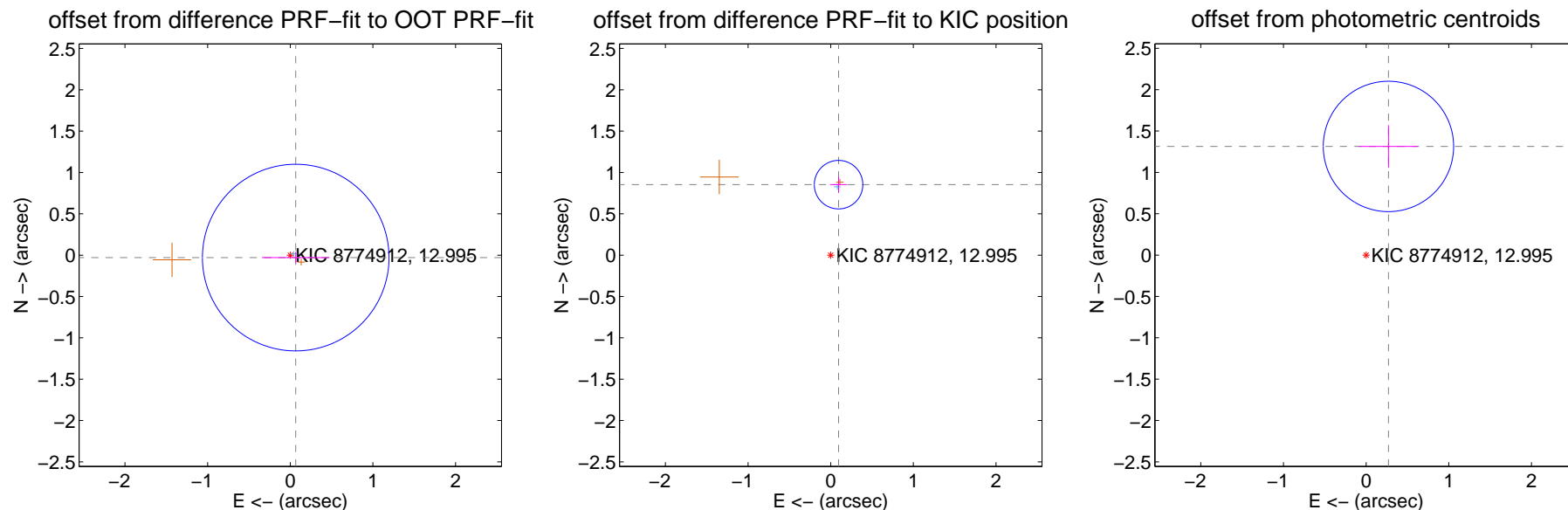
DV Centroid Data

Supplemental centroid analysis for 008774912-03. Kepler magnitude: 12.99. Transit SNR 9.92

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.97 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.072 ± 0.376	0.19	-0.066 ± 0.409	-0.029 ± 0.068
PRF-fit source offset from KIC position	0.858 ± 0.098	8.77	-0.095 ± 0.104	0.853 ± 0.098
photometric centroid source offset	1.34 ± 0.26	5.10	-0.27 ± 0.36	1.31 ± 0.26

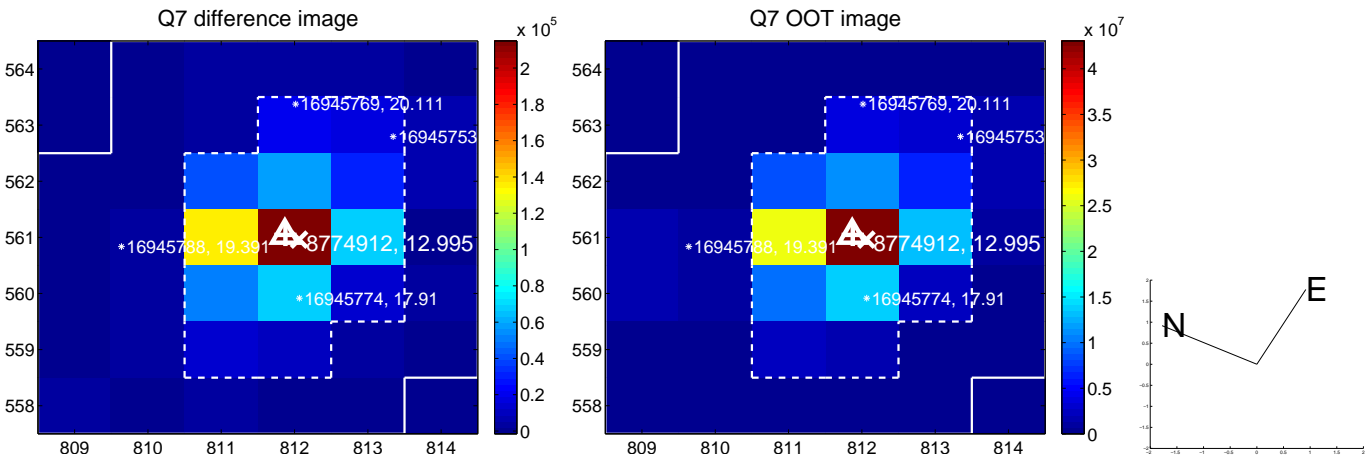


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

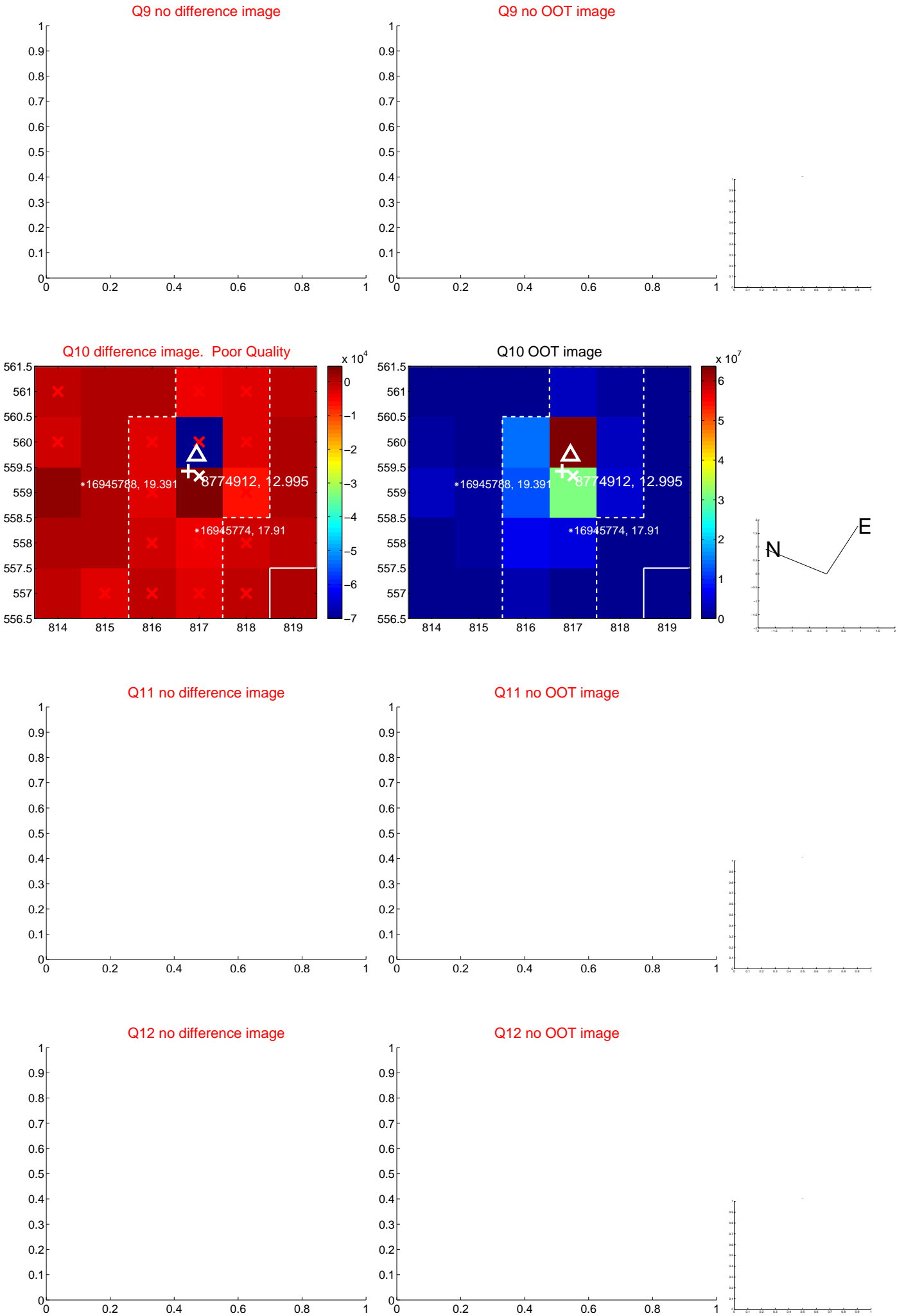
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



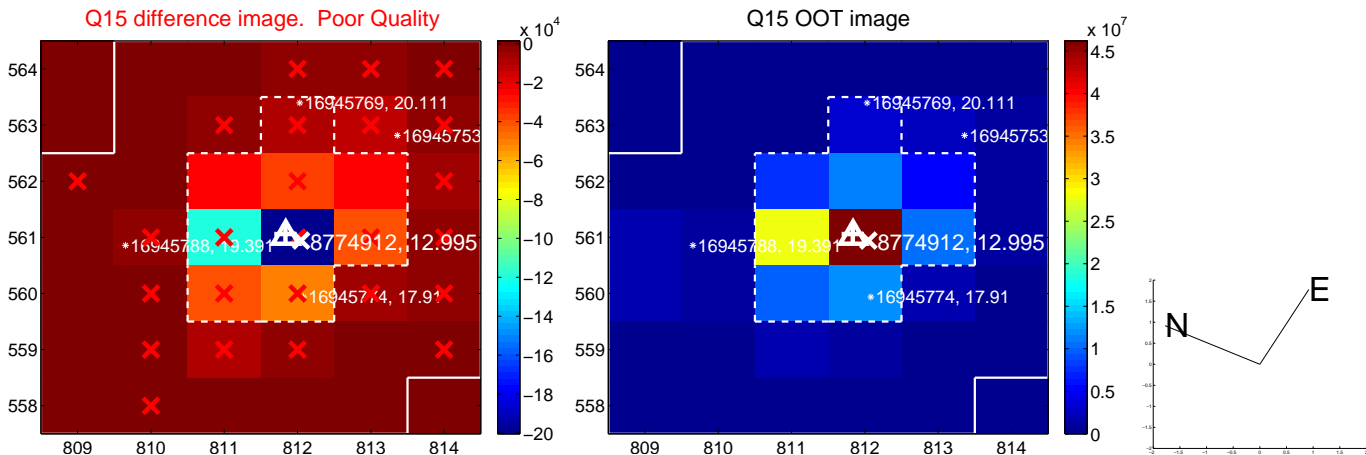
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



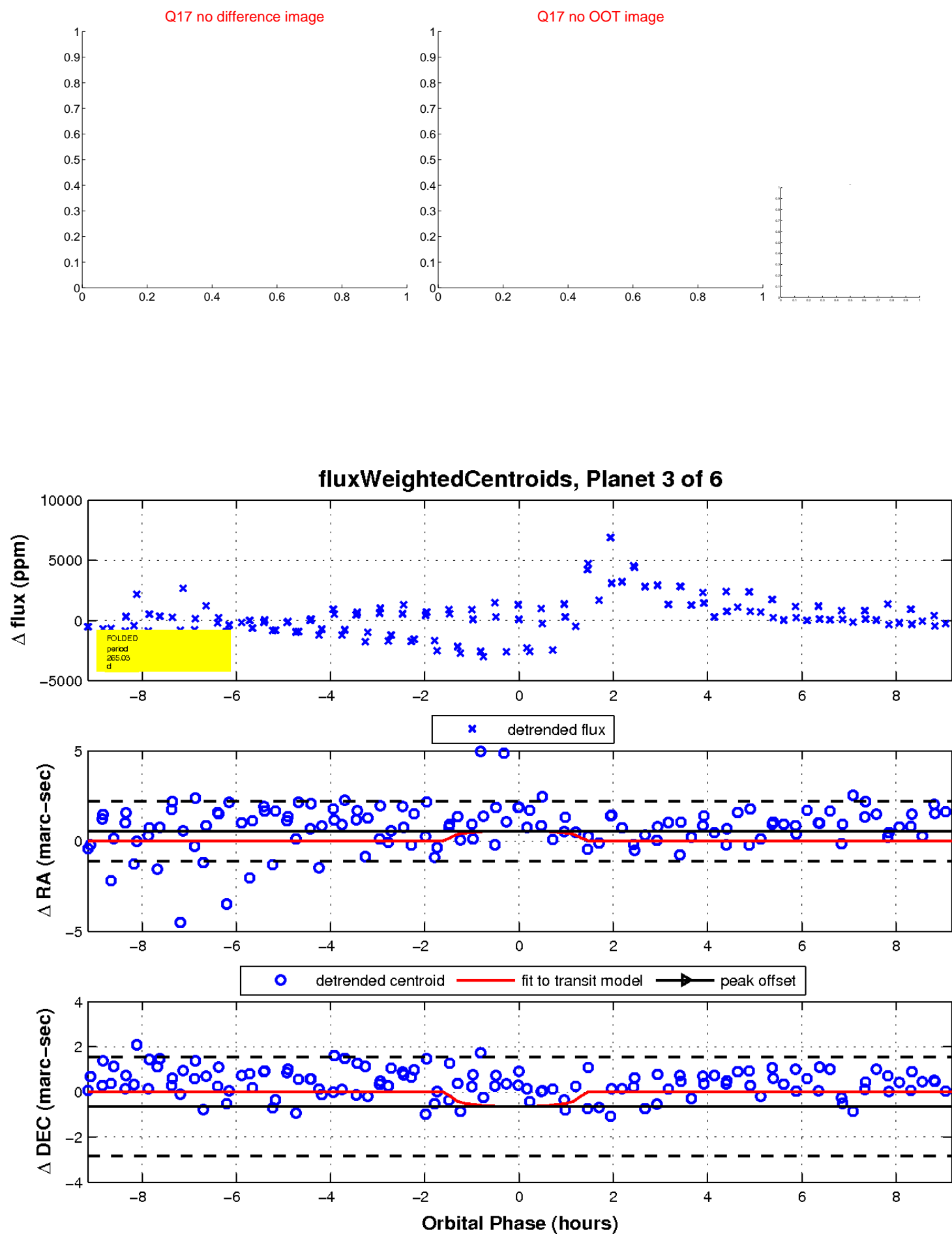
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



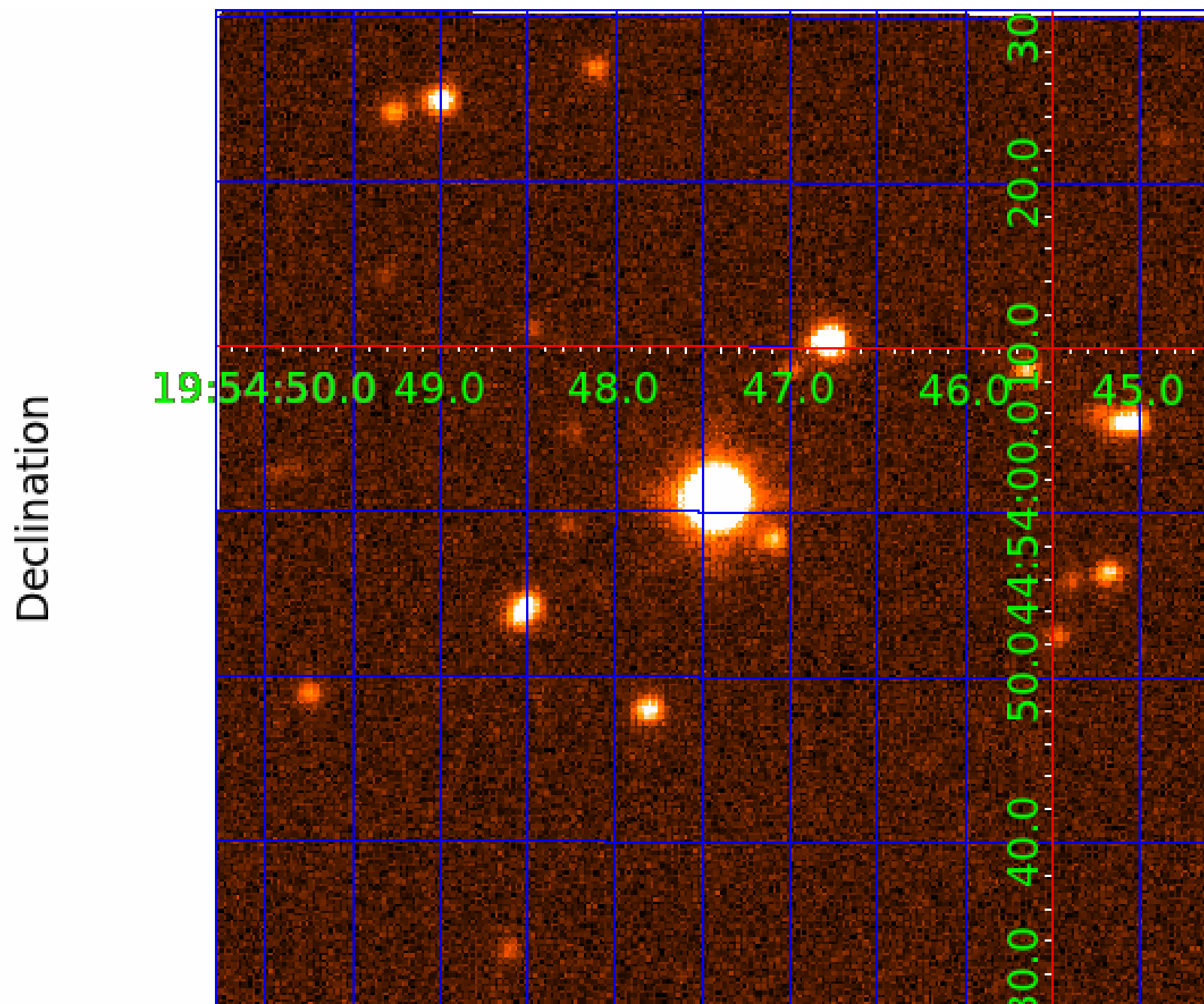
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 008774912

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})
008774912-01	OBS	No	349.990766	244.673589	699.8	4.365	29.7	3.5	6.26	4748	16.95	20.48
008774912-02	OBS	No	161.538049	247.881593	677.8	2.649	16.6	6.7	6.26	4748	18.02	57.43
008774912-03	OBS	No	265.033261	386.911402	1876.3	3.086	16.0	9.9	6.26	4748	30.02	29.68
008774912-04	OBS	No	426.394218	135.189409	1581.8	7.714	20.4	6.6	6.26	4748	25.05	15.74
008774912-05	OBS	No	592.800019	275.586499	450.2	3.189	17.1	1.9	6.26	4748	13.96	10.15
008774912-06	OBS	No	409.672444	178.814685	536.3	3.500	16.4	-1.0	6.26	4748	14.00	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008774912-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
008774912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008774912-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-06	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.

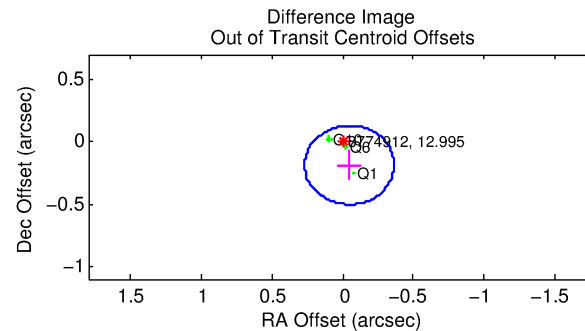
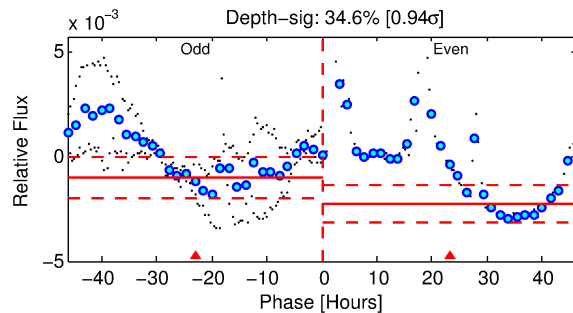
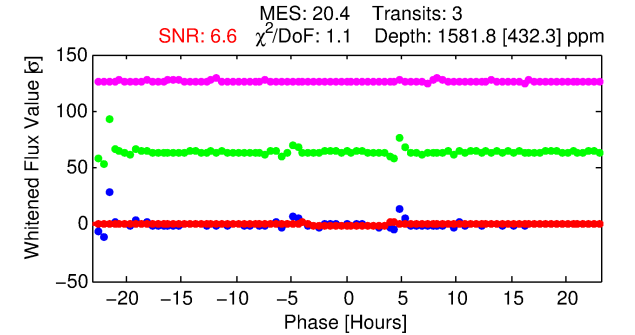
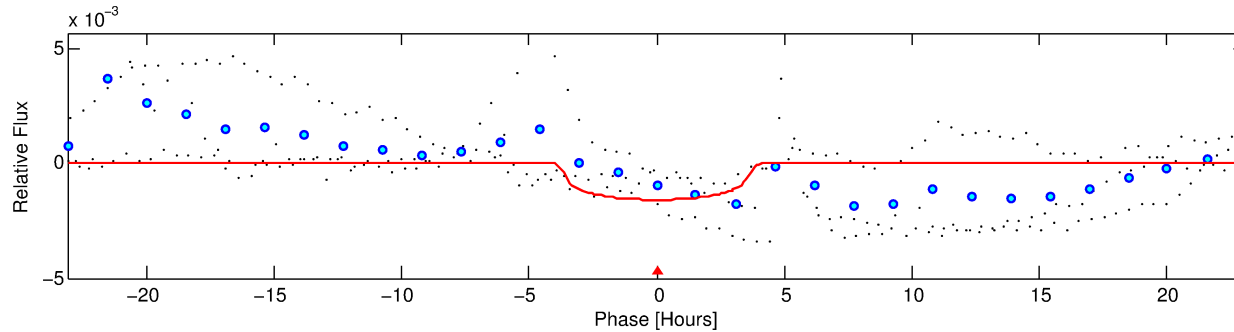
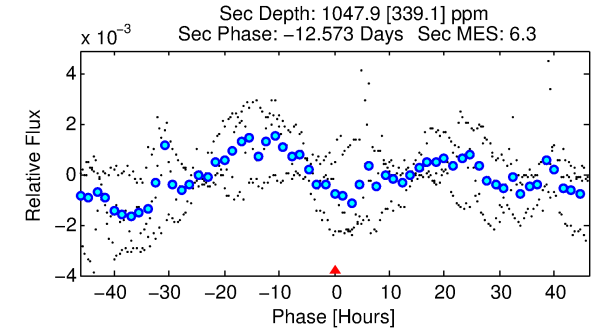
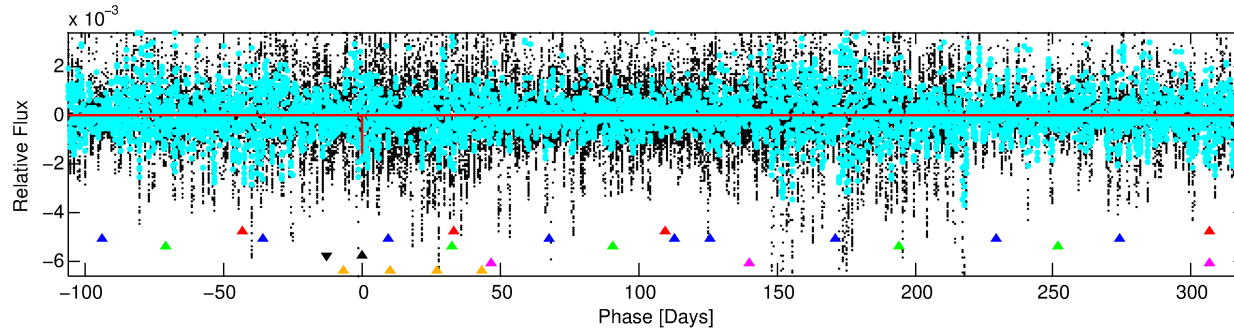
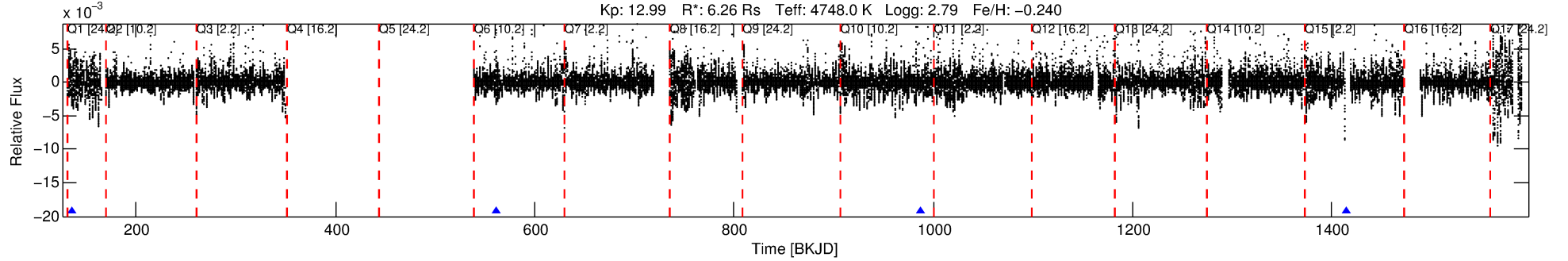
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008774912-04

No Significant Match Found

DV One-Page Summary

KIC: 8774912 Candidate: 4 of 6 Period: 426.394 d



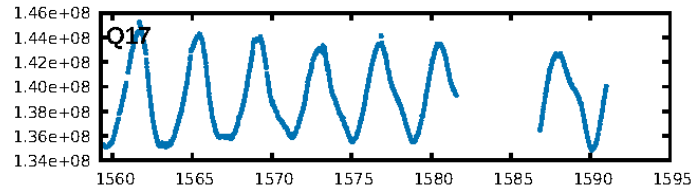
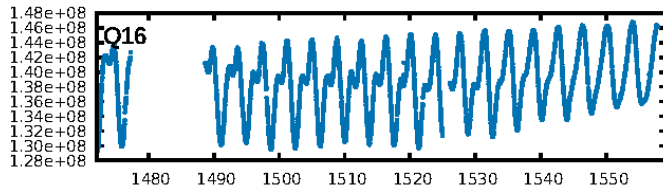
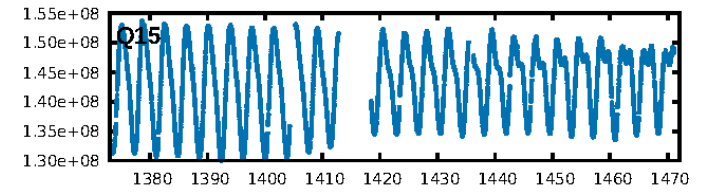
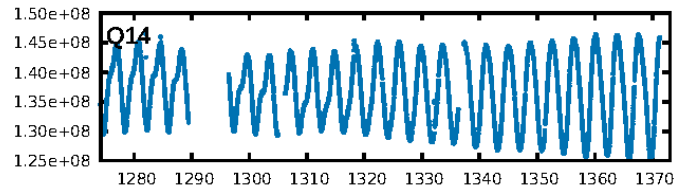
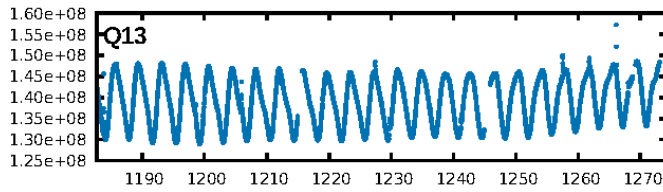
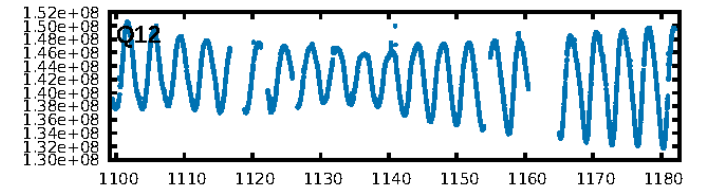
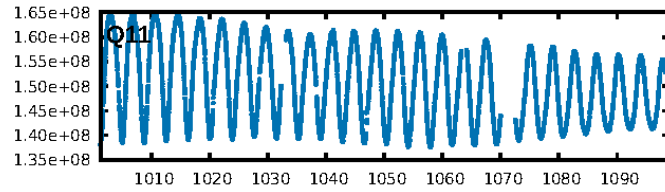
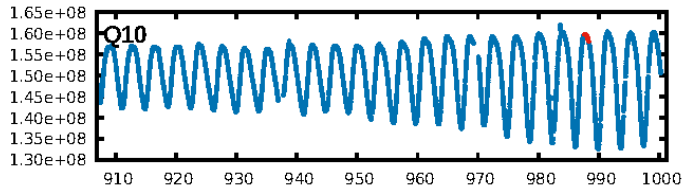
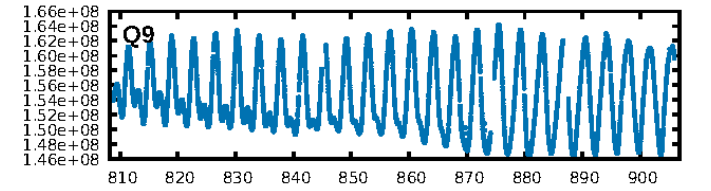
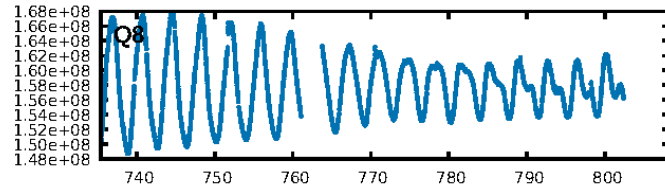
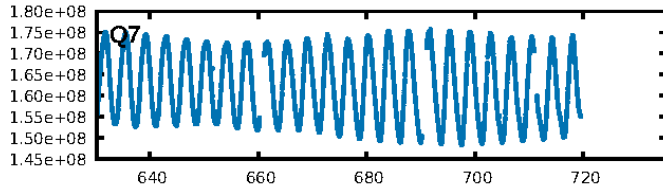
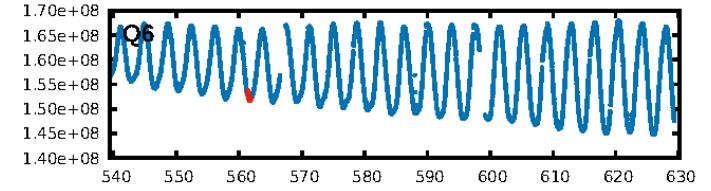
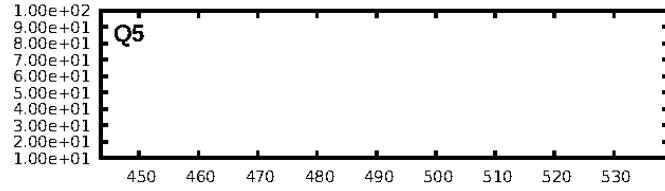
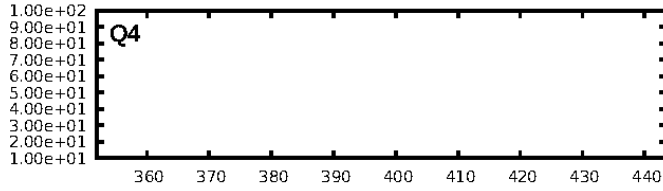
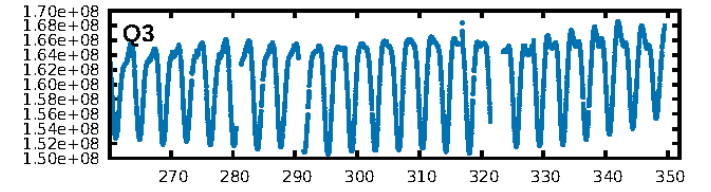
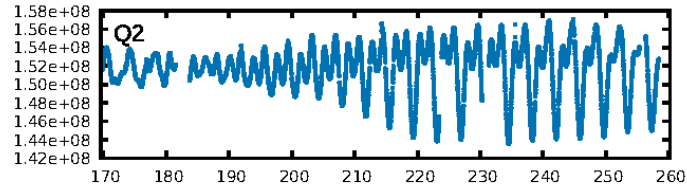
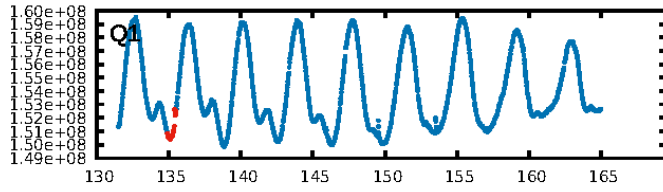
DV Fit Results:

Period = 426.39422 [0.00701] d
Epoch = 135.1894 [0.0089] BKJD
Rp/R* = 0.0366 [0.0178]
a/R* = 383.98 [544.00]
b = 0.50 [2.16]
Seff = 15.74 [12.26]
Teq = 508 [99] K
Rp = 25.05 [20.39] Re
a = 1.0653 [0.5737] AU
Ag = 1042.70 [1335.07] [0.78 σ]
Teffp = 4463 [1150] K [3.43 σ]

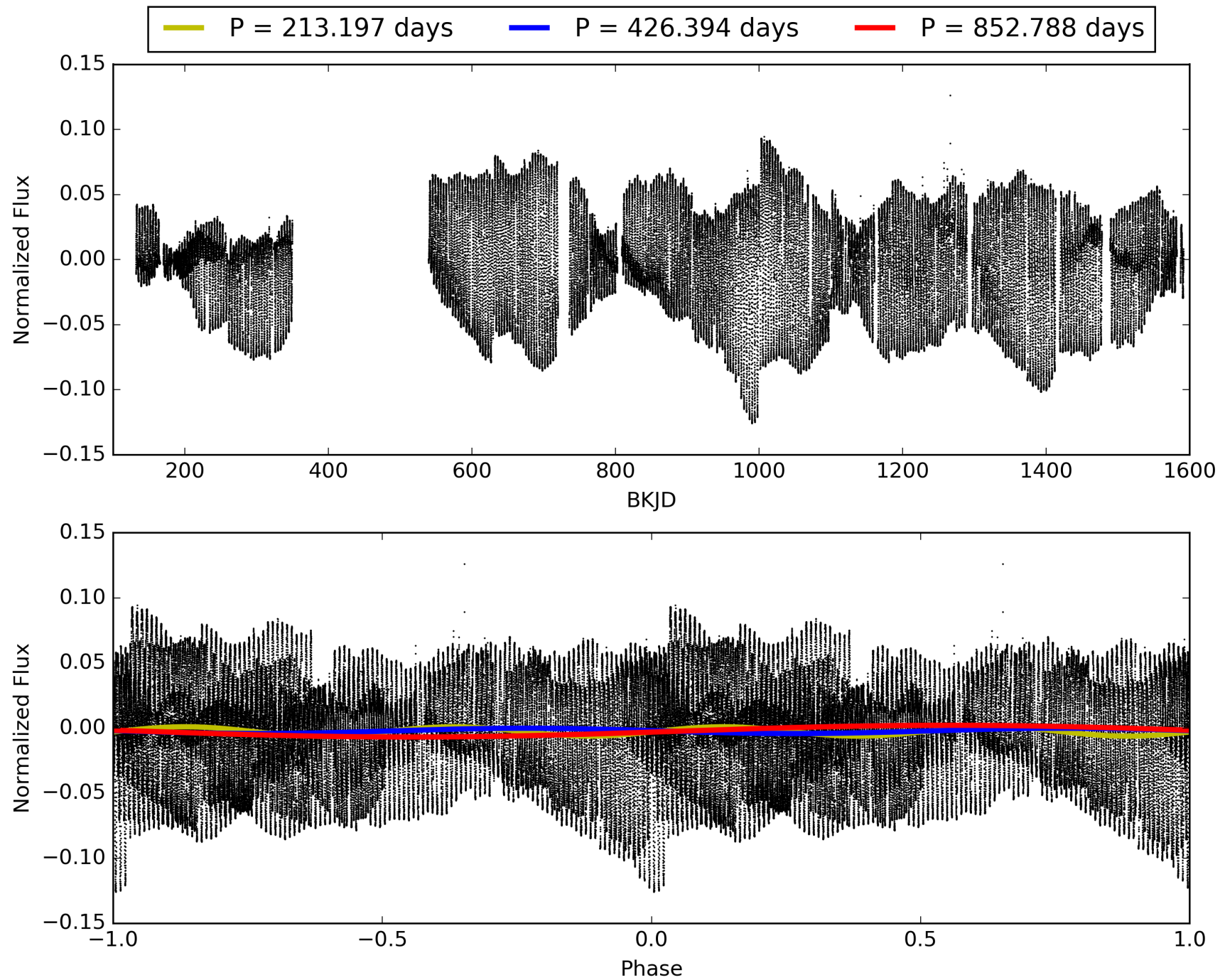
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.38 σ]
LongPeriod-sig: 100.0% [478.43 σ]
ModelChiSquare2-sig: 2.7%
ModelChiSquareGof-sig: 83.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.2733
Centroid-sig: 5.9%
Centroid-so: 1.151 arcsec [4.08 σ]
OotOffset-rm: 0.192 arcsec [1.83 σ]
KicOffset-rm: 0.617 arcsec [3.19 σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008774912-04, PDC Light Curves

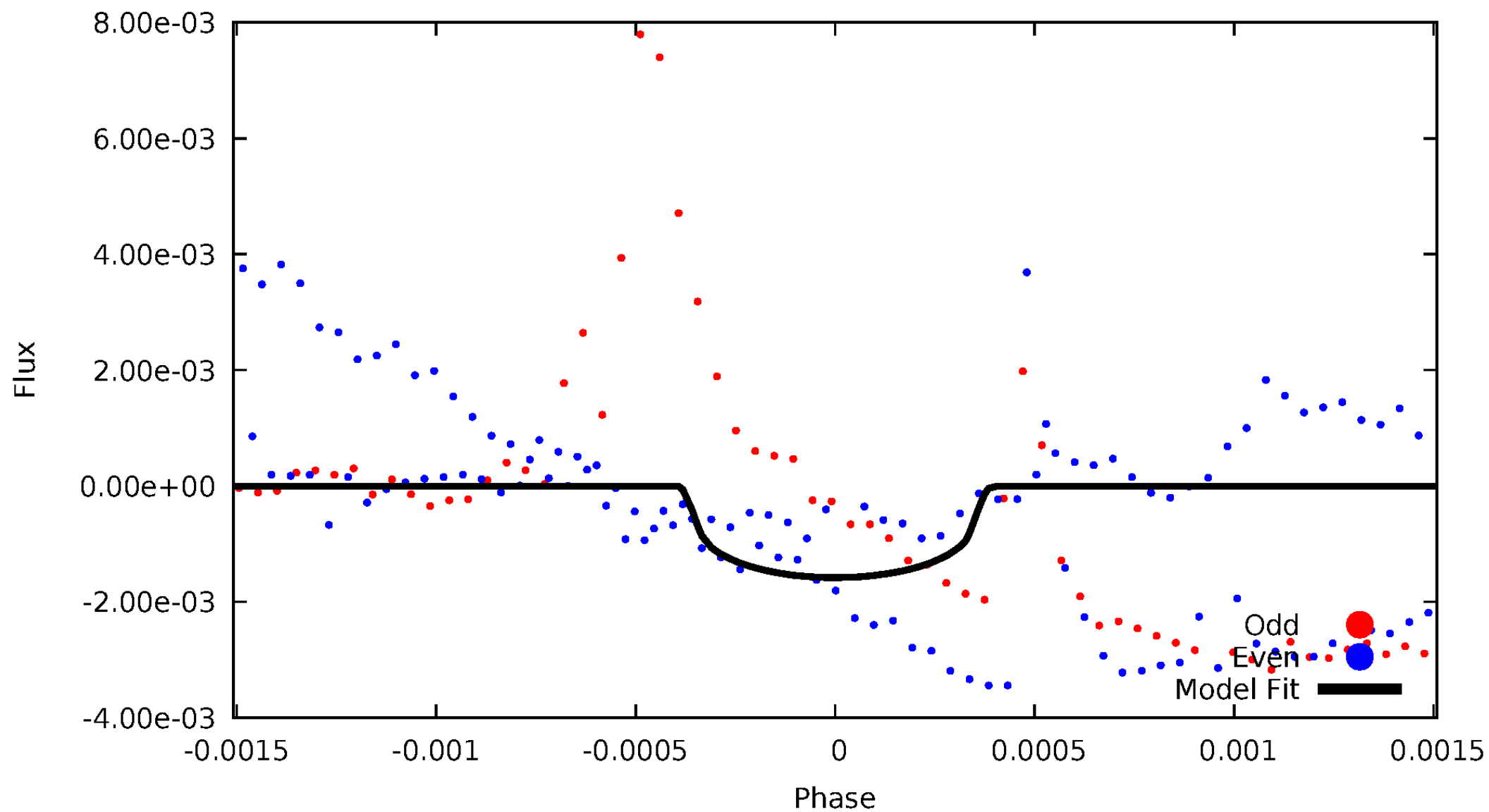


TCE 008774912-04



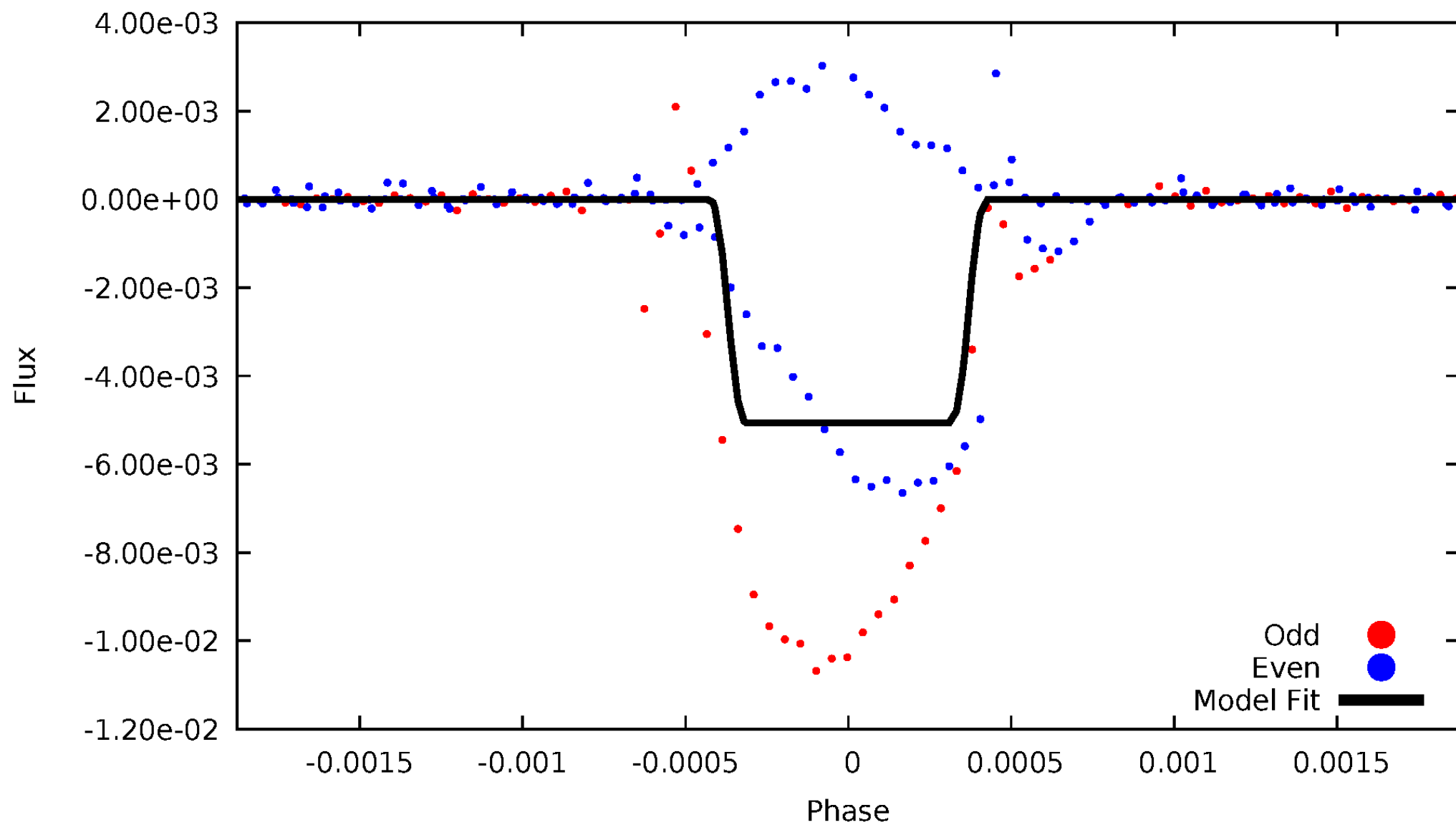
DV Odd/Even

TCE 008774912-04



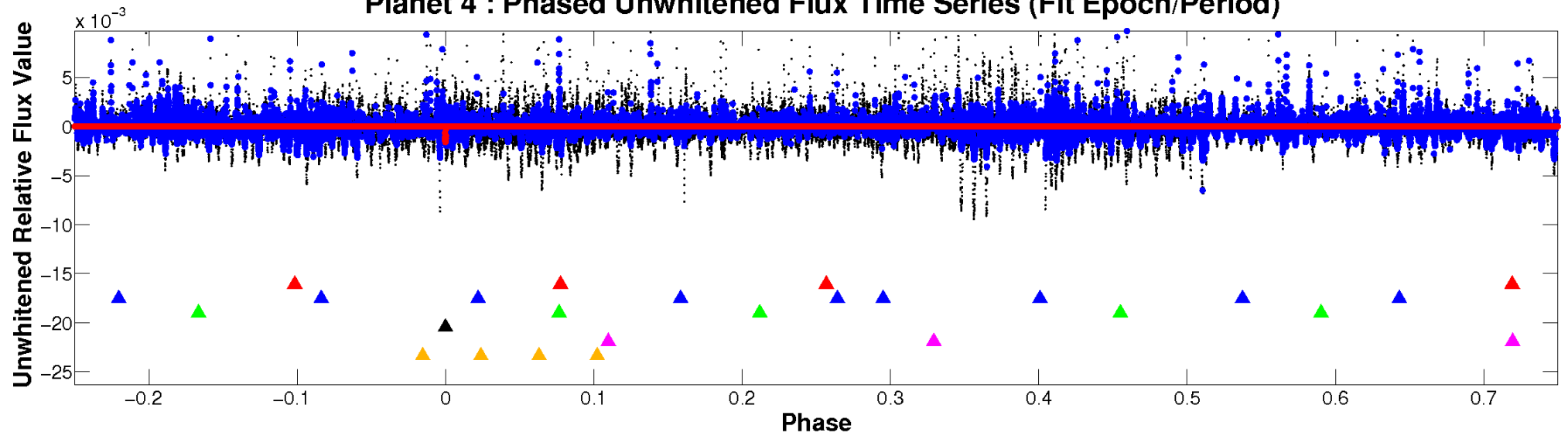
ALT Odd/Even

TCE 008774912-04

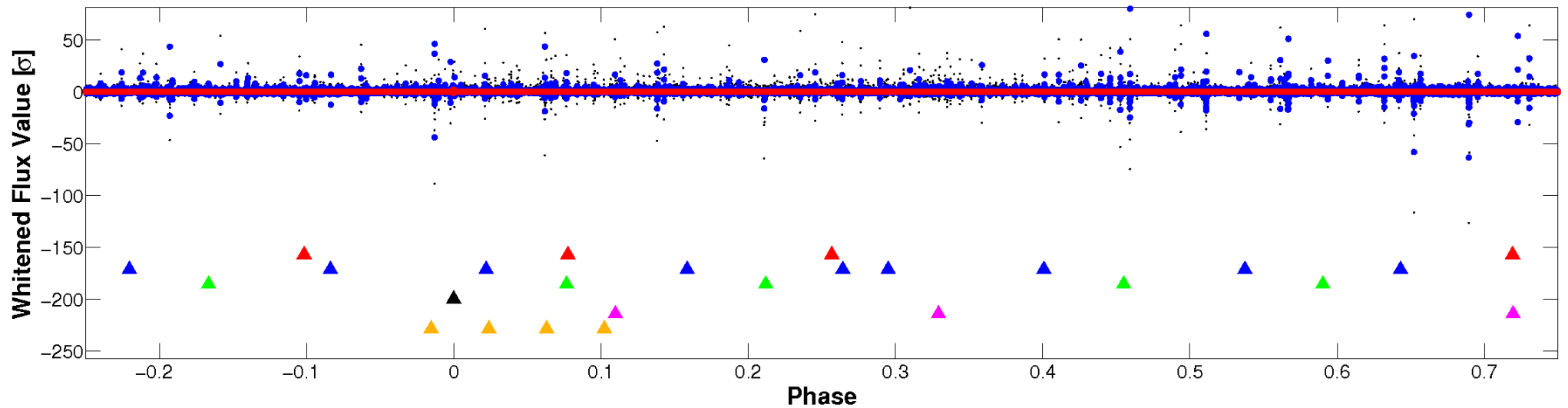


Non-Whitened Vs. Whitened Light Curve

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

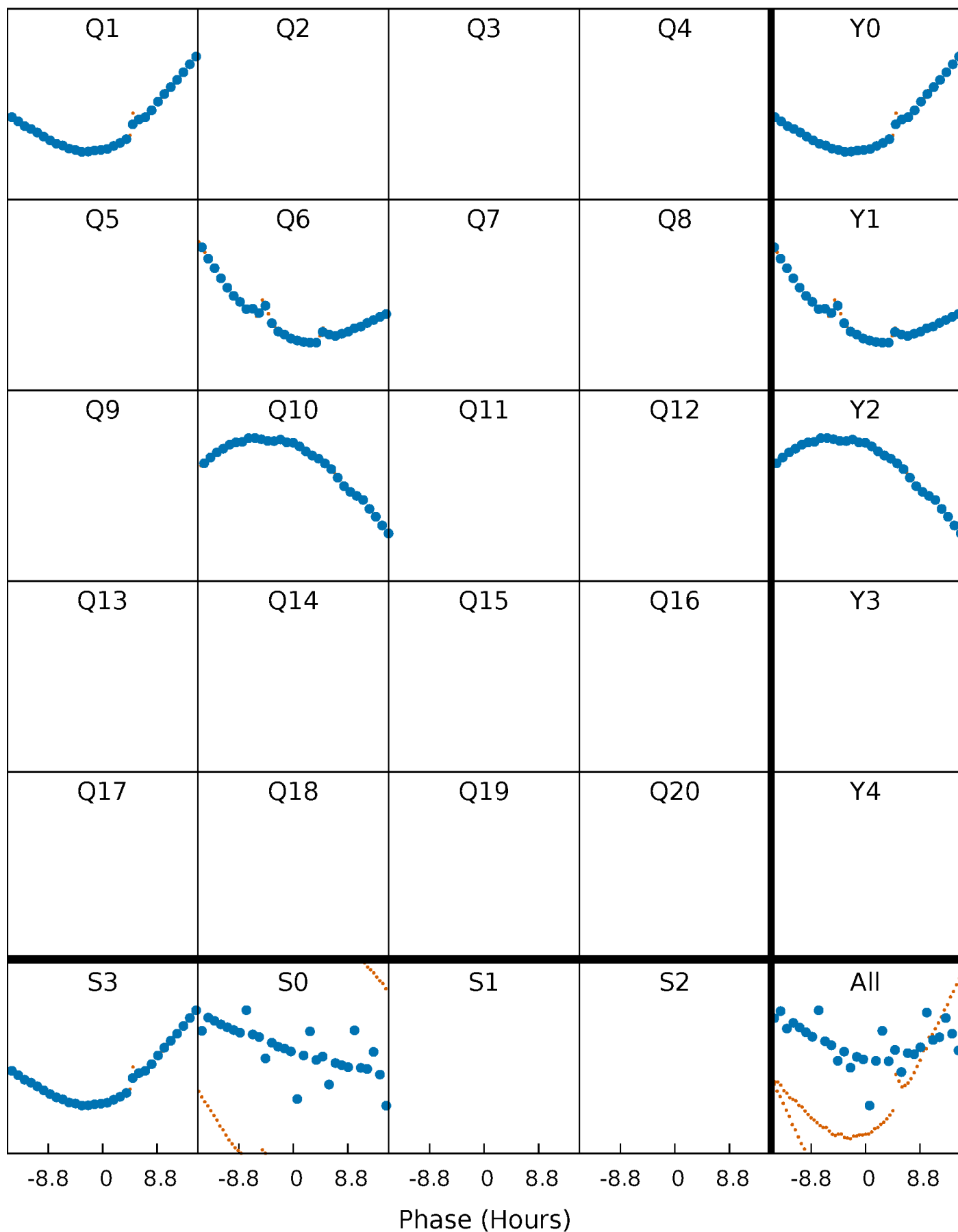


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



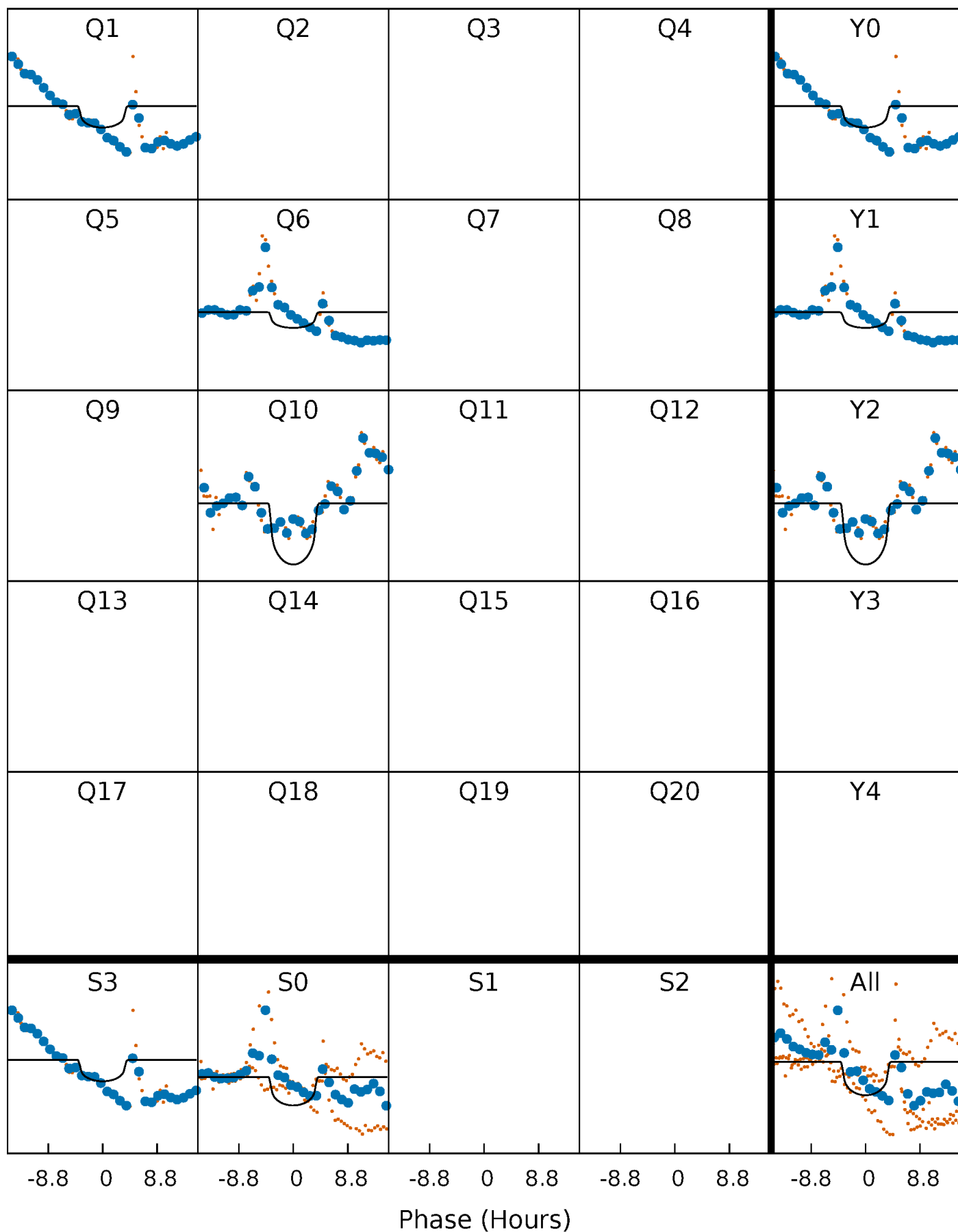
PDC Quarter-Phased Transit Curves

TCE 008774912-04 $P=426.394218$ Days $T_0=135.189409$ (BKJD)



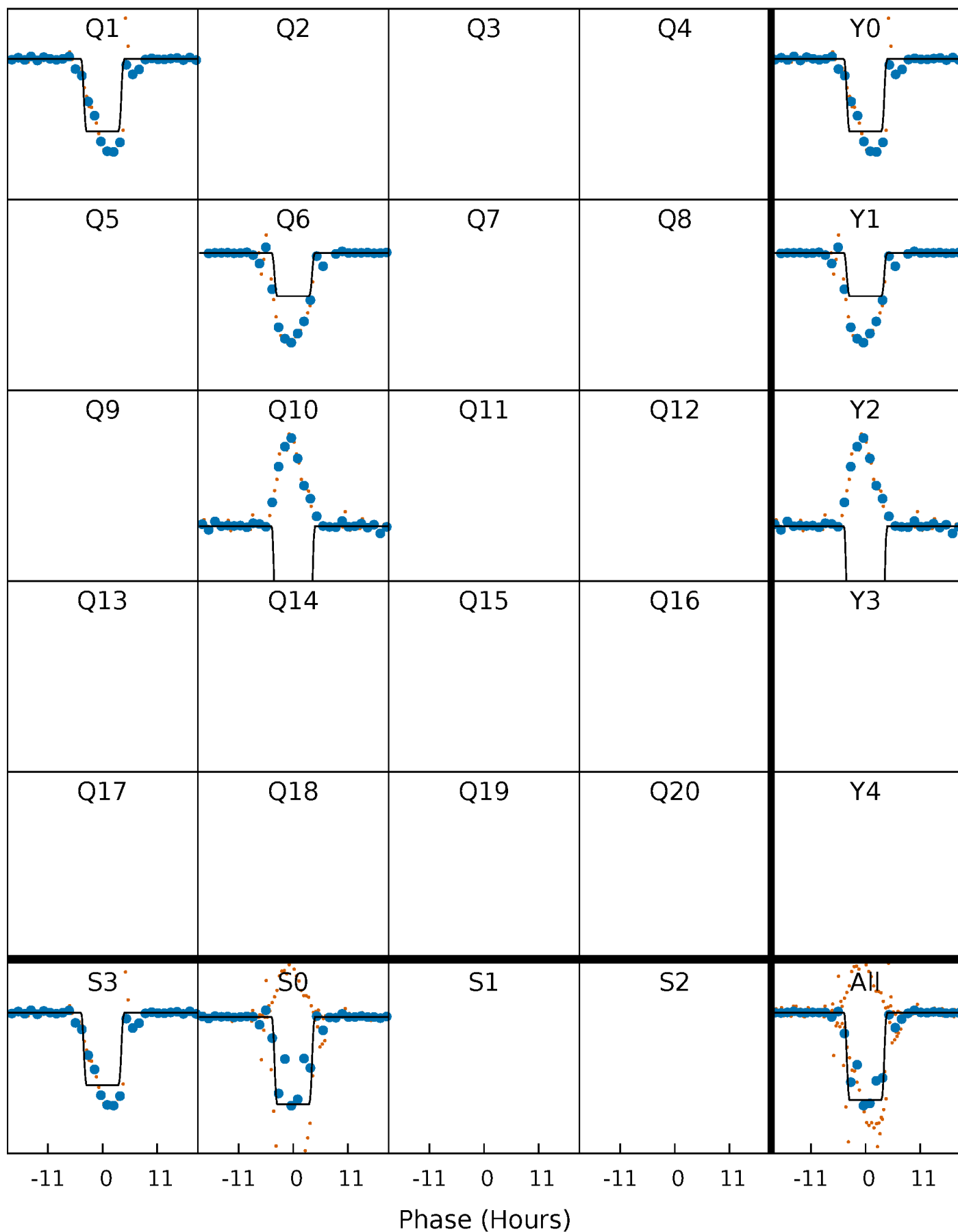
DV Quarter-Phased Transit Curves

TCE 008774912-04 $P=426.394218$ Days $T_0=135.189409$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

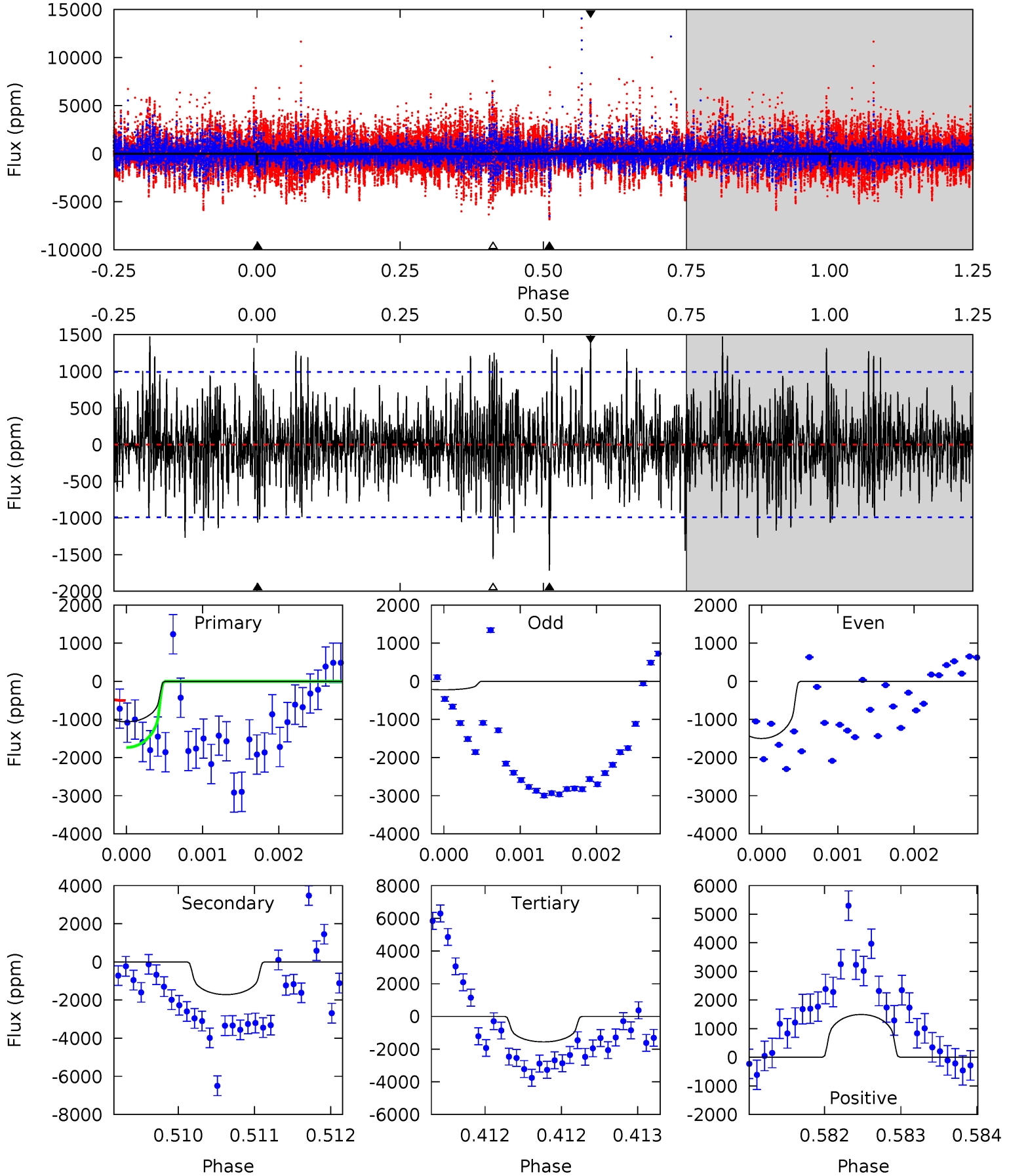
TCE 008774912-04 P=426.400719 Days $T_0=135.200983$ (BKJD)



DV Model-Shift Uniqueness Test

008774912-04, P = 426.394218 Days, E = 135.189409 Days

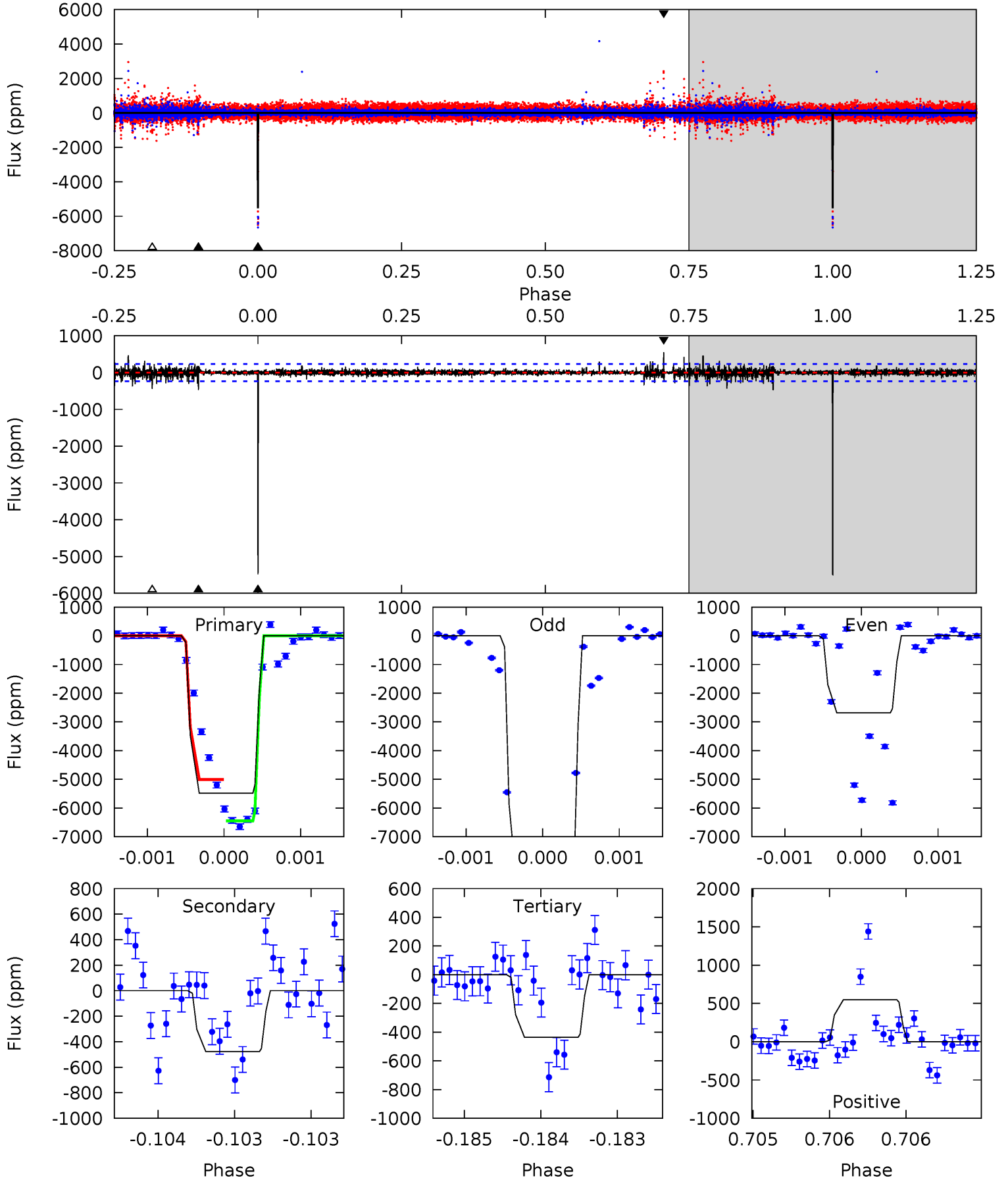
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.88	9.51	8.64	8.29	5.49	3.35	2.03	-2.76	-2.40	0.87	1.23	2.67	1.50	0.47	3.38



Alt Model-Shift Uniqueness Test

008774912-04, P = 426.400719 Days, E = 135.200983 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
128.7	11.2	10.2	12.9	5.49	3.35	1.06	118.5	115.9	0.98	-1.64	91.3	0.78	0.09	16.4



Stellar Parameters For KIC 008774912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4748^{+143}_{-107}	$2.792^{+0.413}_{-0.337}$	$-0.240^{+0.300}_{-0.200}$	$6.264^{+4.091}_{-2.203}$	$0.886^{+0.432}_{-0.023}$	$0.005^{+0.016}_{-0.003}$
	+3%/-2%	+15%/-12%	+125%/-83%	+65%/-35%	+49%/-3%	+319%/-67%
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 008774912-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1717 ± 180	$26.02^{+14.83}_{-12.81}$	706^{+108}_{-82}	4965^{+1830}_{-705}	1771^{+4884}_{-1076}
Alt.	-478 ± 43	$49.62^{+20.35}_{-17.67}$	703^{+111}_{-83}	3179^{+335}_{-219}	133^{+182}_{-67}

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 $A_{obs} \gg 1.0$

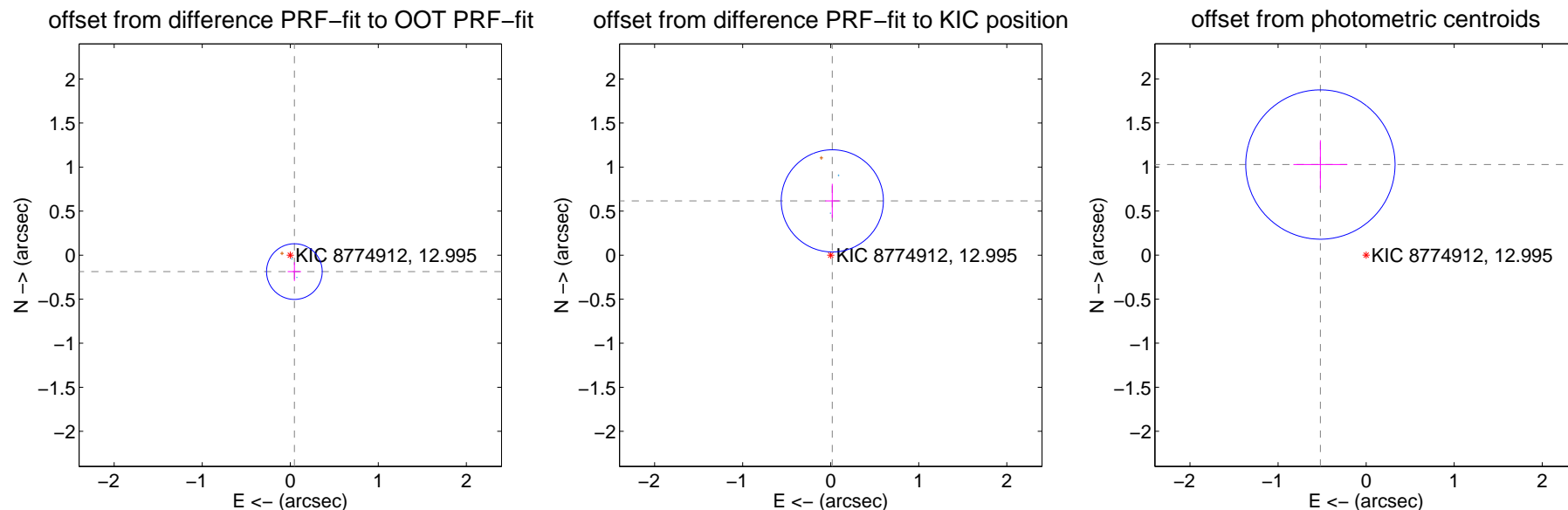
DV Centroid Data

Supplemental centroid analysis for 008774912-04. Kepler magnitude: 12.99. Transit SNR 6.61

There are 2 quarters with good PRF difference image offsets

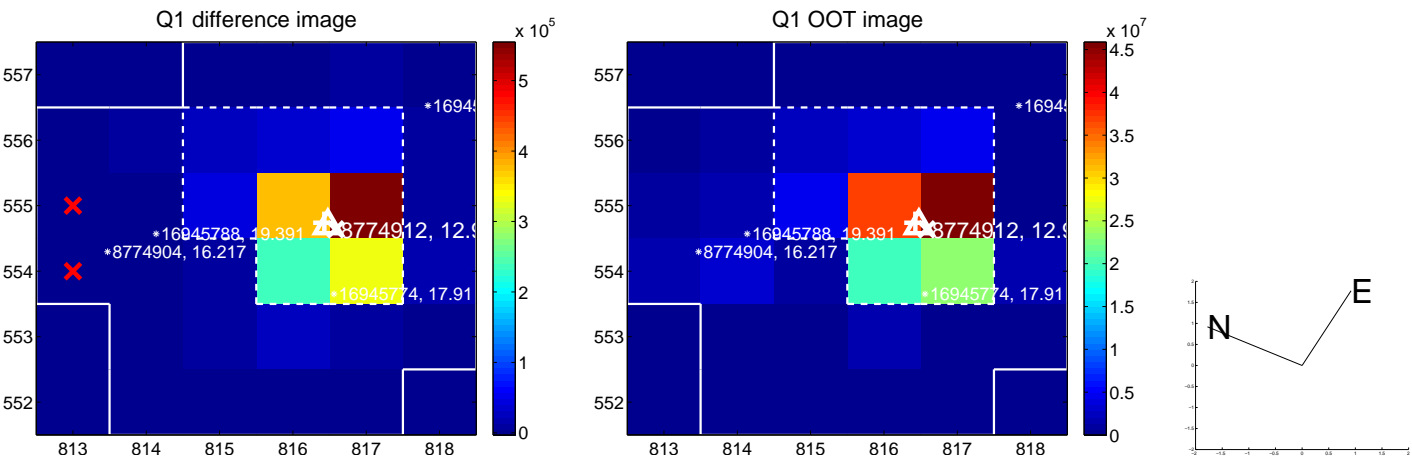
The direct PRF centroid is offset from the target star catalog position by about 1.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.192 ± 0.105	1.83	-0.047 ± 0.075	-0.187 ± 0.107
PRF-fit source offset from KIC position	0.617 ± 0.193	3.19	-0.018 ± 0.080	0.616 ± 0.193
photometric centroid source offset	1.15 ± 0.28	4.08	0.52 ± 0.31	1.03 ± 0.28



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.

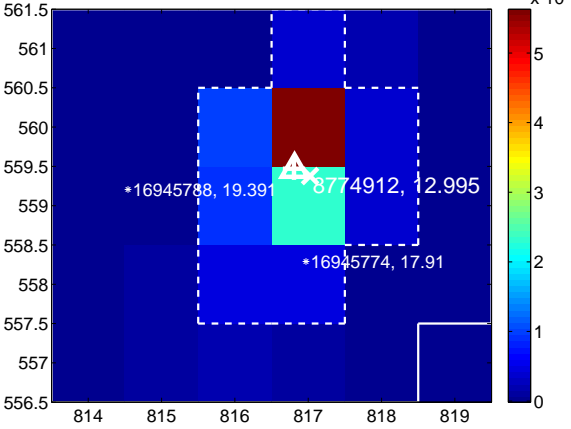
Q5 no difference image



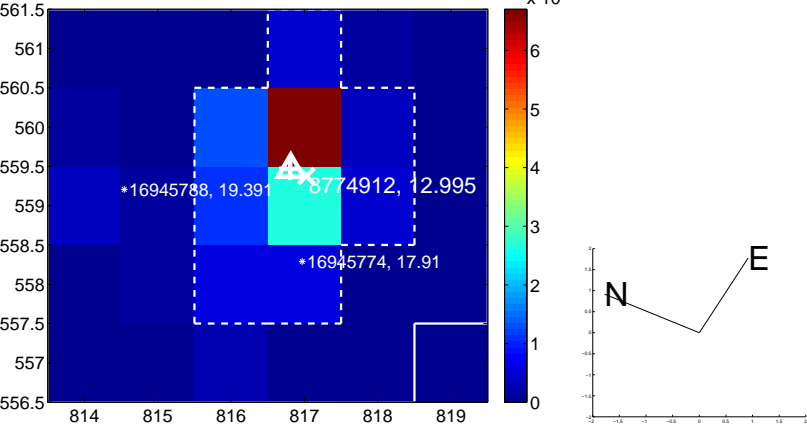
Q5 no OOT image



Q6 difference image



Q6 OOT image



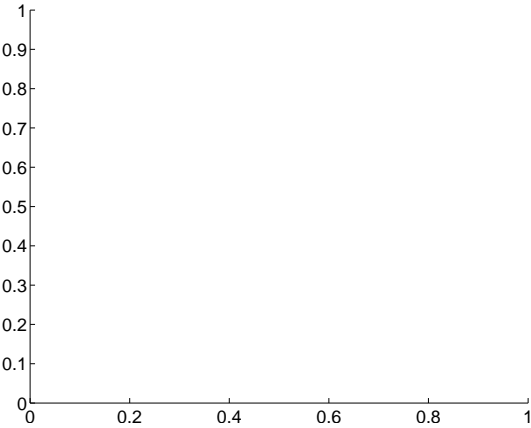
Q7 no difference image



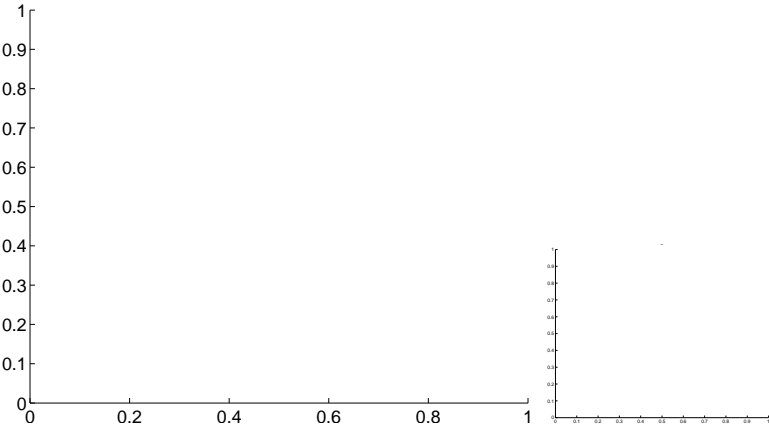
Q7 no OOT image



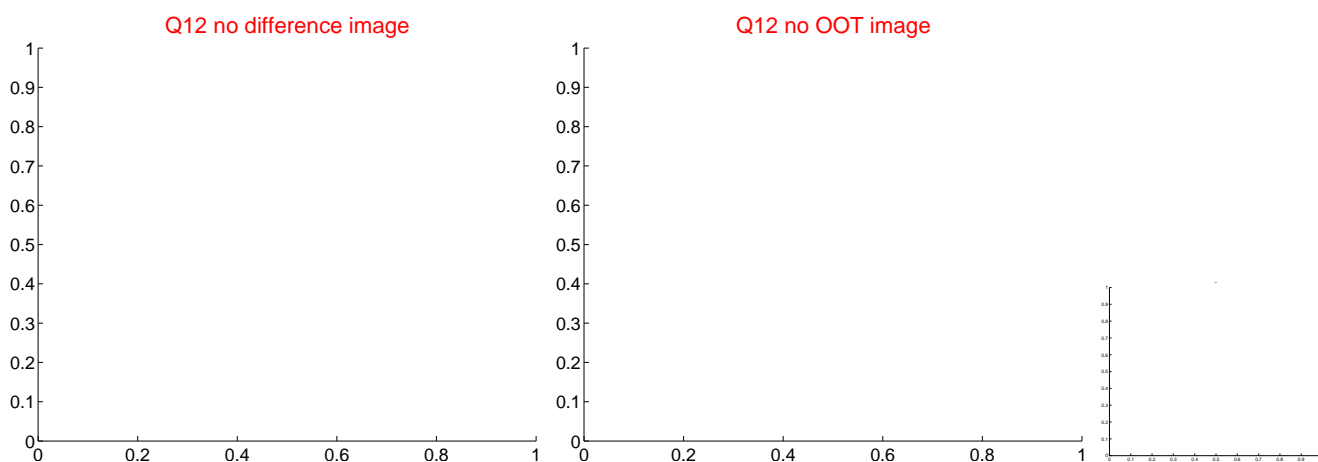
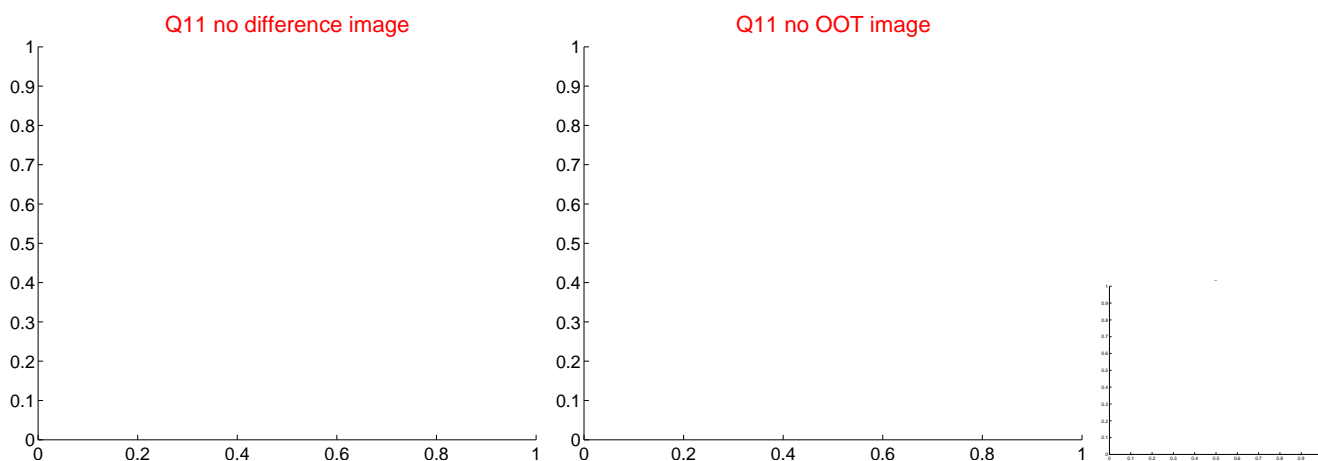
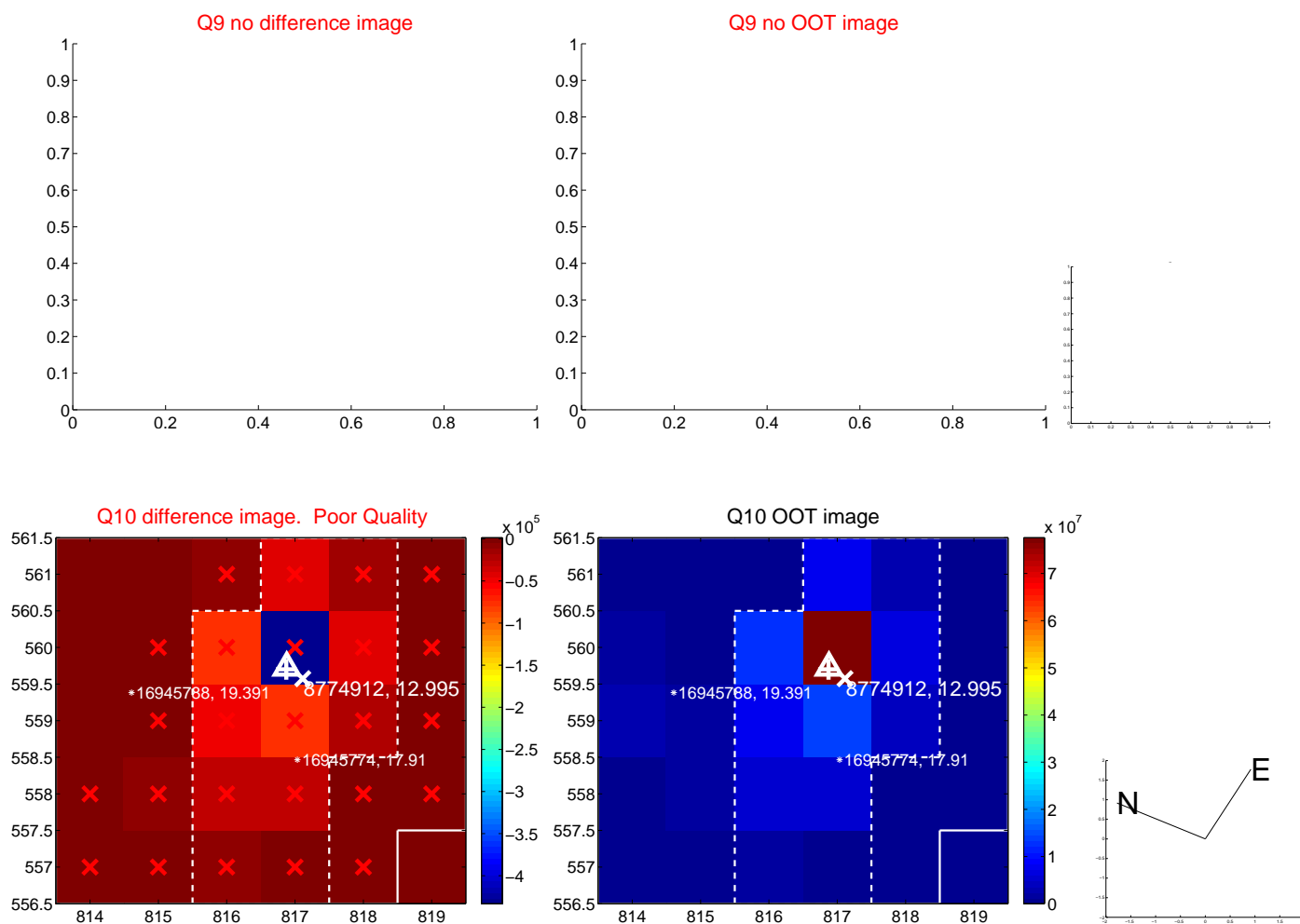
Q8 no difference image



Q8 no OOT image



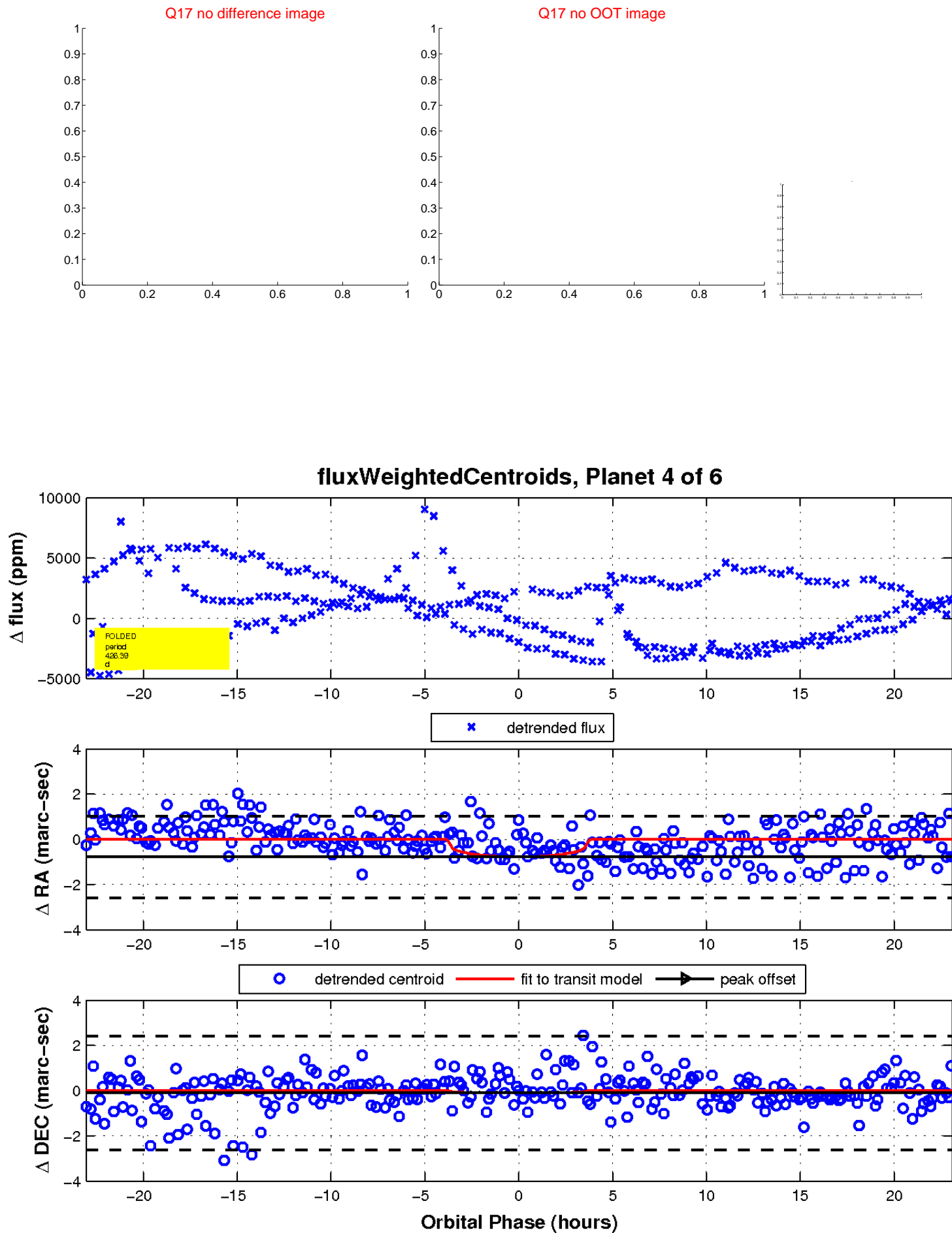
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



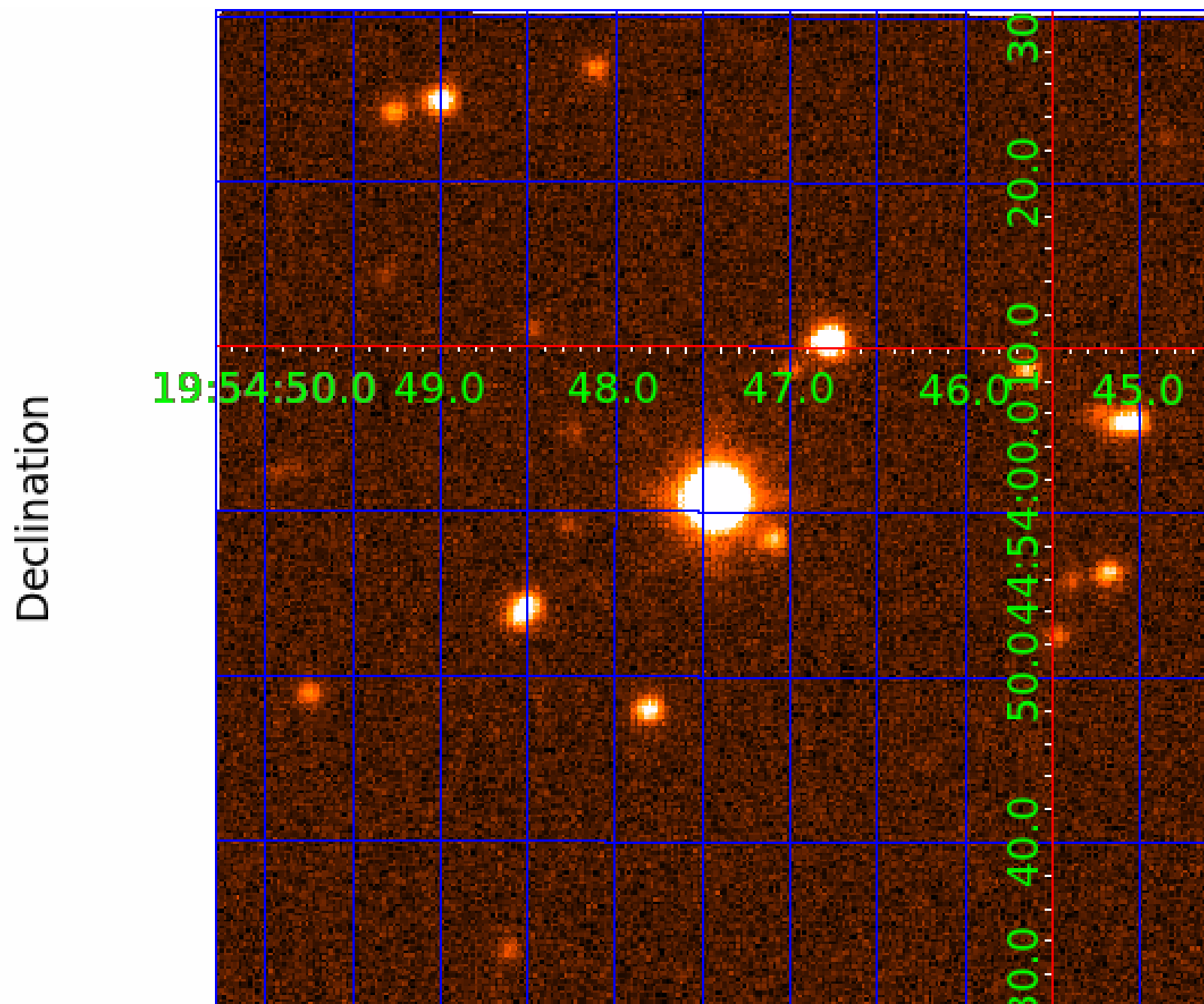
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008774912

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})
008774912-01	OBS	No	349.990766	244.673589	699.8	4.365	29.7	3.5	6.26	4748	16.95	20.48
008774912-02	OBS	No	161.538049	247.881593	677.8	2.649	16.6	6.7	6.26	4748	18.02	57.43
008774912-03	OBS	No	265.033261	386.911402	1876.3	3.086	16.0	9.9	6.26	4748	30.02	29.68
008774912-04	OBS	No	426.394218	135.189409	1581.8	7.714	20.4	6.6	6.26	4748	25.05	15.74
008774912-05	OBS	No	592.800019	275.586499	450.2	3.189	17.1	1.9	6.26	4748	13.96	10.15
008774912-06	OBS	No	409.672444	178.814685	536.3	3.500	16.4	-1.0	6.26	4748	14.00	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008774912-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
008774912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008774912-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-06	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.

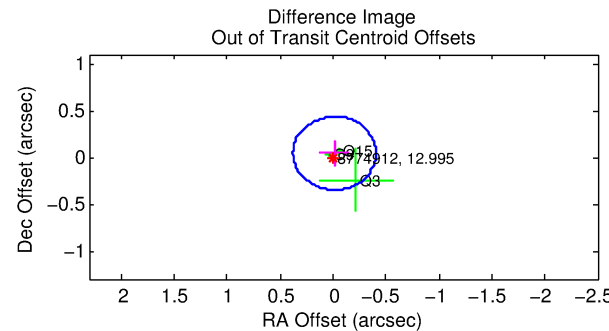
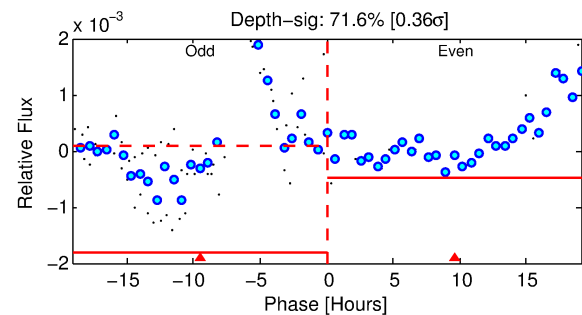
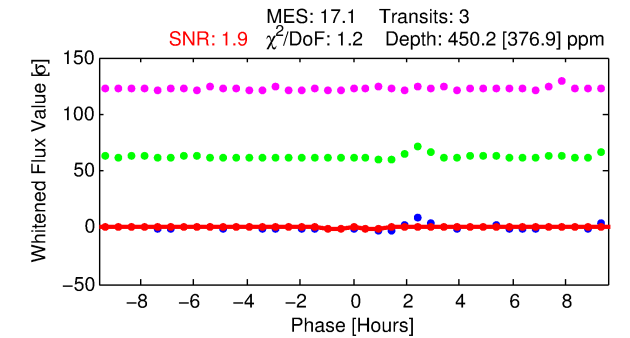
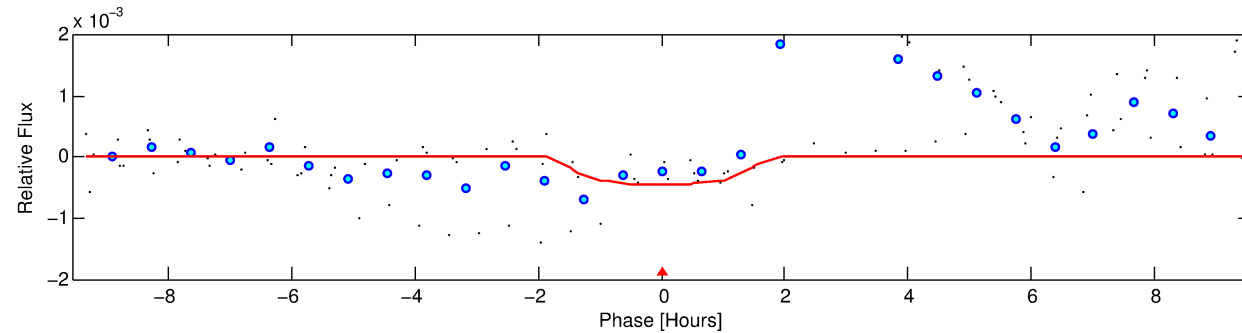
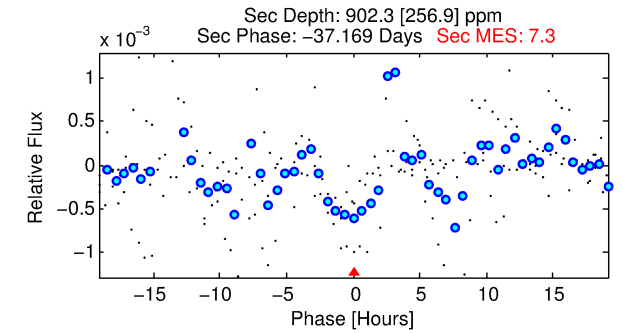
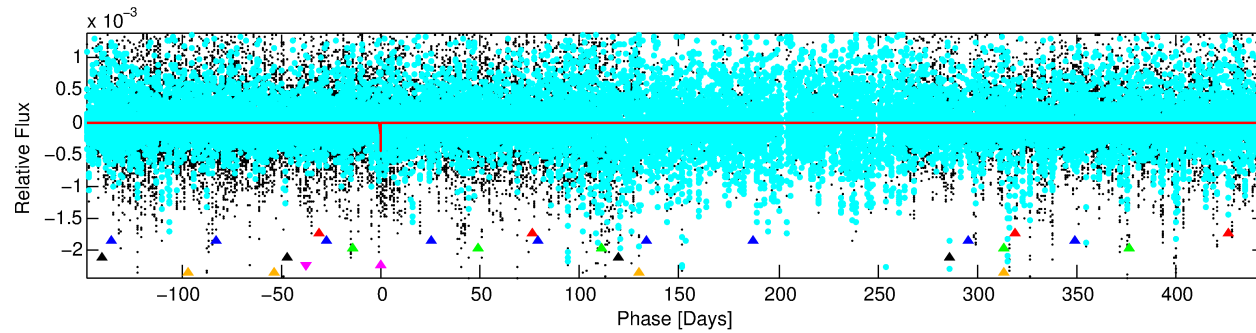
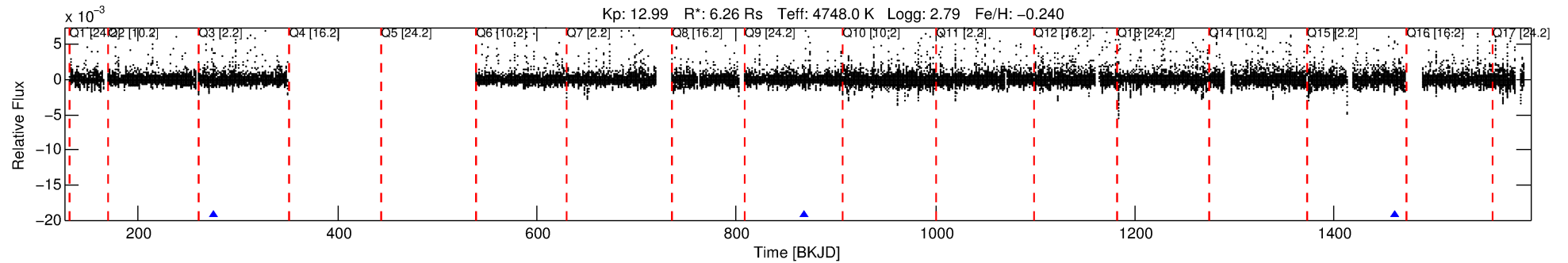
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008774912-05

No Significant Match Found

DV One-Page Summary

KIC: 8774912 Candidate: 5 of 6 Period: 592.800 d



DV Fit Results:

Period = 592.80002 [0.01476] d
Epoch = 275.5865 [0.0202] BKJD
Rp/R* = 0.0204 [0.1210]
a/R* = 1106.27 [21994.32]
b = 0.66 [17.50]
Seff = 10.15 [7.90]
Teq = 455 [89] K
Rp = 13.96 [83.19] Re
a = 1.3270 [0.7147] AU
Ag = 4482.50 [53210.96] [0.08σ]
Teffp = 5757 [17051] K [0.31σ]

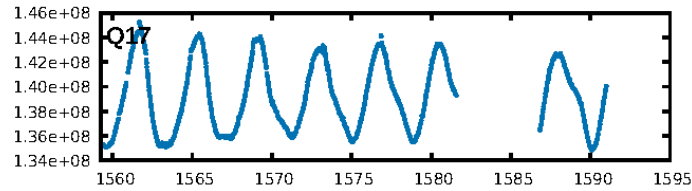
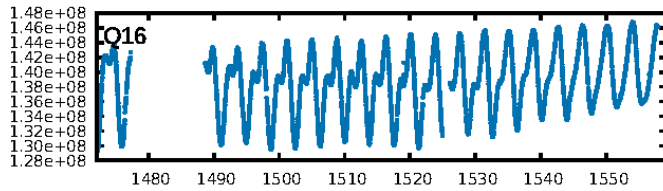
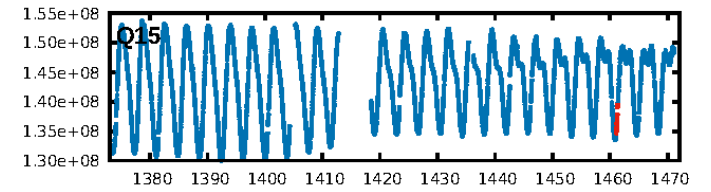
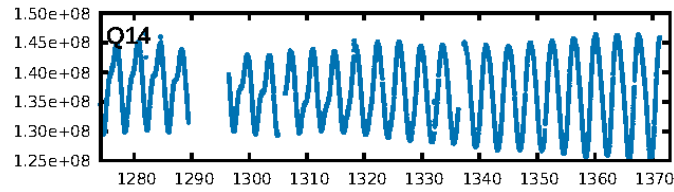
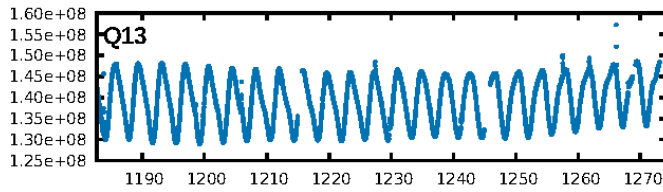
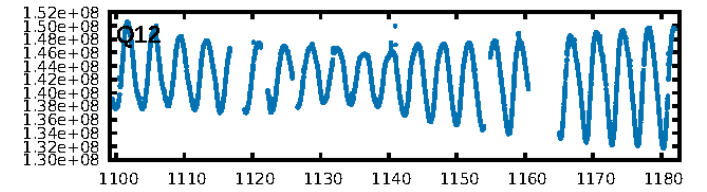
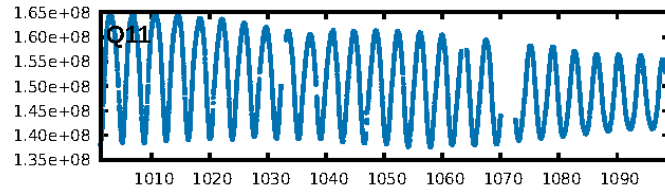
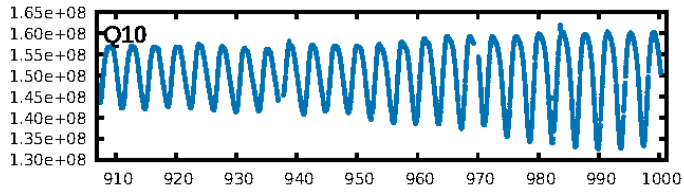
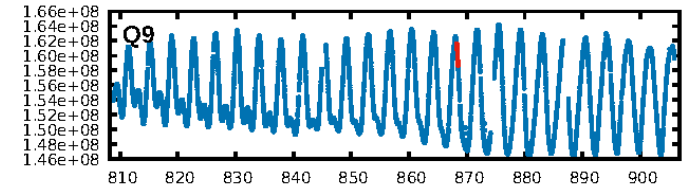
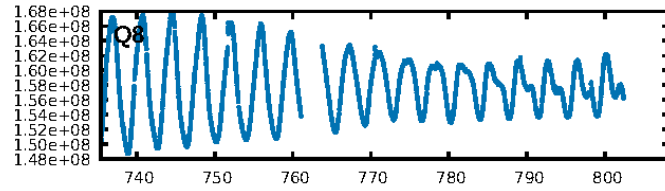
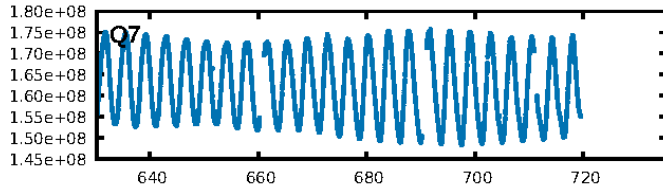
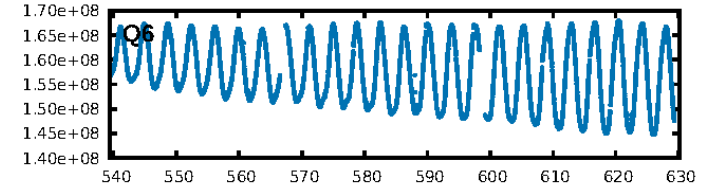
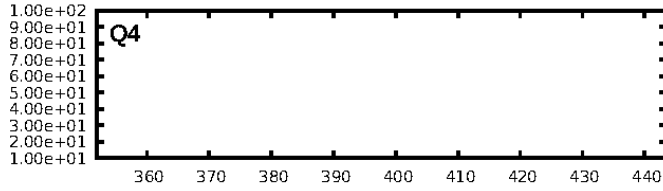
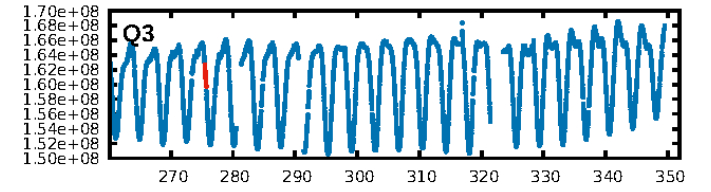
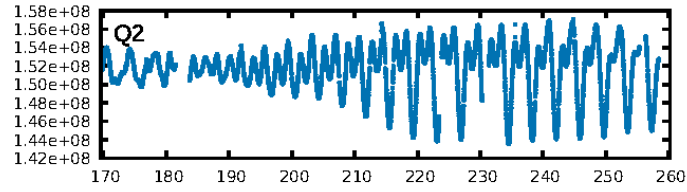
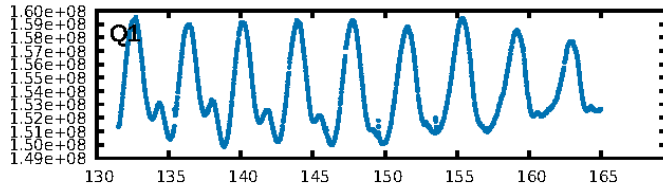
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [478.43σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 37.1%
ModelChiSquareGof-sig: 86.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -50.65
Centroid-sig: 26.1%
Centroid-so: 0.656 arcsec [0.42σ]
OotOffset-rm: 0.046 arcsec [0.35σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-rm: 0.976 arcsec [5.64σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

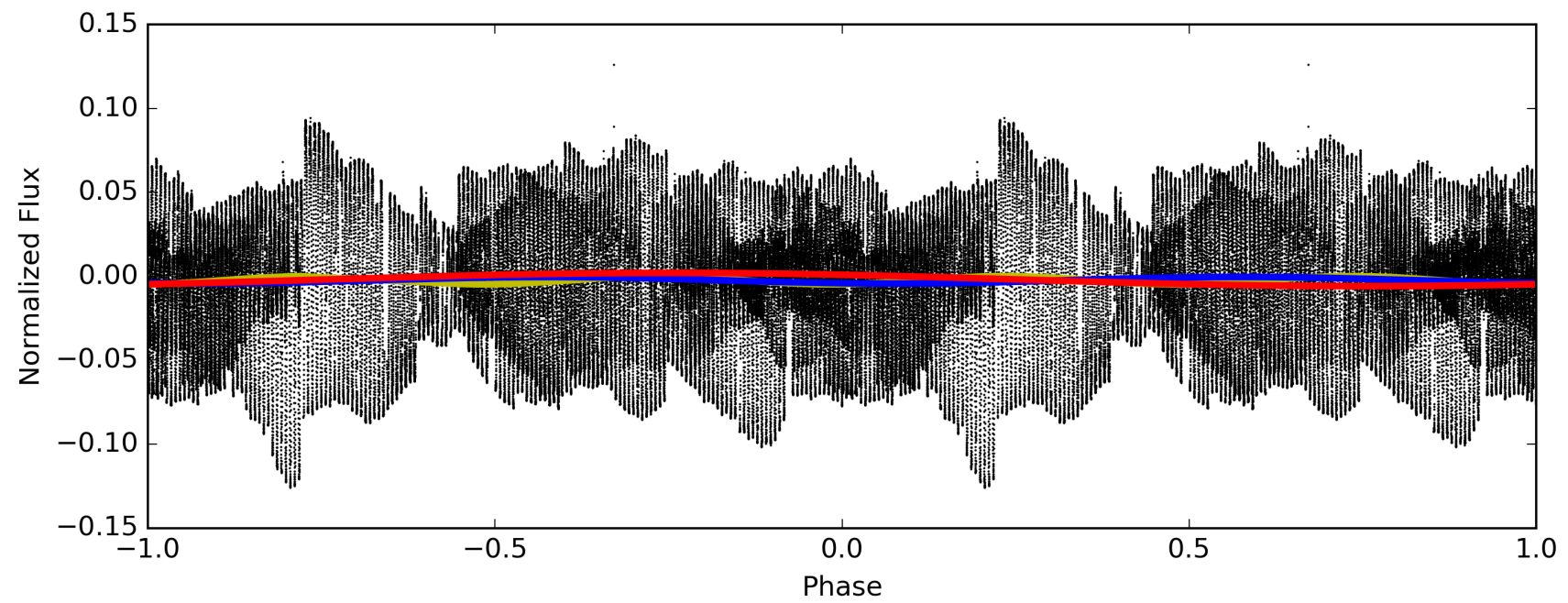
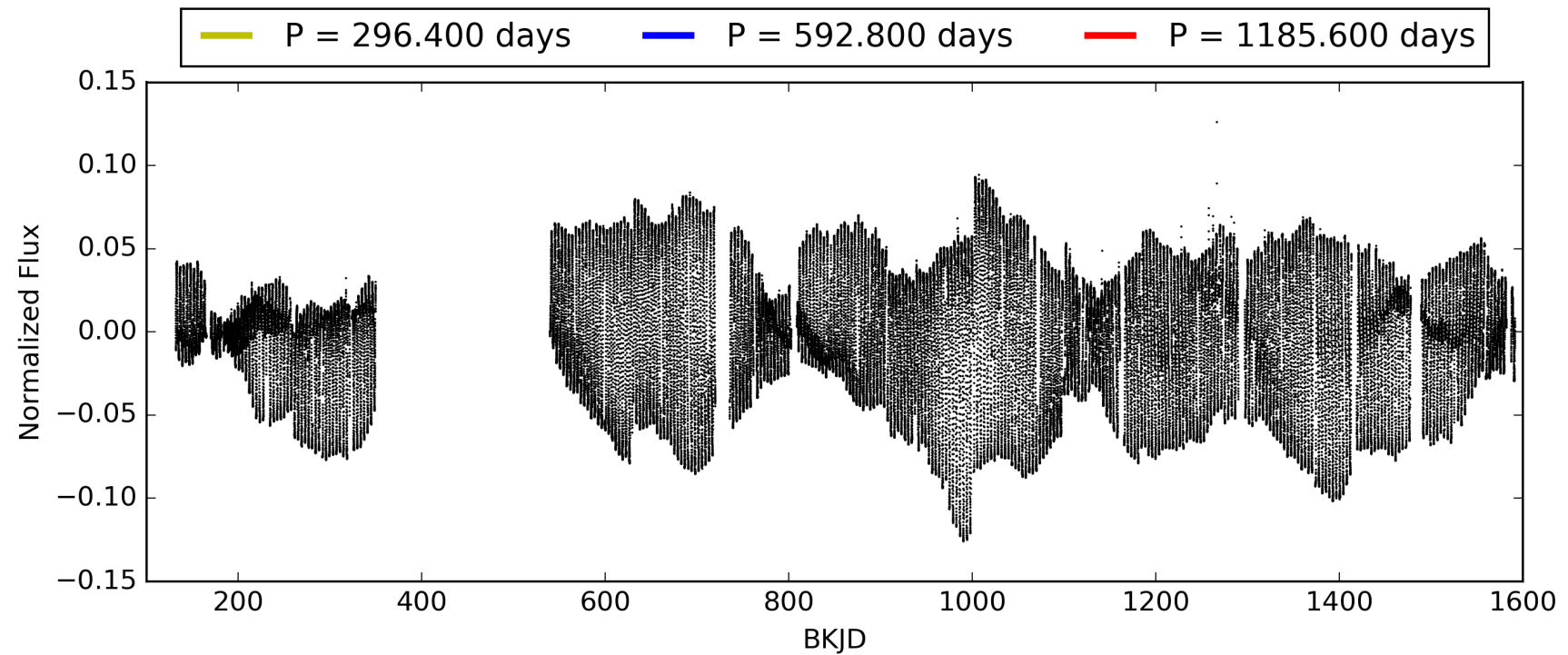
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:38:37 Z

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

TCE 008774912-05, PDC Light Curves

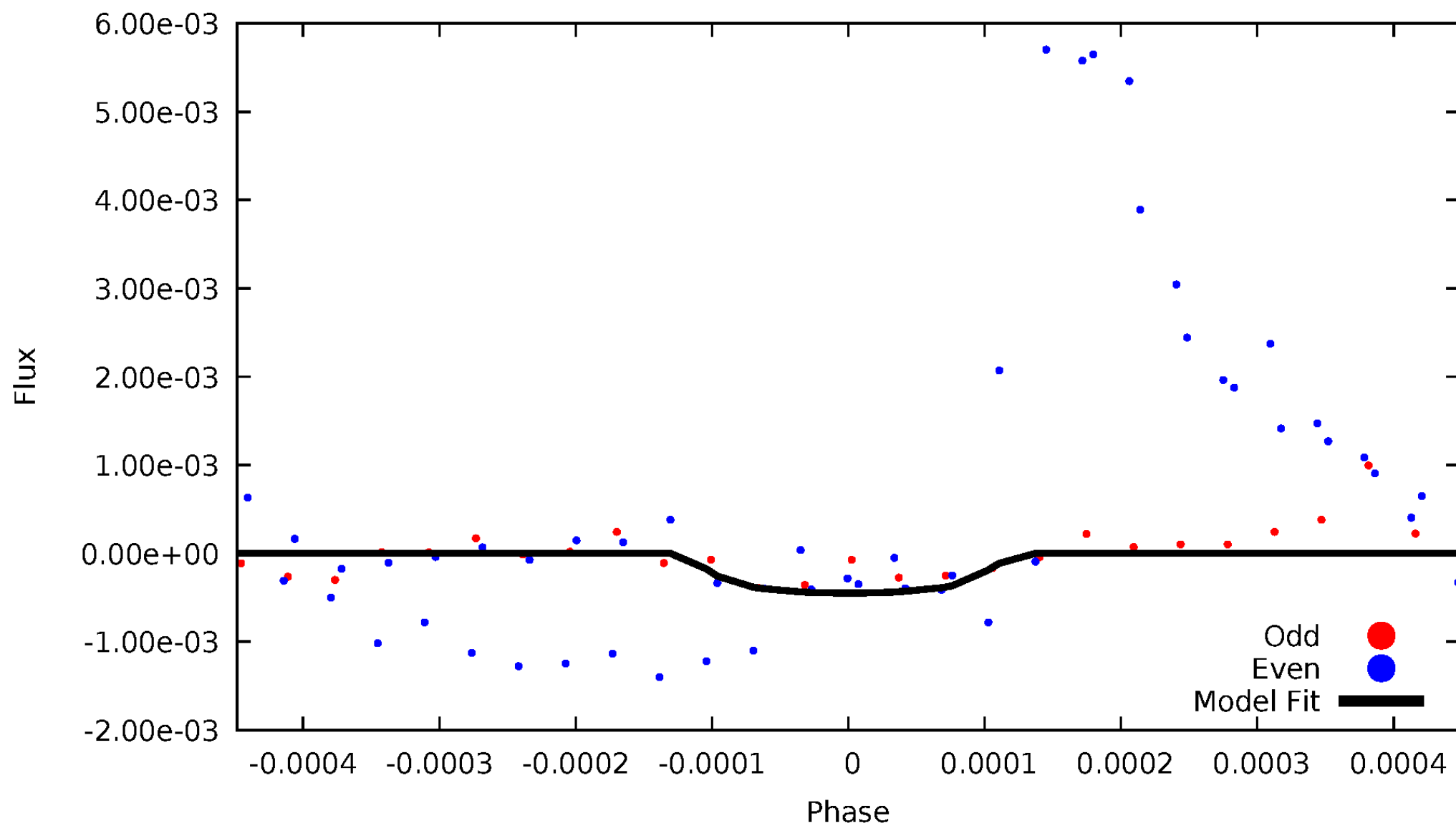


TCE 008774912-05



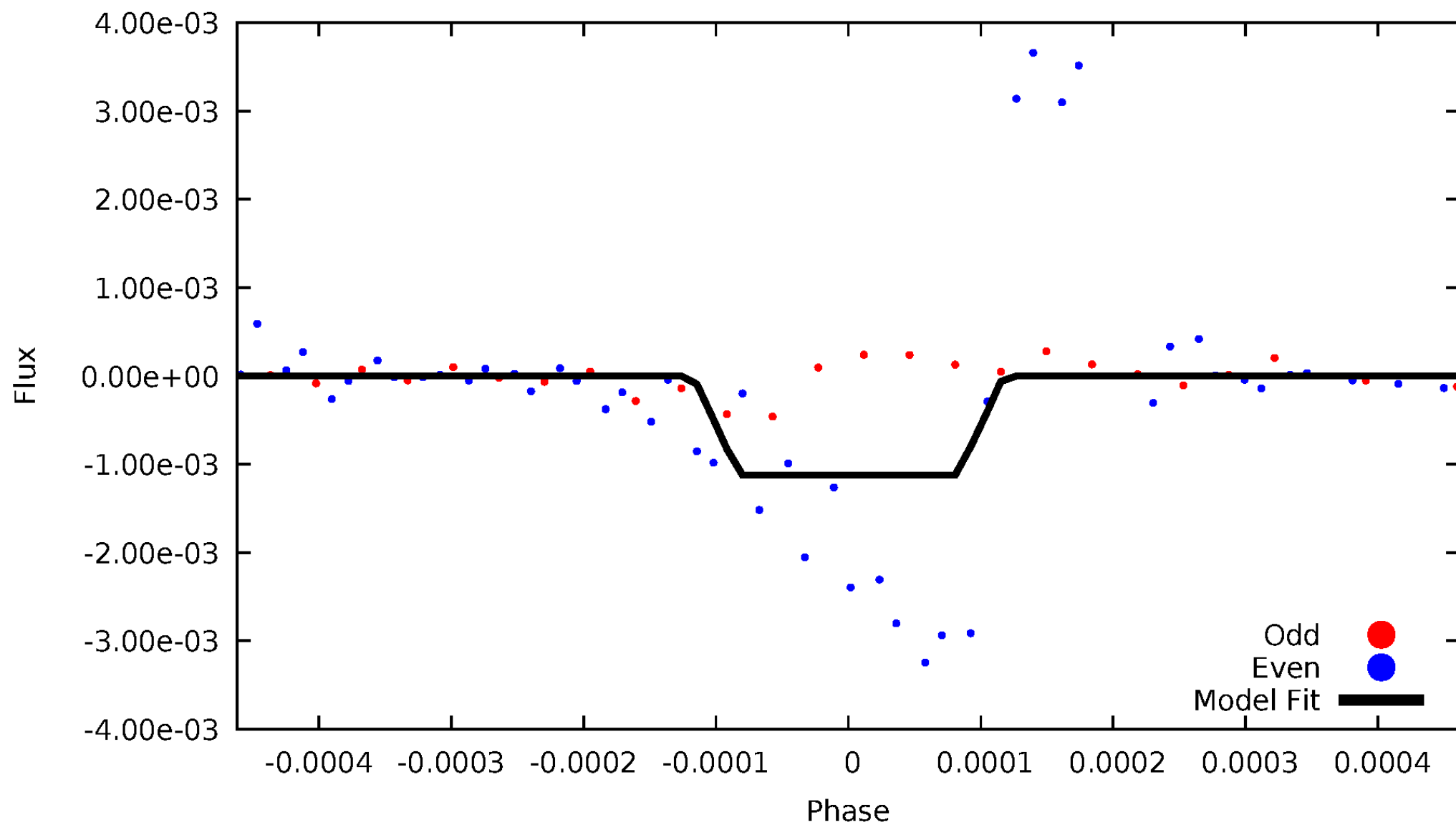
DV Odd/Even

TCE 008774912-05



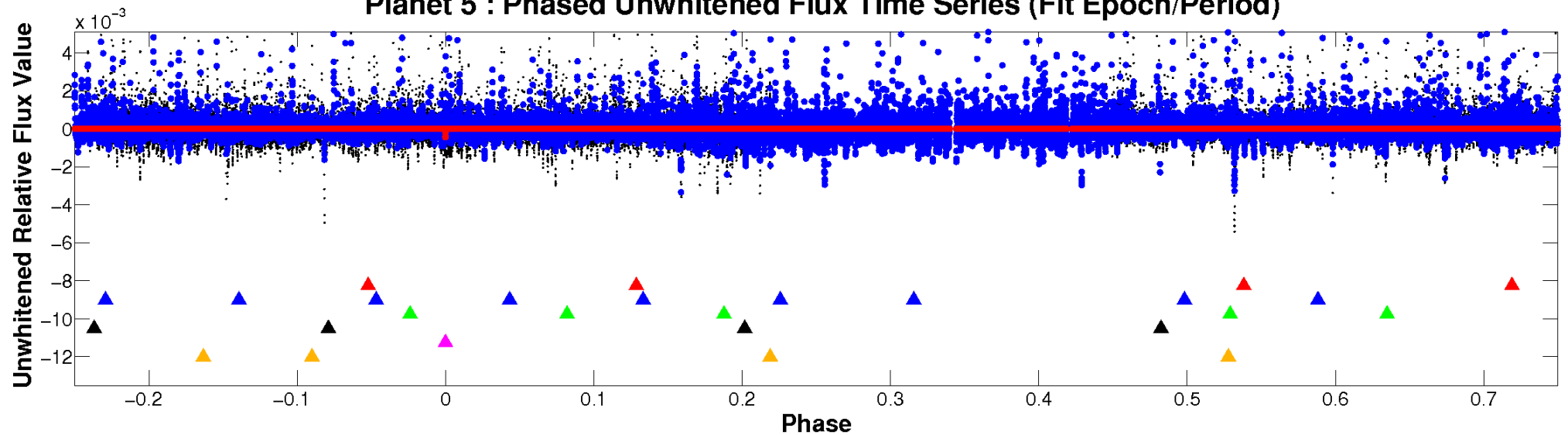
ALT Odd/Even

TCE 008774912-05

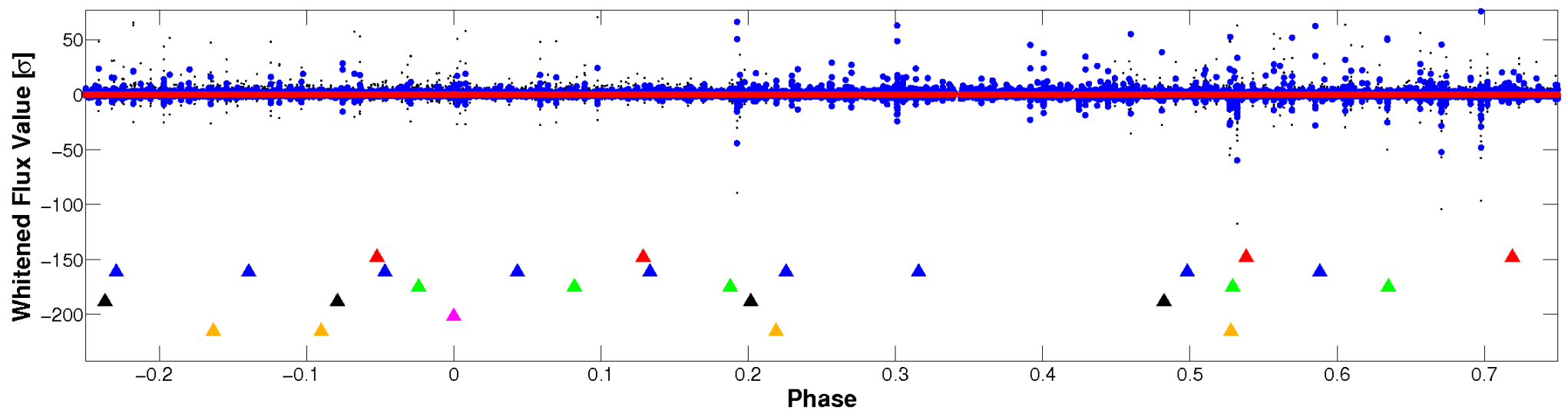


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

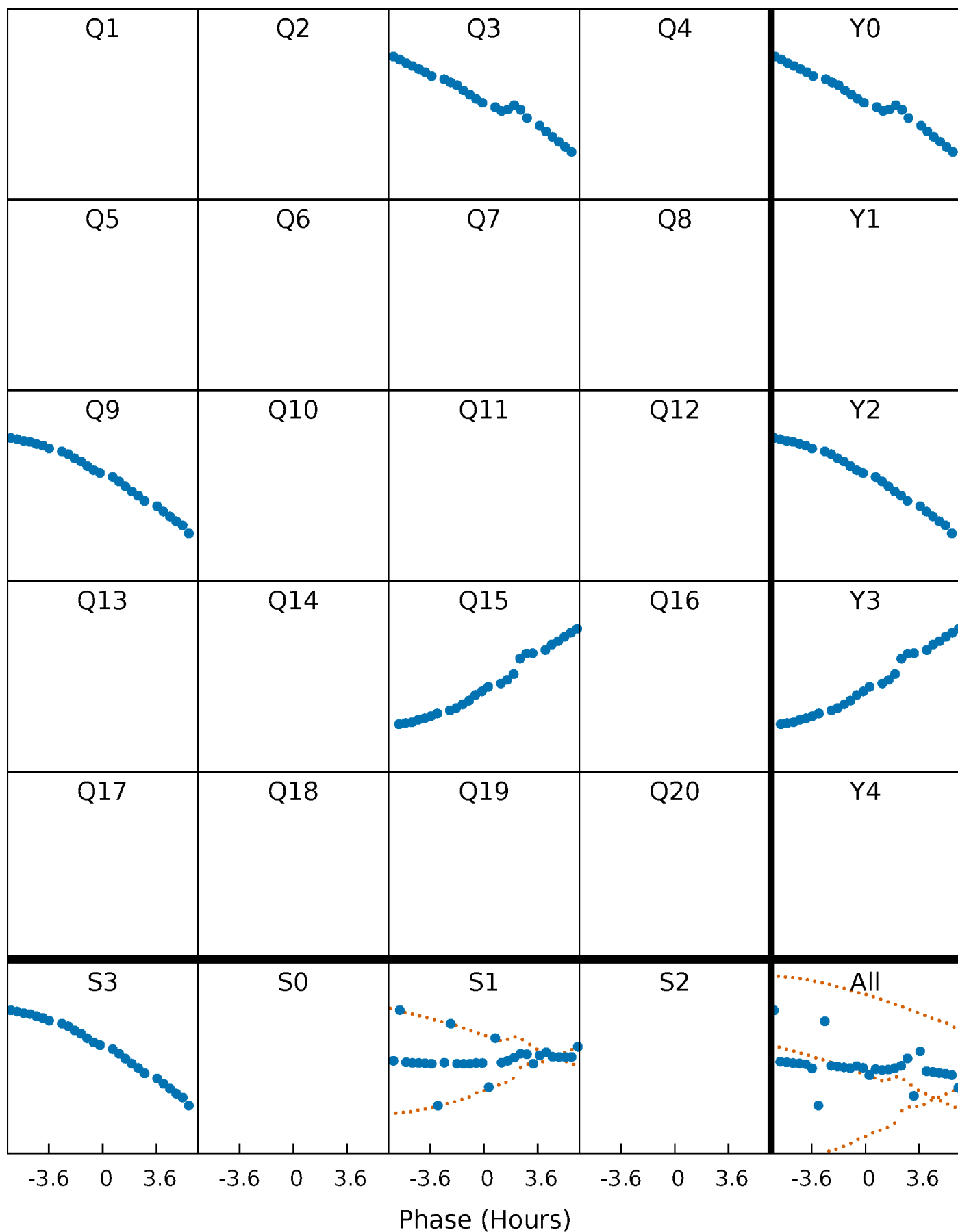


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



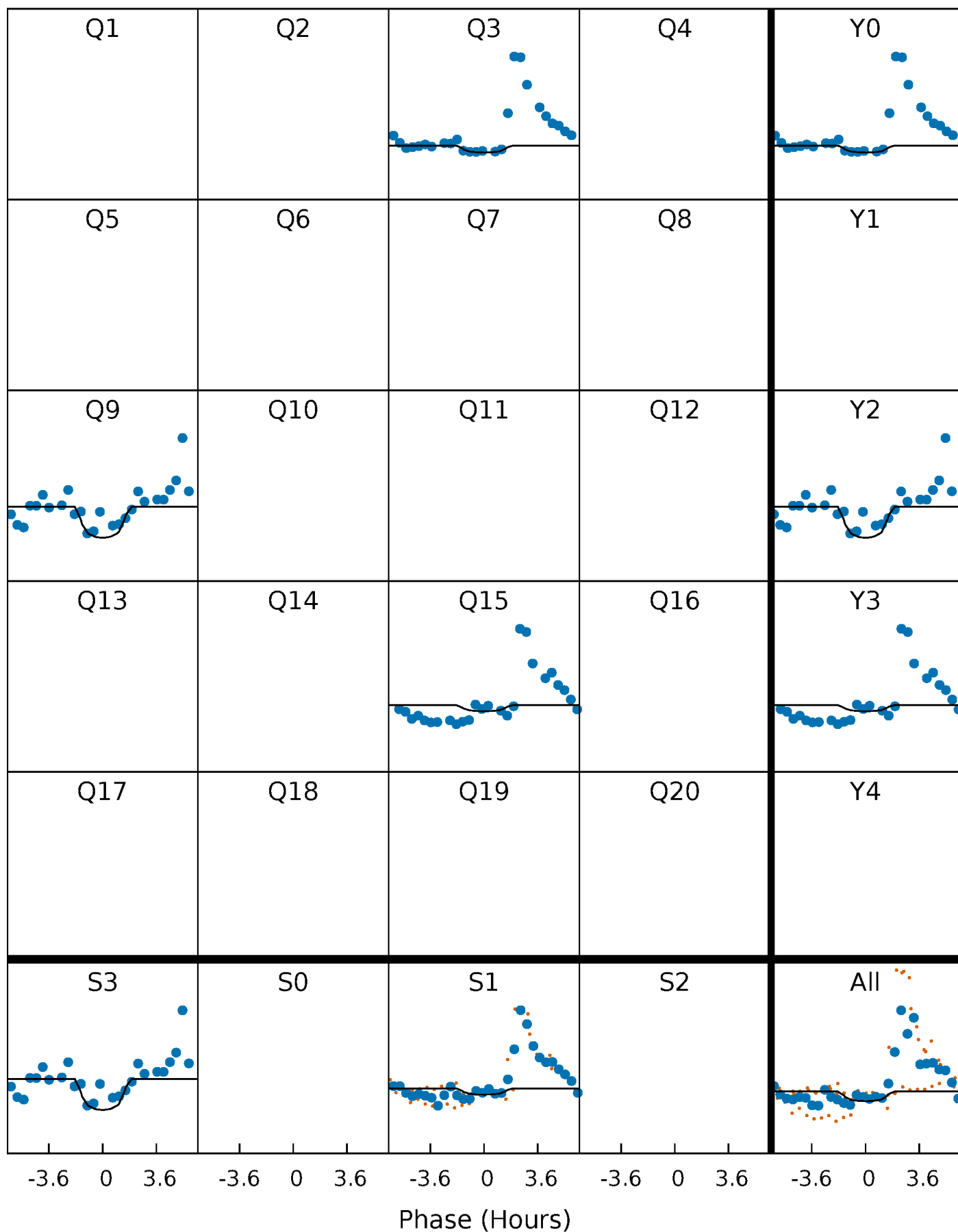
PDC Quarter-Phased Transit Curves

TCE 008774912-05 $P=592.800018$ Days $T_0=275.586499$ (BKJD)



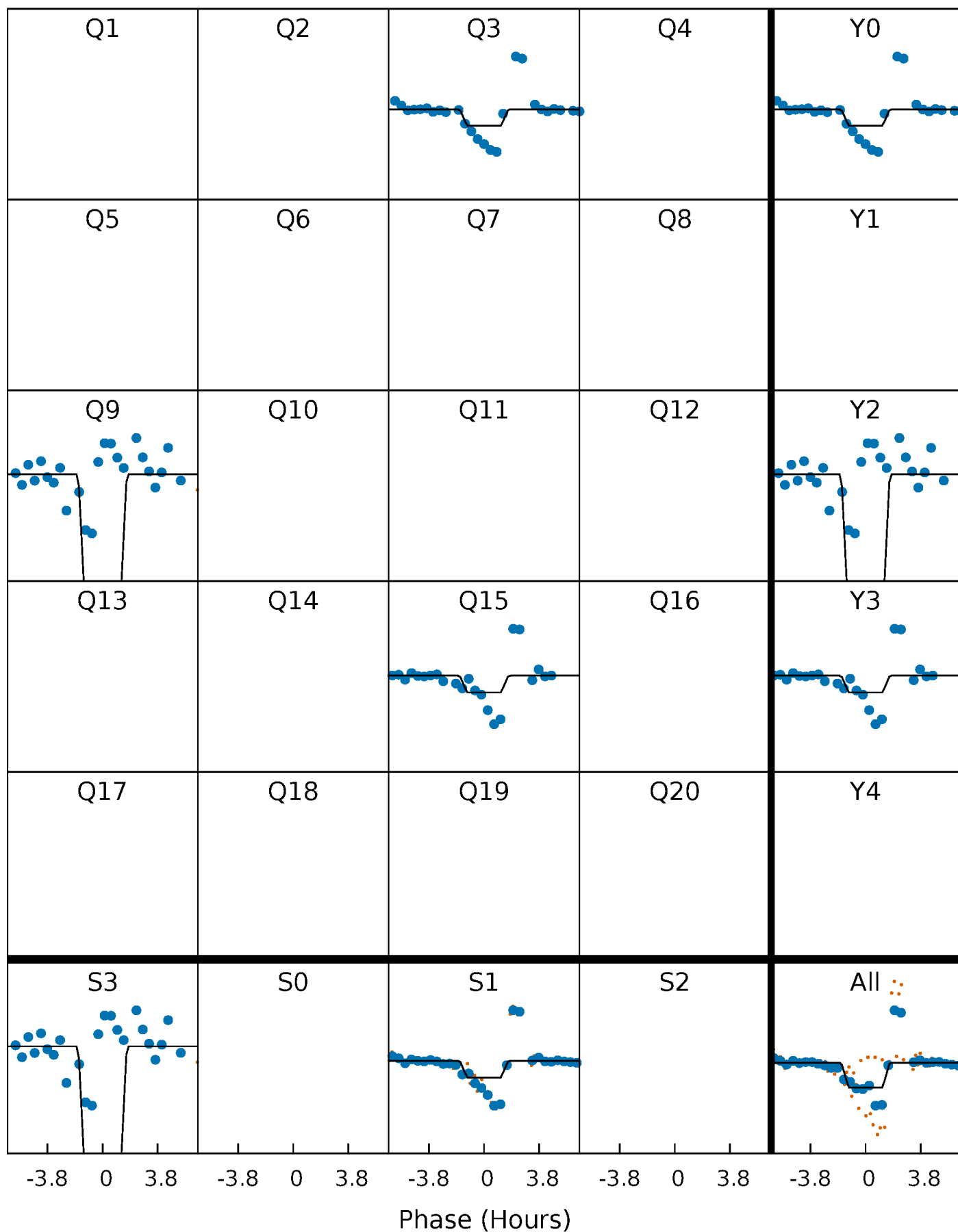
DV Quarter-Phased Transit Curves

TCE 008774912-05 $P=592.800018$ Days $T_0=275.586499$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

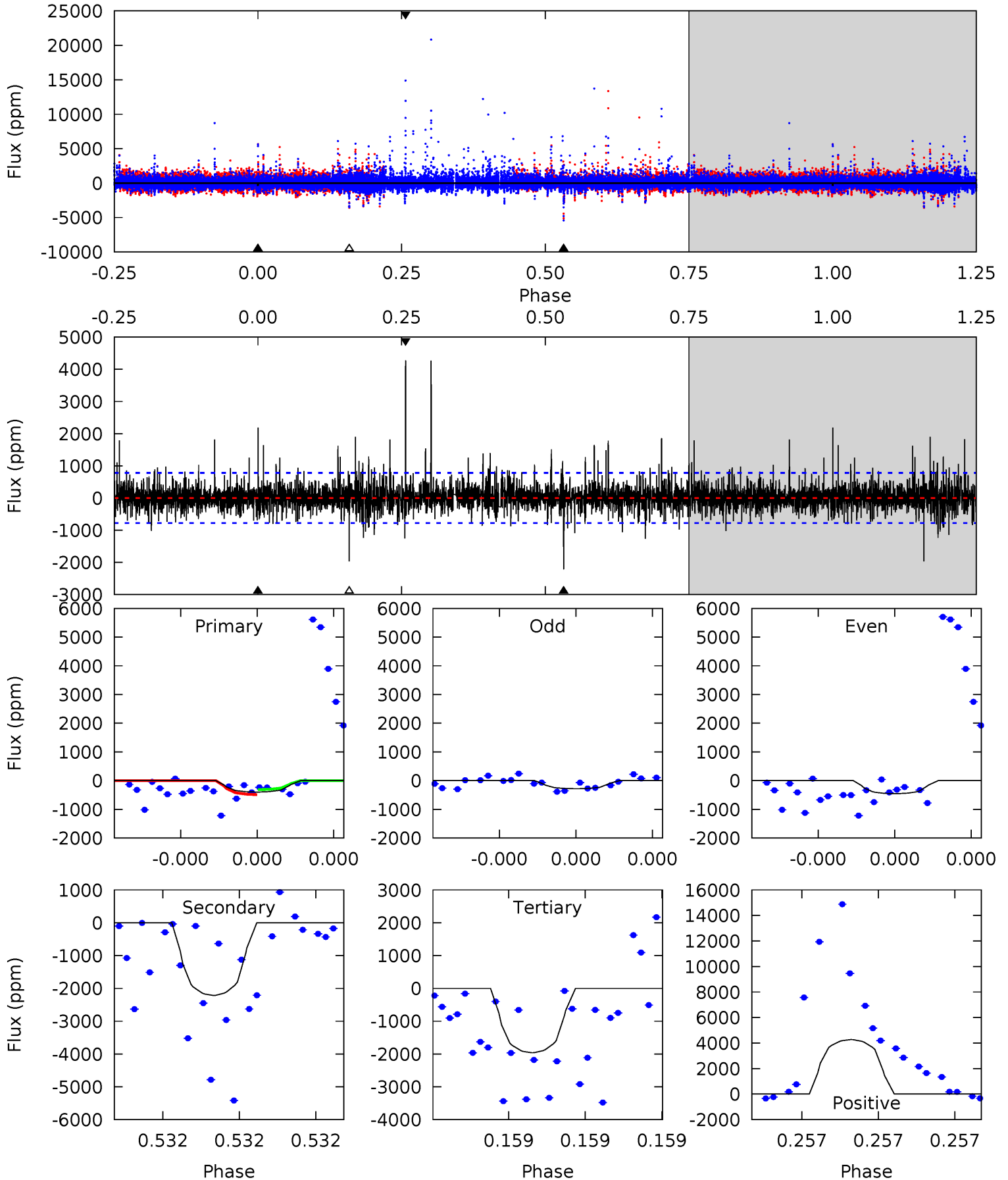
TCE 008774912-05 P=592.811631 Days $T_0=275.589854$ (BKJD)



DV Model-Shift Uniqueness Test

008774912-05, P = 592.800018 Days, E = 275.586499 Days

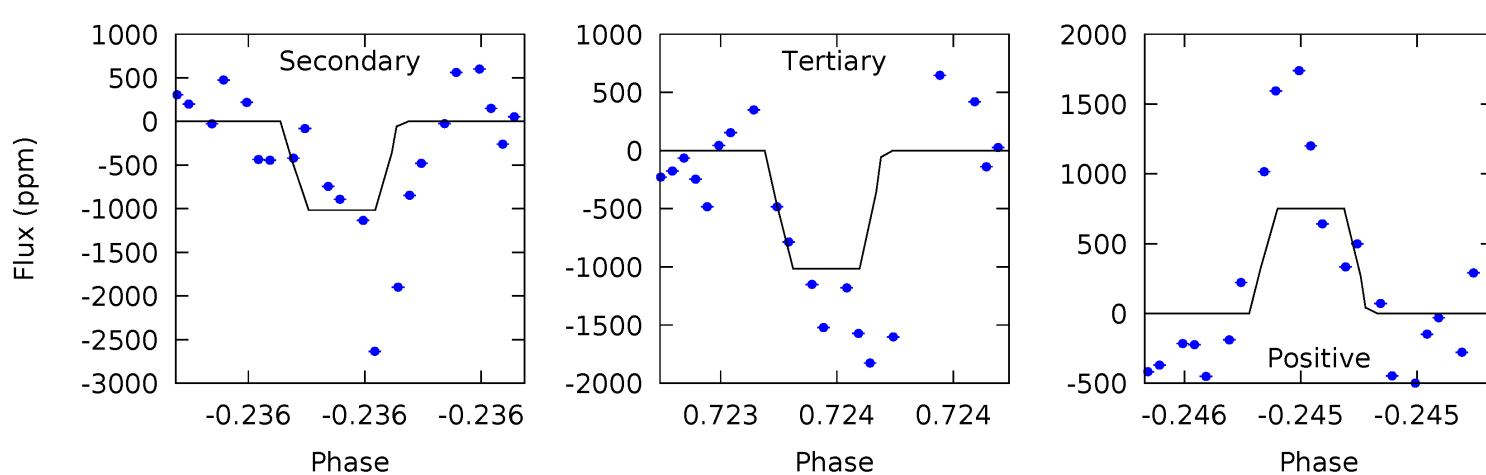
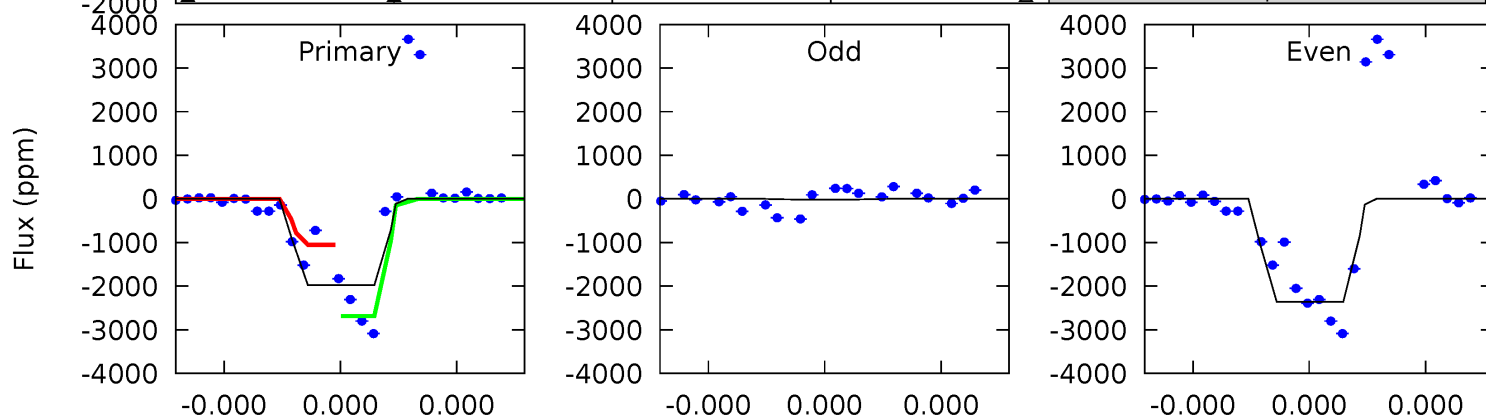
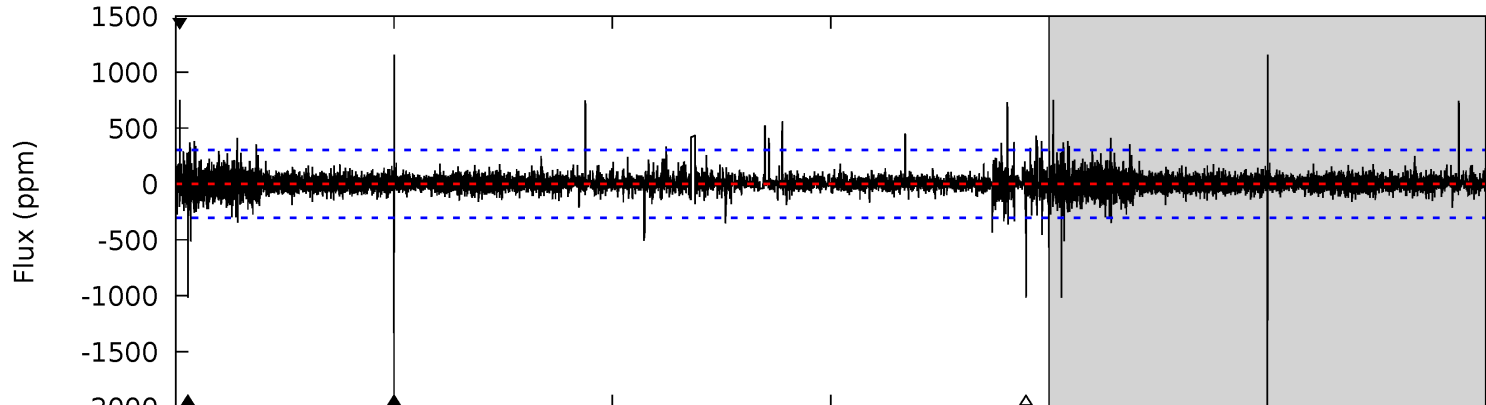
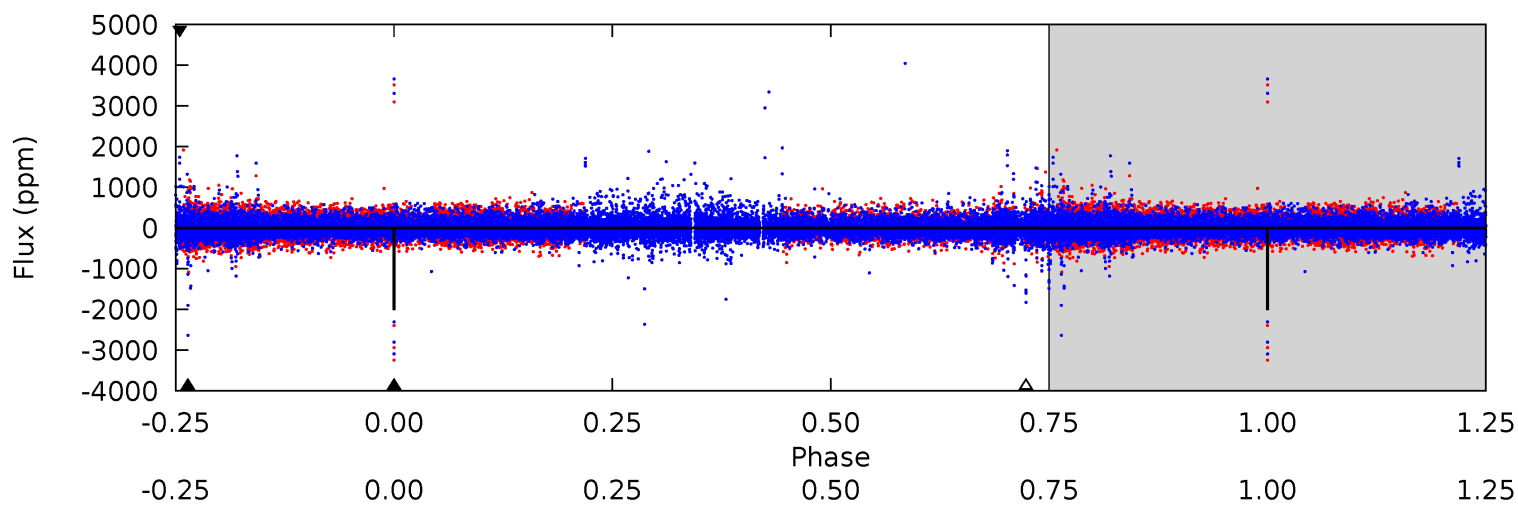
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.92	16.2	14.3	31.3	5.70	3.67	2.14	-11.4	-28.4	1.86	-15.1	0.36	1.25	0.66	0.63



Alt Model-Shift Uniqueness Test

008774912-05, P = 592.811631 Days, E = 275.589854 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.1	19.1	19.1	14.1	5.70	3.67	1.11	18.1	23.0	0.01	4.96	24.0	0.75	0.37	16.1



Stellar Parameters For KIC 008774912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4748^{+143}_{-107}	$2.792^{+0.413}_{-0.337}$	$-0.240^{+0.300}_{-0.200}$	$6.264^{+4.091}_{-2.203}$	$0.886^{+0.432}_{-0.023}$	$0.005^{+0.016}_{-0.003}$
	+3%/-2%	+15%/-12%	+125%/-83%	+65%/-35%	+49%/-3%	+319%/-67%
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 008774912-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2216 ± 137	$57.89^{+75.93}_{-39.74}$	628^{+95}_{-78}	3790^{+2251}_{-781}	713^{+6360}_{-577}
Alt.	-1016 ± 53	$62.79^{+64.52}_{-42.25}$	626^{+95}_{-69}	3284^{+1773}_{-581}	270^{+2244}_{-205}

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

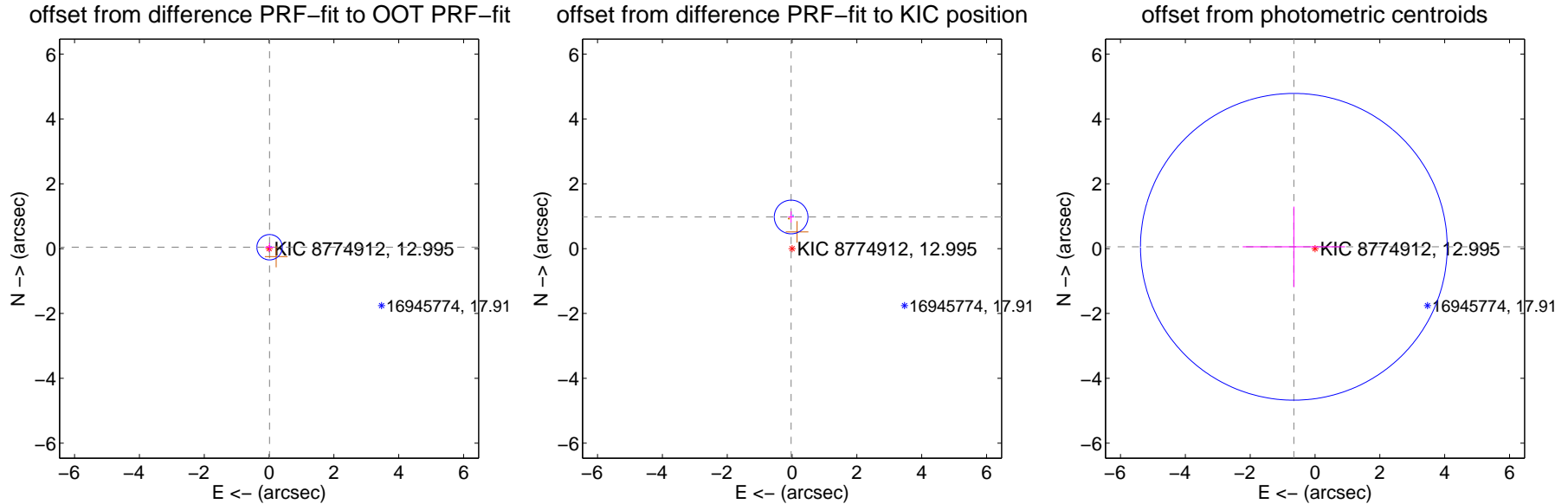
DV Centroid Data

Supplemental centroid analysis for 008774912-05. Kepler magnitude: 12.99. Transit SNR 1.89

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.96 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.046 ± 0.130	0.35	-0.015 ± 0.135	0.043 ± 0.130
PRF-fit source offset from KIC position	0.976 ± 0.173	5.64	0.029 ± 0.087	0.976 ± 0.172
photometric centroid source offset	0.66 ± 1.58	0.42	0.65 ± 1.58	0.06 ± 1.24



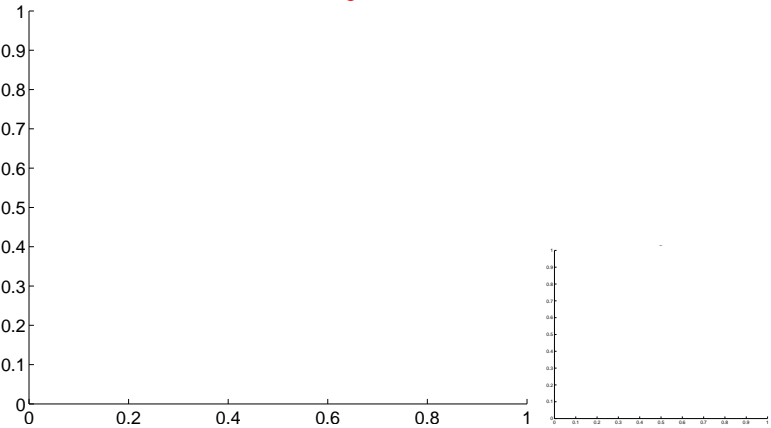
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q1 no difference image



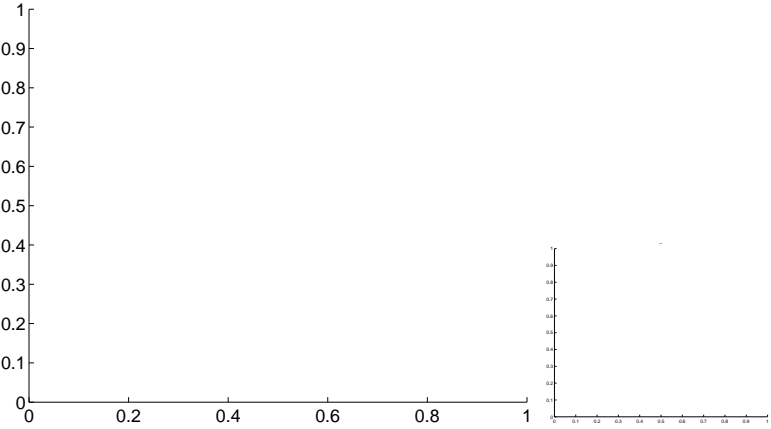
Q1 no OOT image



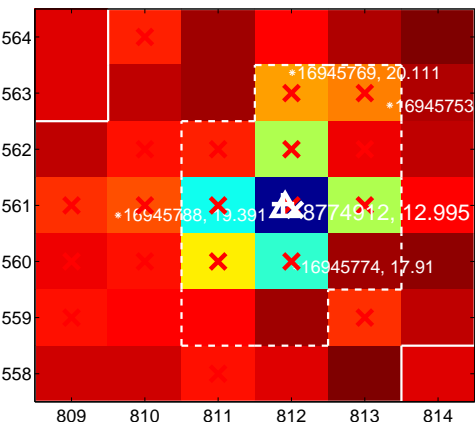
Q2 no difference image



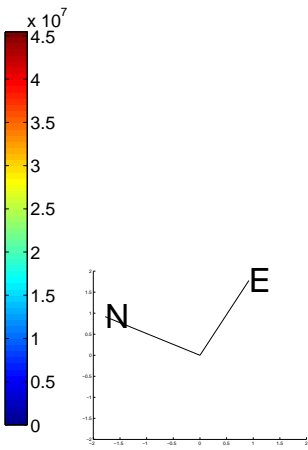
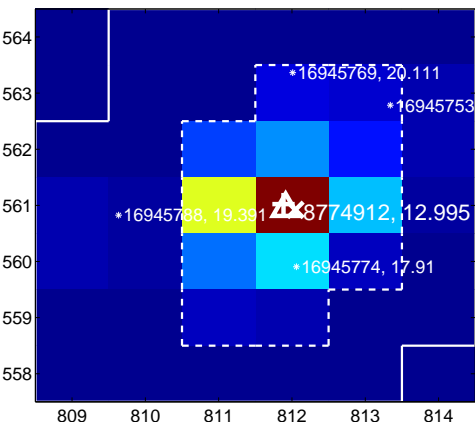
Q2 no OOT image



Q3 difference image. Poor Quality



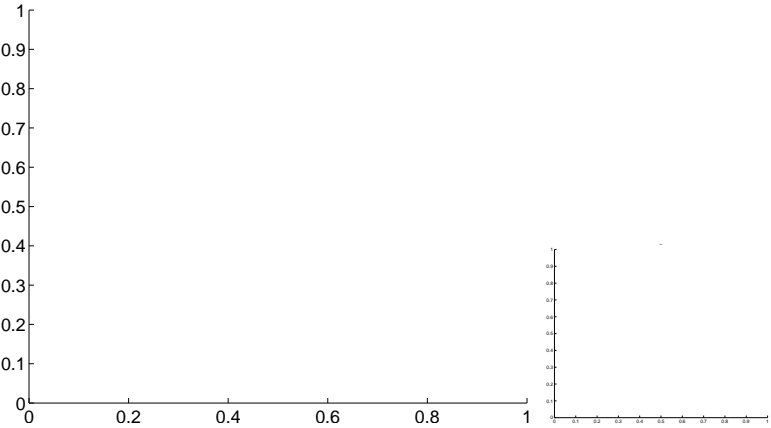
Q3 OOT image



Q4 no difference image



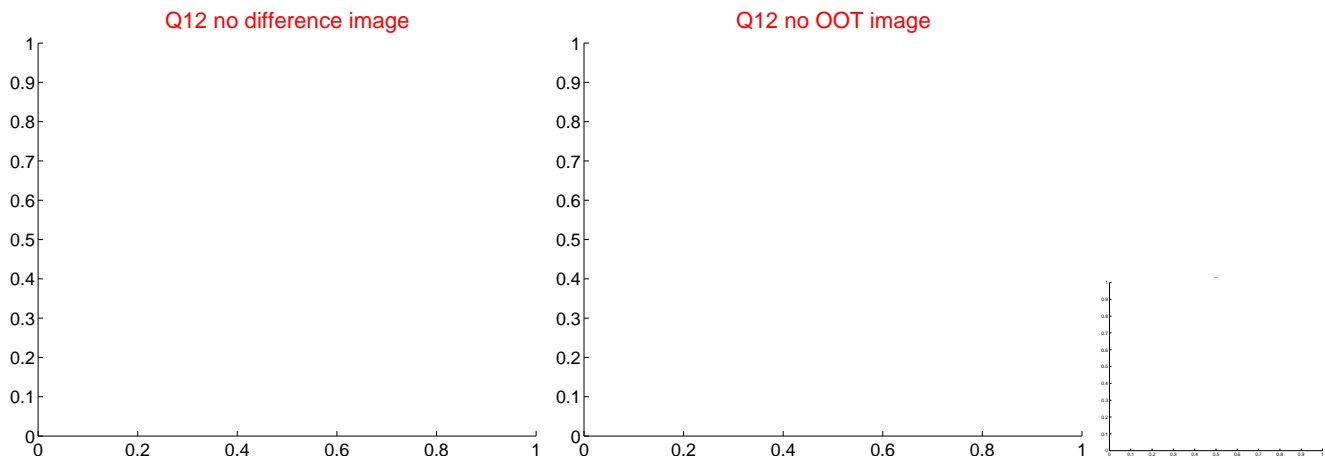
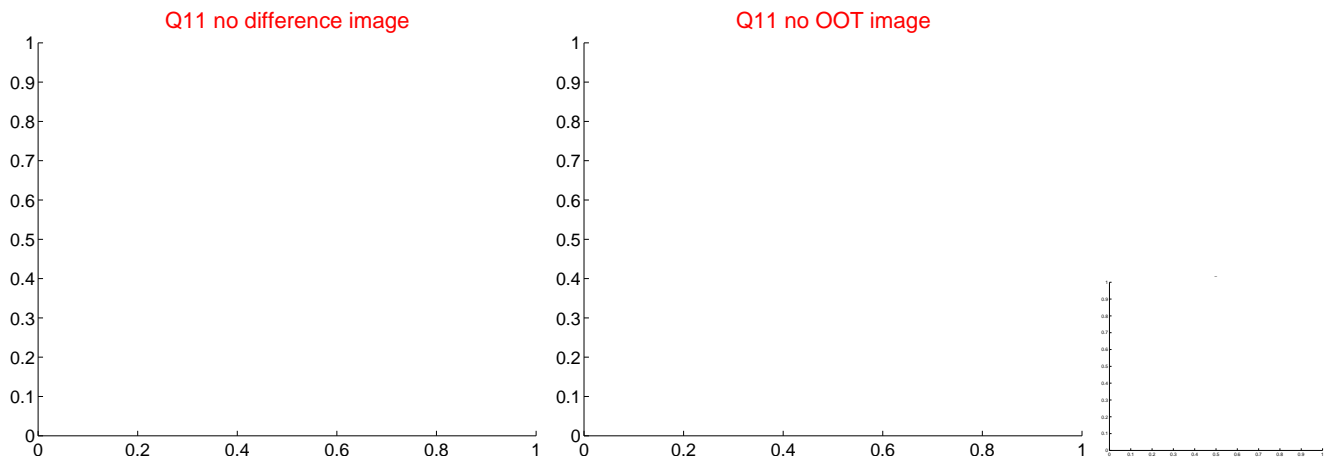
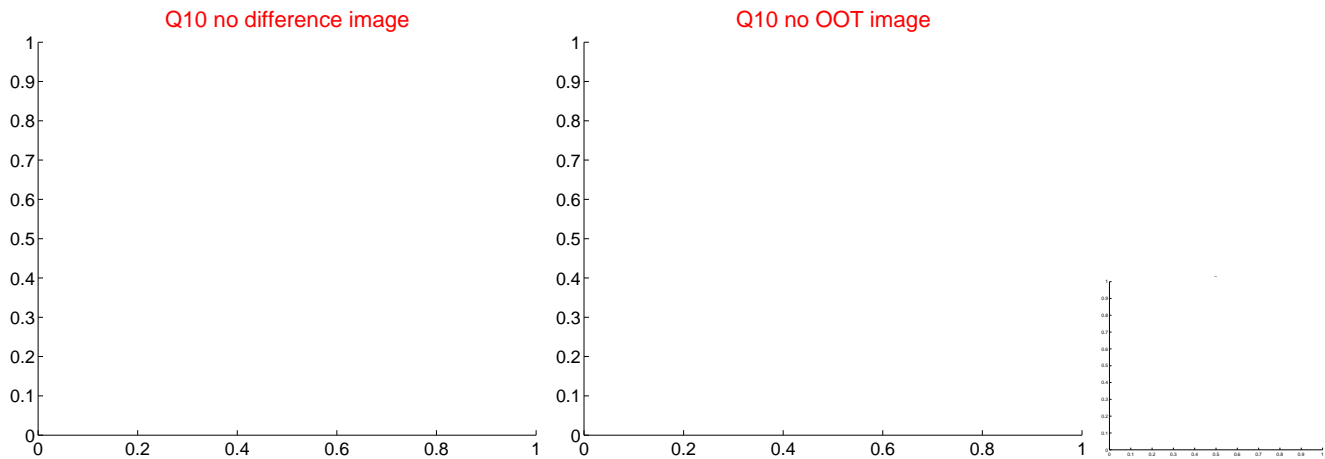
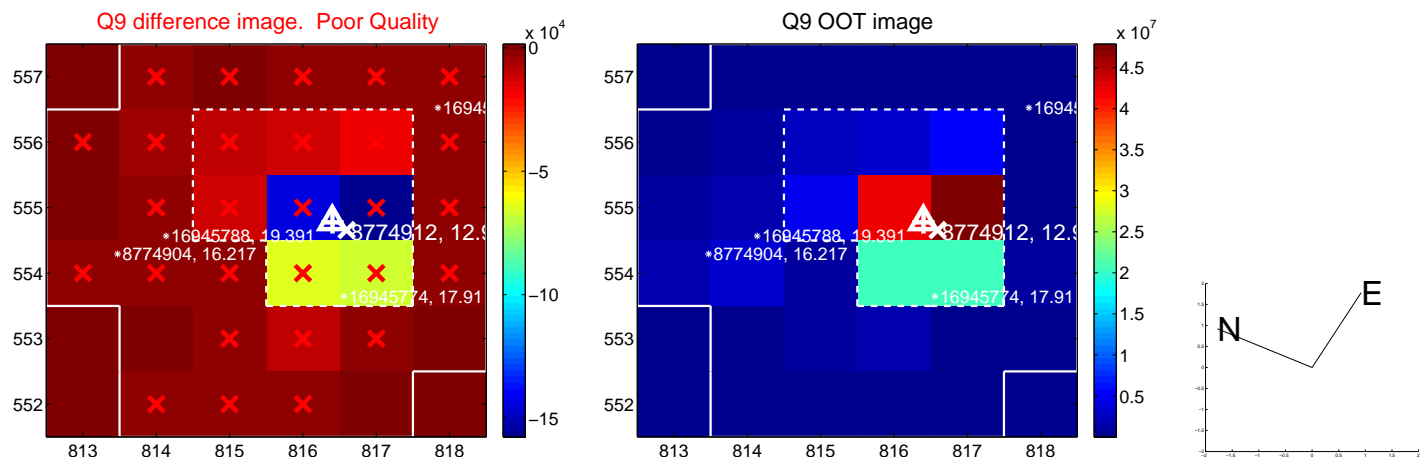
Q4 no OOT image



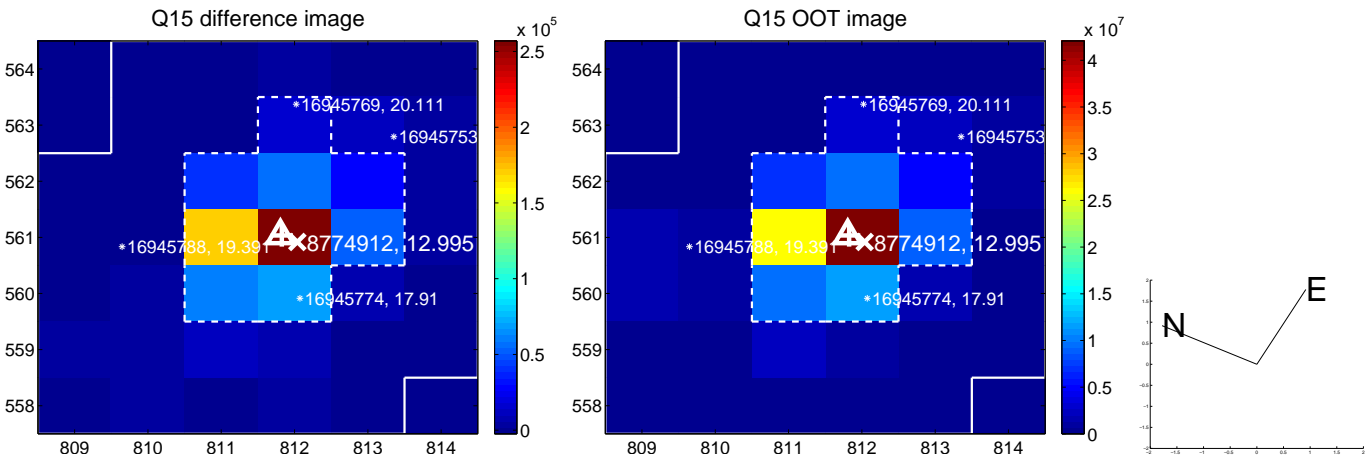
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



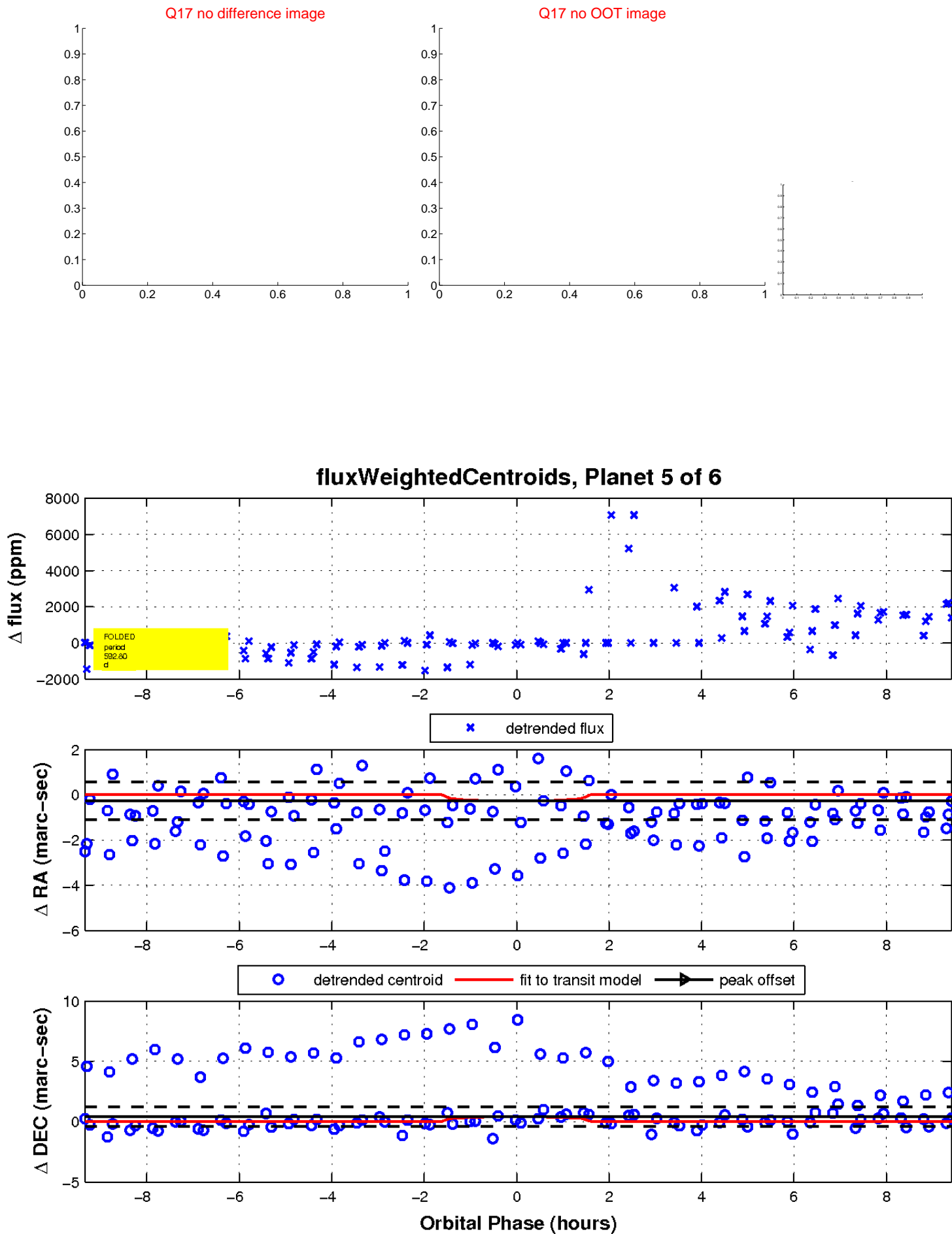
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



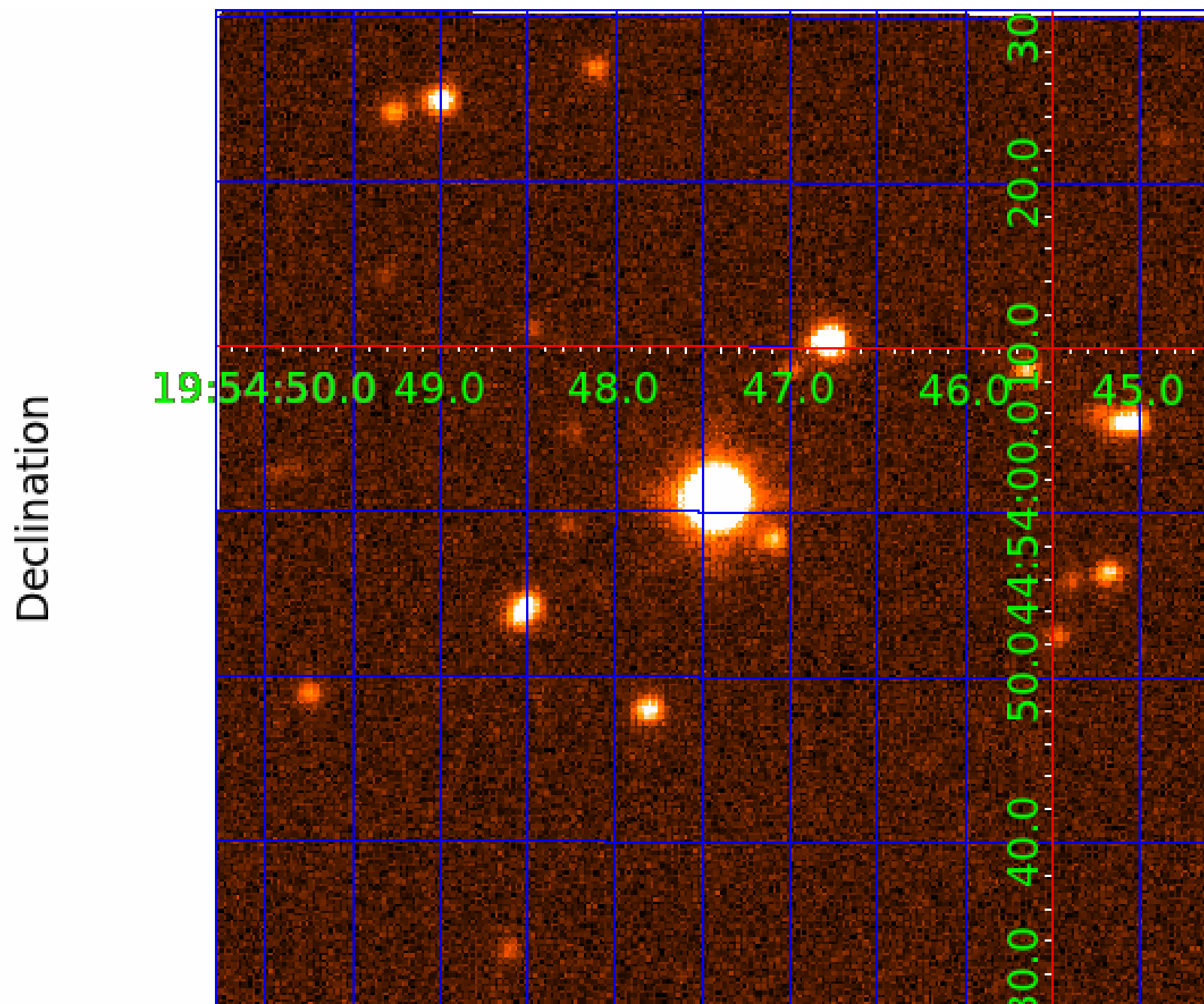
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008774912

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})
008774912-01	OBS	No	349.990766	244.673589	699.8	4.365	29.7	3.5	6.26	4748	16.95	20.48
008774912-02	OBS	No	161.538049	247.881593	677.8	2.649	16.6	6.7	6.26	4748	18.02	57.43
008774912-03	OBS	No	265.033261	386.911402	1876.3	3.086	16.0	9.9	6.26	4748	30.02	29.68
008774912-04	OBS	No	426.394218	135.189409	1581.8	7.714	20.4	6.6	6.26	4748	25.05	15.74
008774912-05	OBS	No	592.800019	275.586499	450.2	3.189	17.1	1.9	6.26	4748	13.96	10.15
008774912-06	OBS	No	409.672444	178.814685	536.3	3.500	16.4	-1.0	6.26	4748	14.00	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008774912-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
008774912-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008774912-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008774912-06	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.

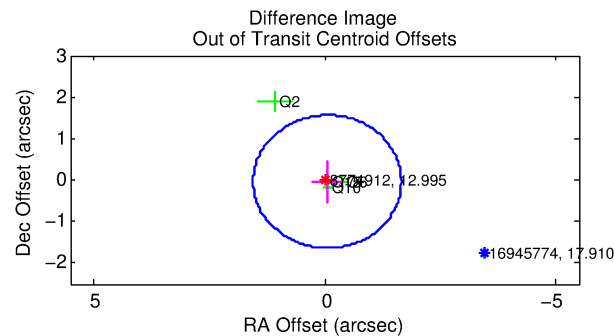
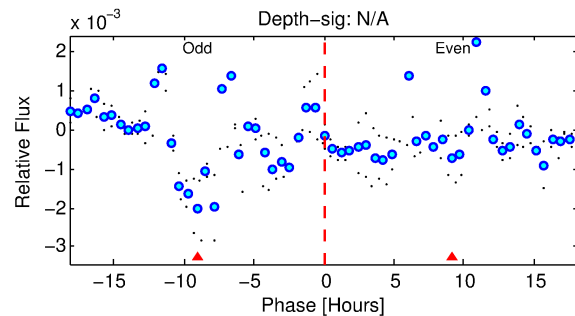
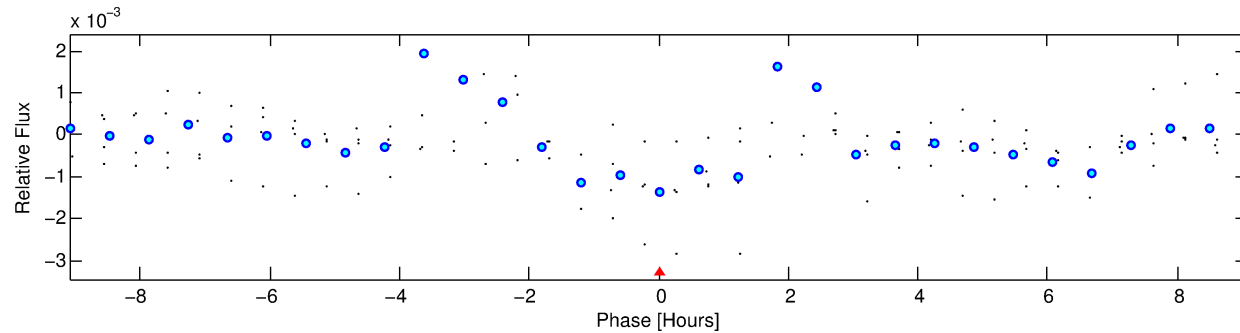
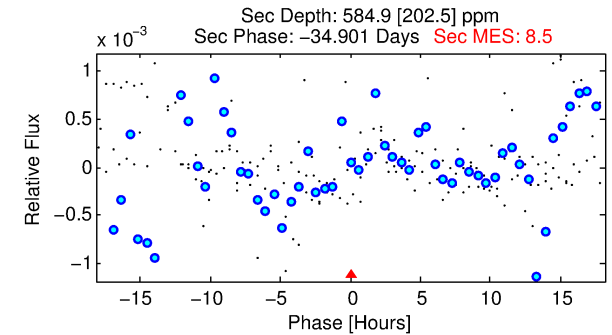
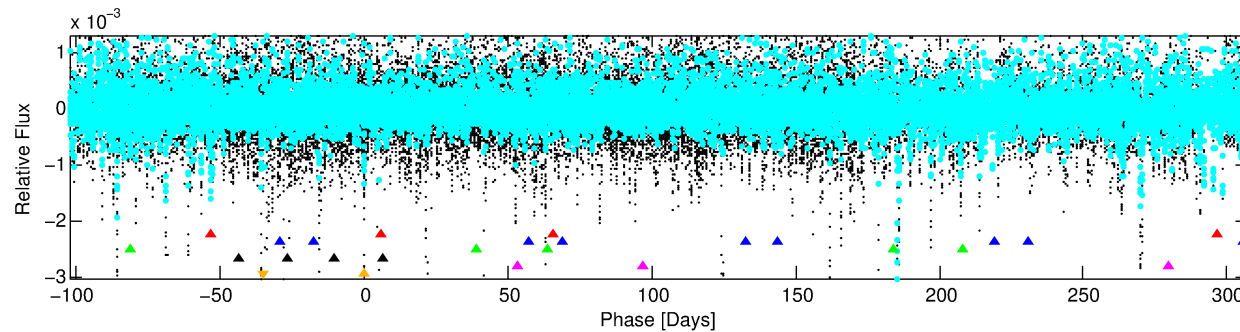
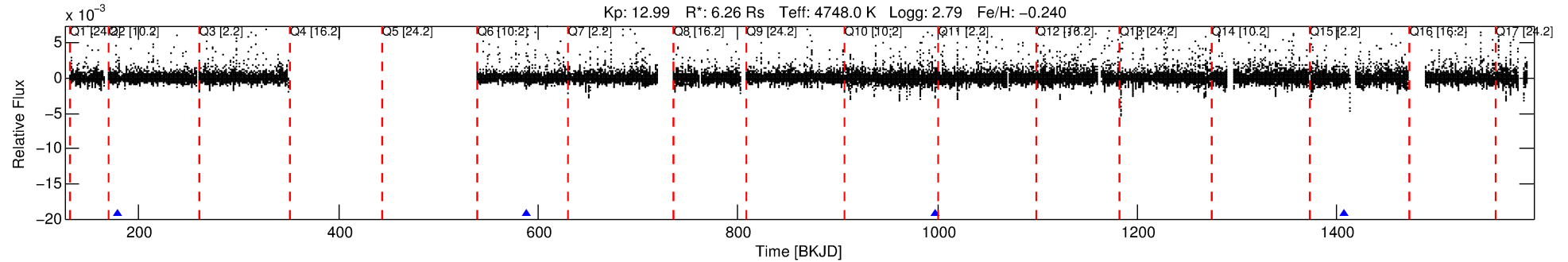
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008774912-06

No Significant Match Found

DV One-Page Summary

KIC: 8774912 Candidate: 6 of 6 Period: 409.672 d



TPS TCE Results:

Period = 409.67244 d
Epoch = 178.8147 BKJD

DV fit results are unavailable

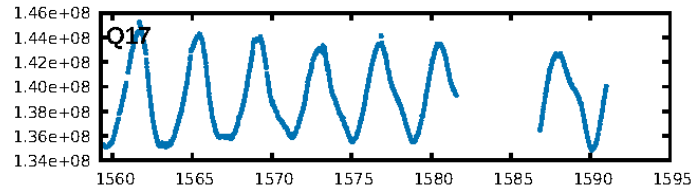
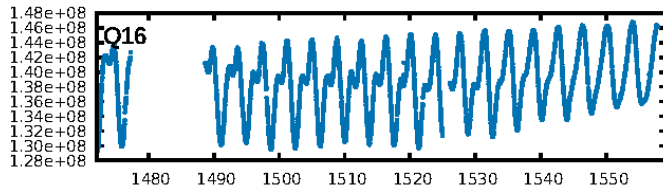
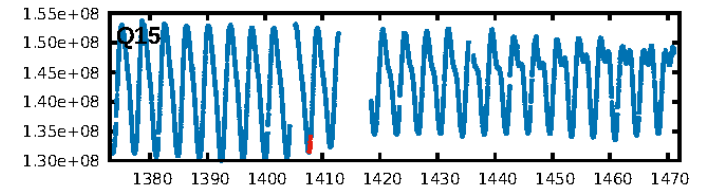
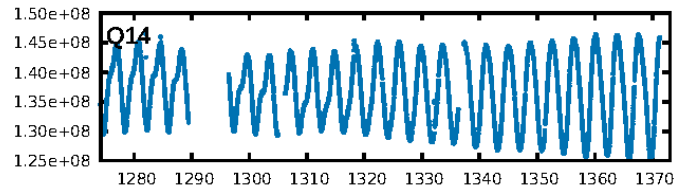
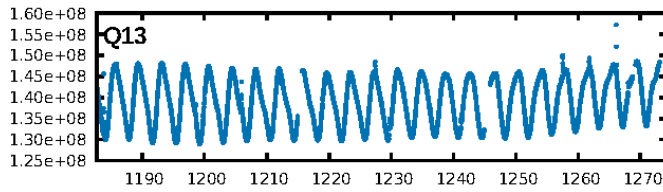
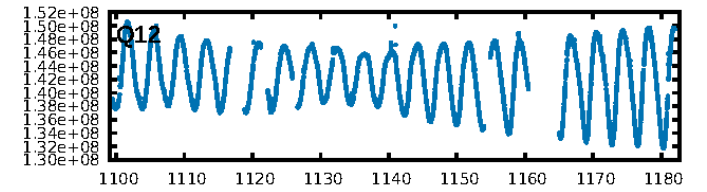
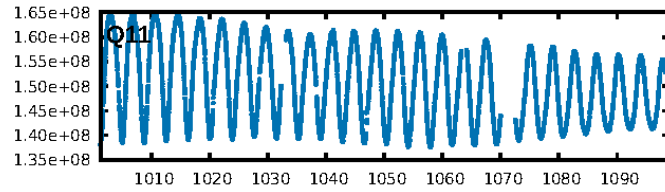
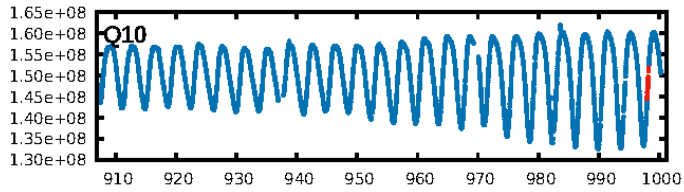
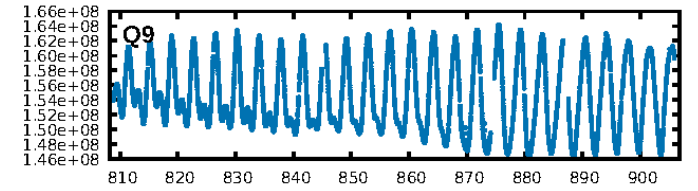
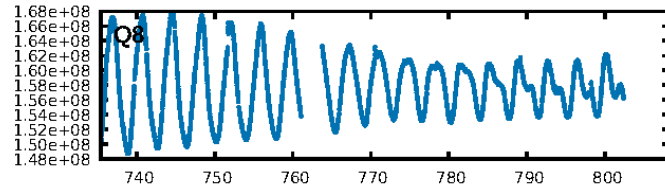
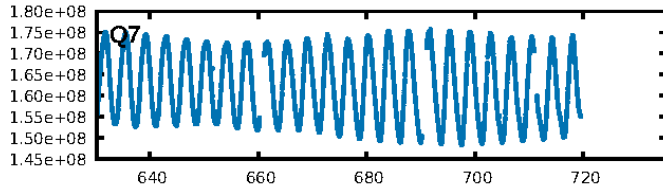
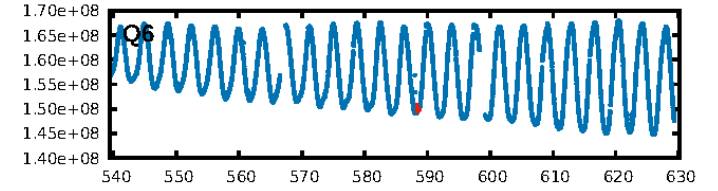
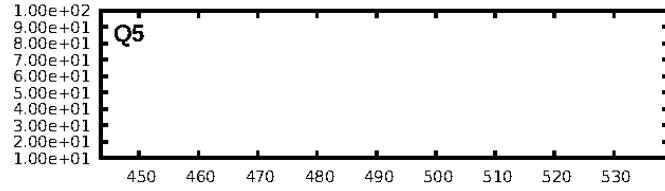
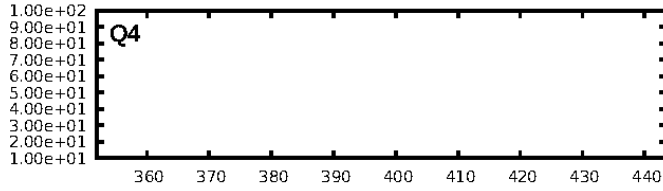
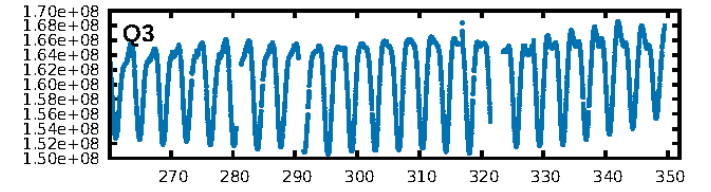
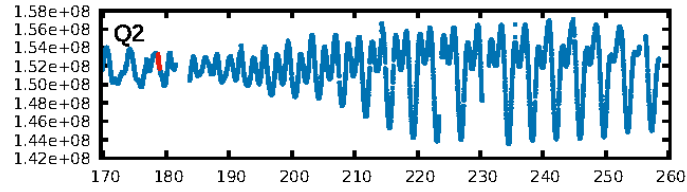
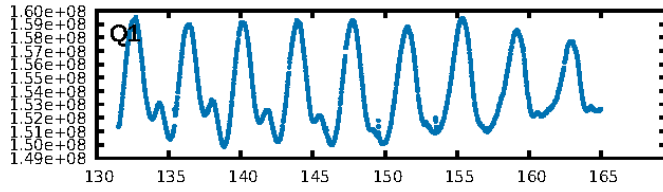
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [256.02σ]
LongPeriod-sig: 100.0% [47.38σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 55.76
Centroid-sig: 20.3%
Centroid-so: 0.668 arcsec [1.87σ]
OotOffset-rm: 0.067 arcsec [0.13σ]
KicOffset-rm: **0.927 arcsec [3.27σ]**
OotOffset-st: 3/1/0/0 [4]
KicOffset-st: 3/1/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

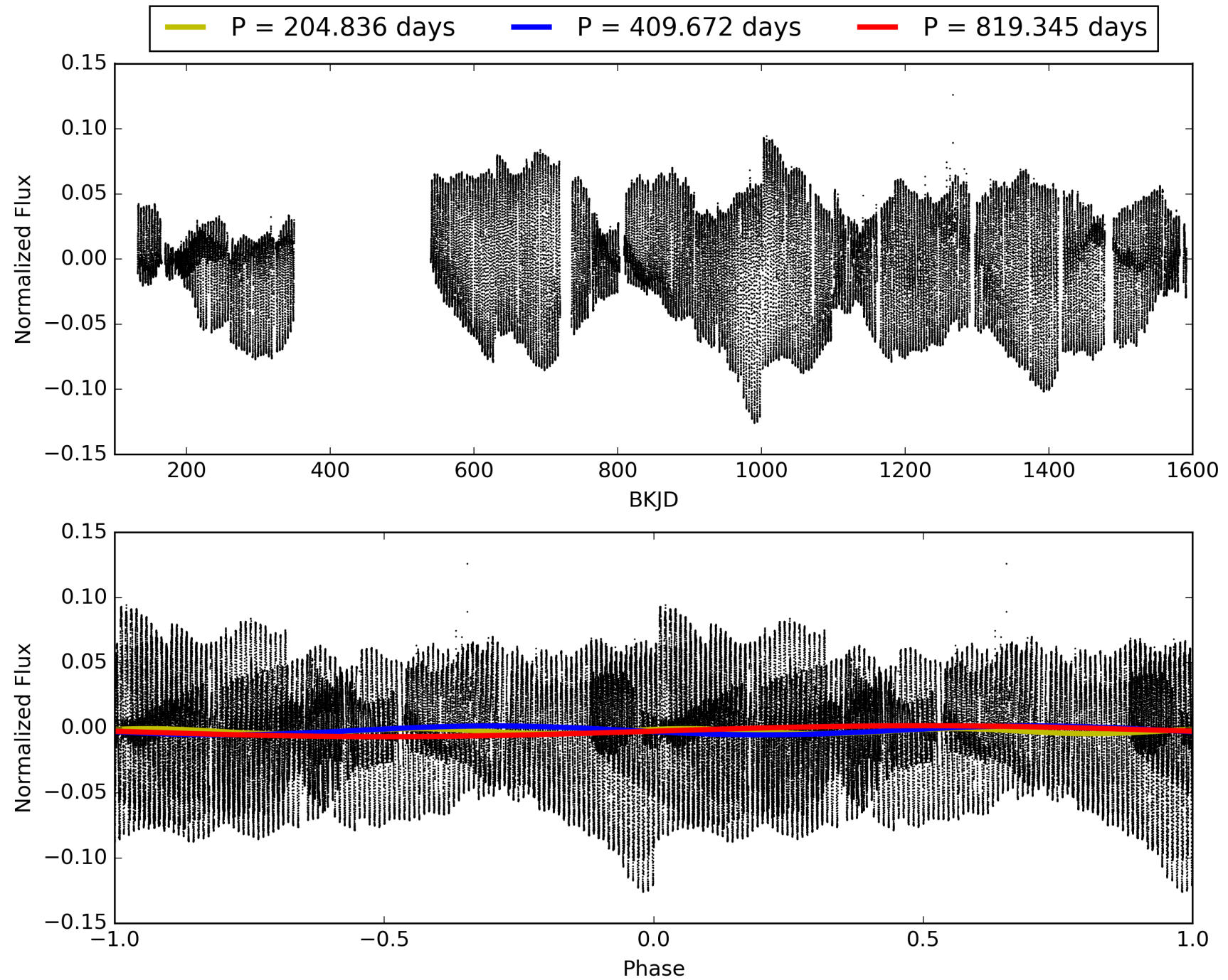
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:38:54 Z

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

TCE 008774912-06, PDC Light Curves

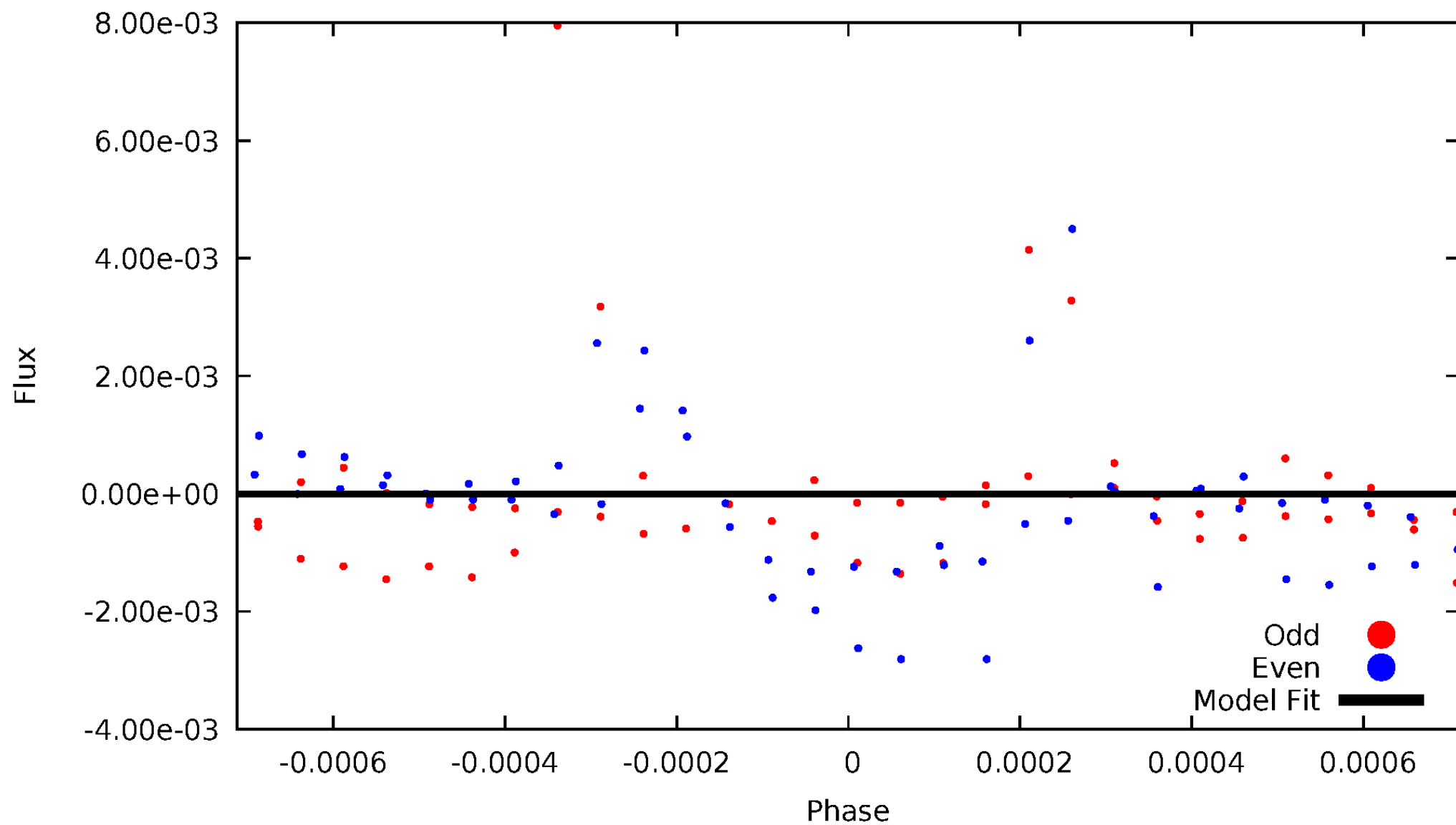


TCE 008774912-06



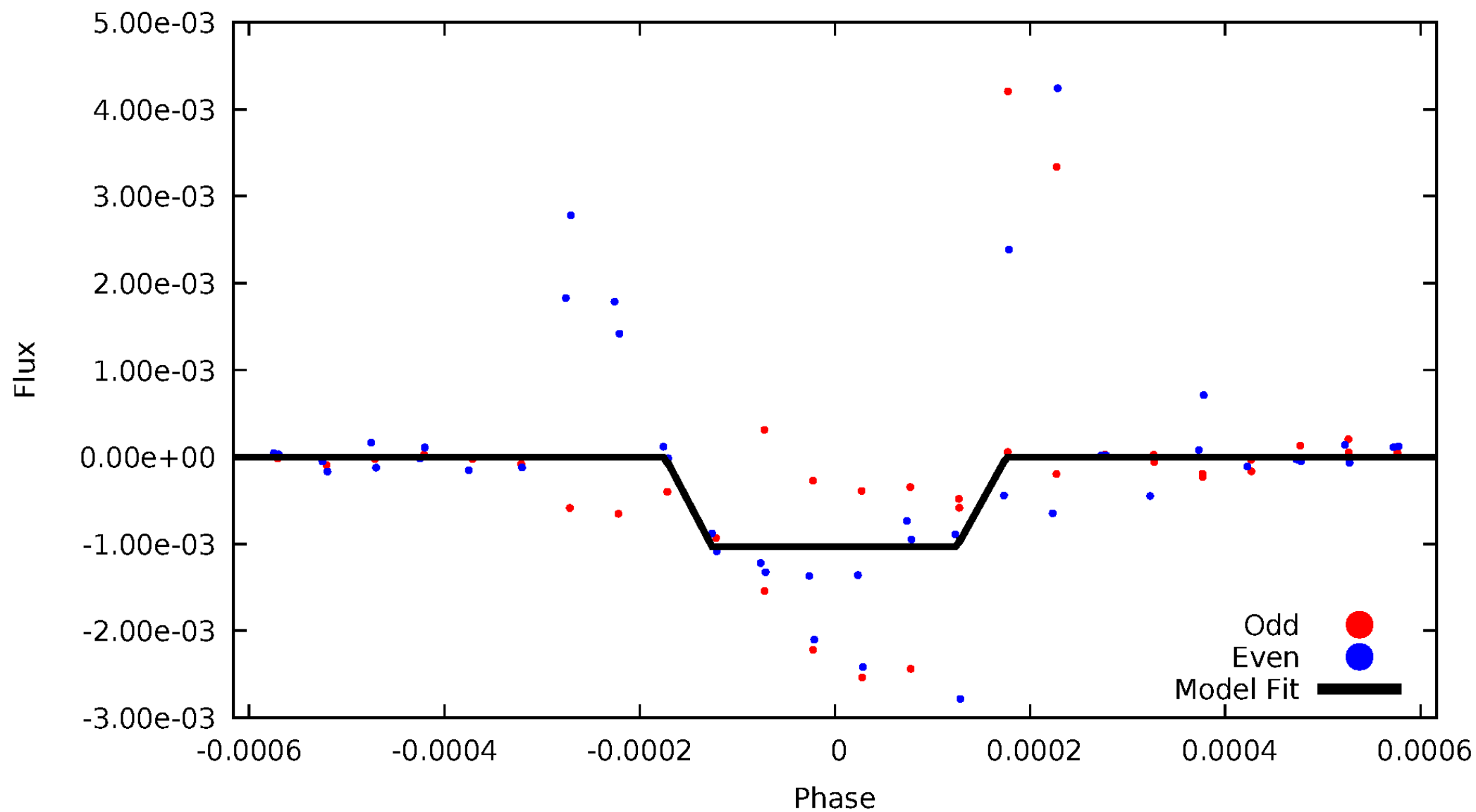
DV Odd/Even

TCE 008774912-06



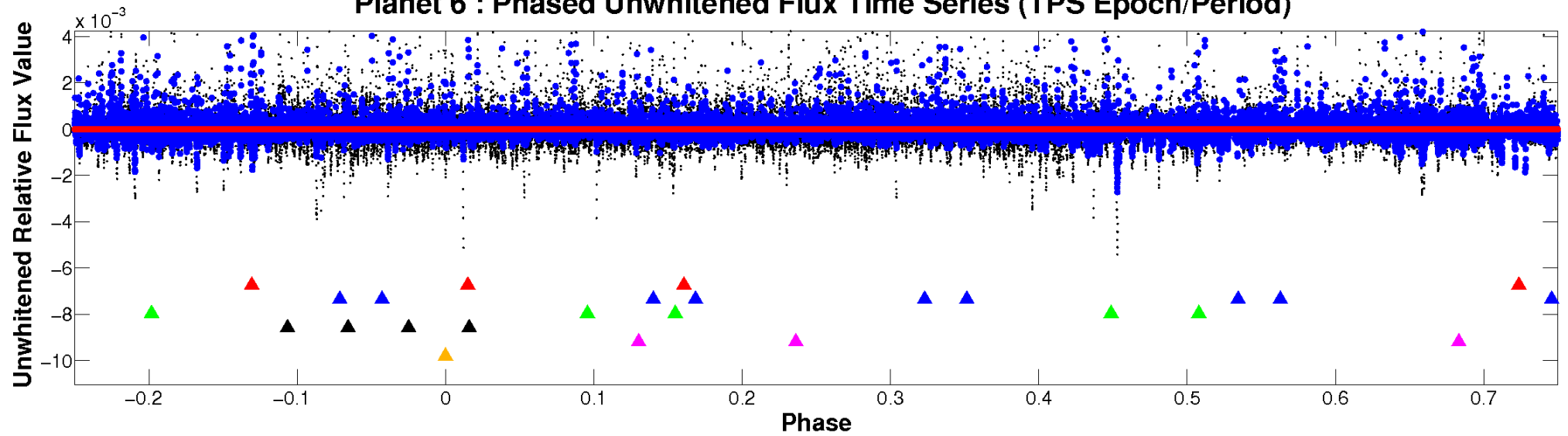
ALT Odd/Even

TCE 008774912-06



Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

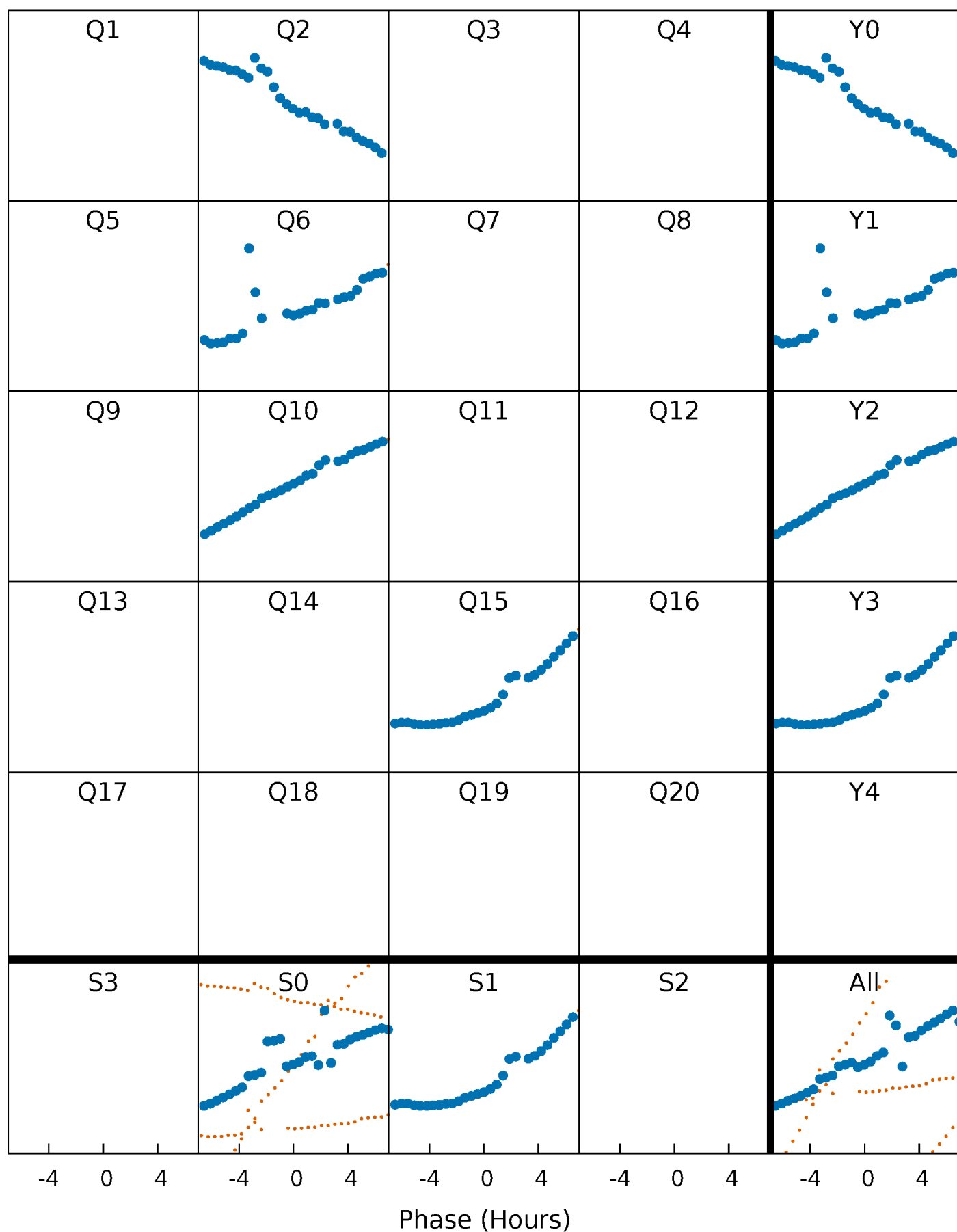


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



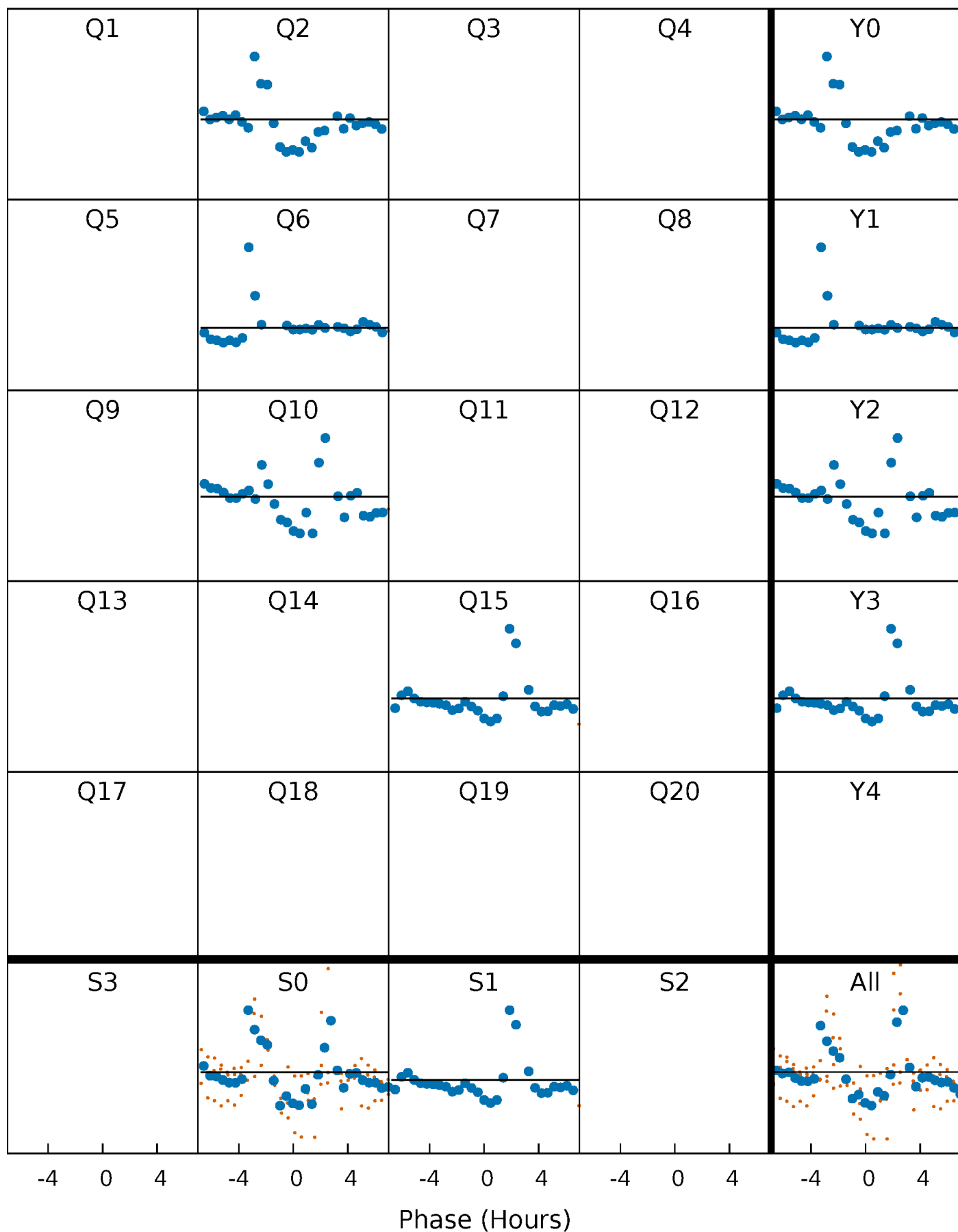
PDC Quarter-Phased Transit Curves

TCE 008774912-06 P=409.672444 Days $T_0=178.814685$ (BKJD)



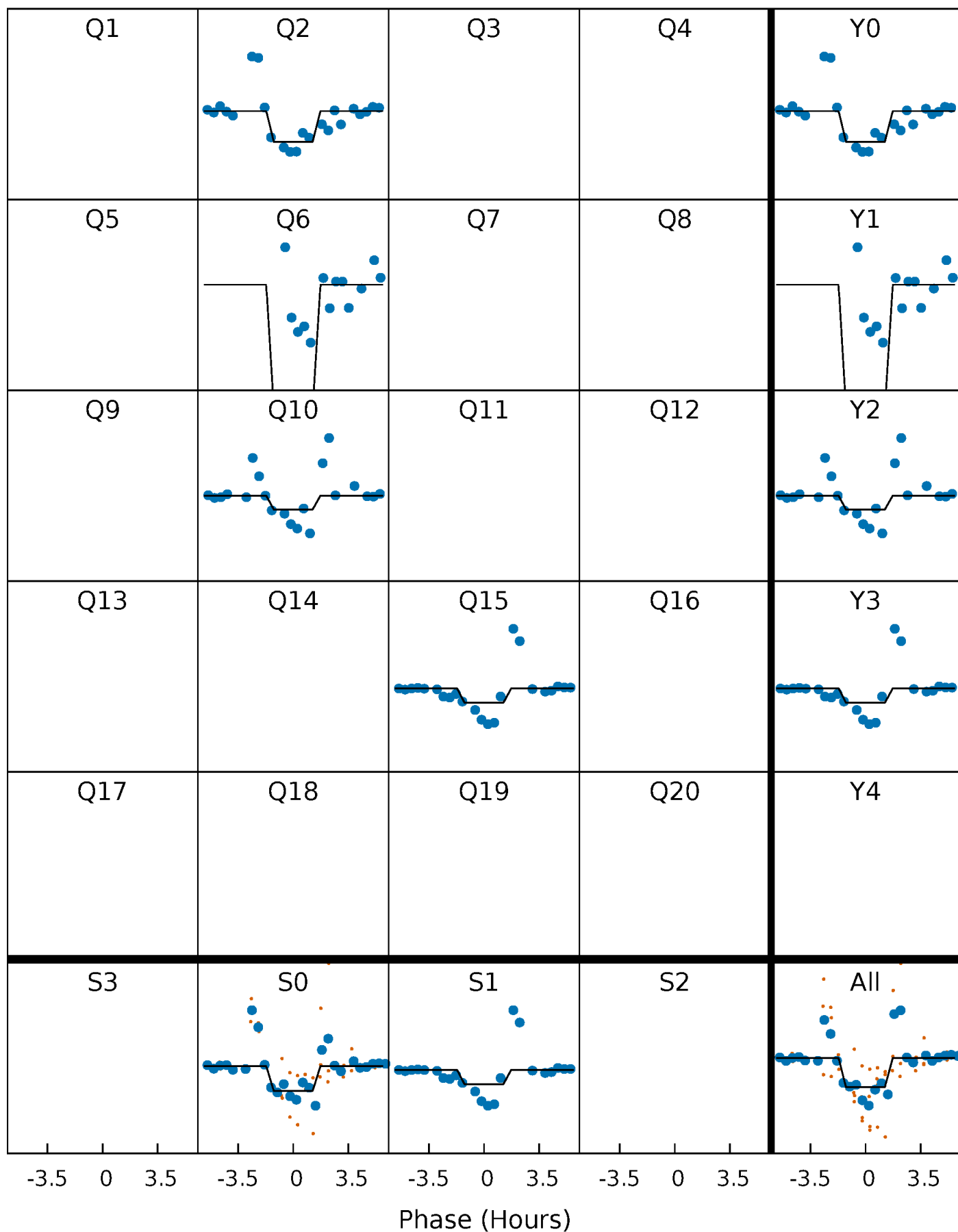
DV Quarter-Phased Transit Curves

TCE 008774912-06 P=409.672444 Days $T_0=178.814685$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

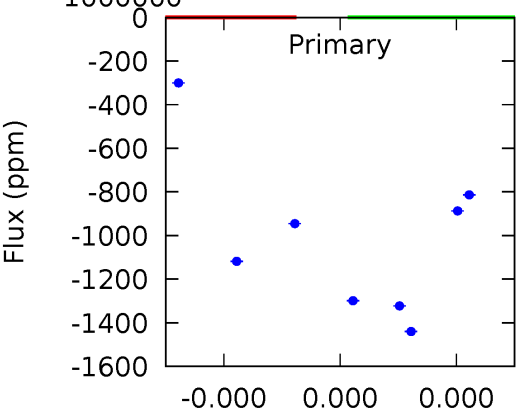
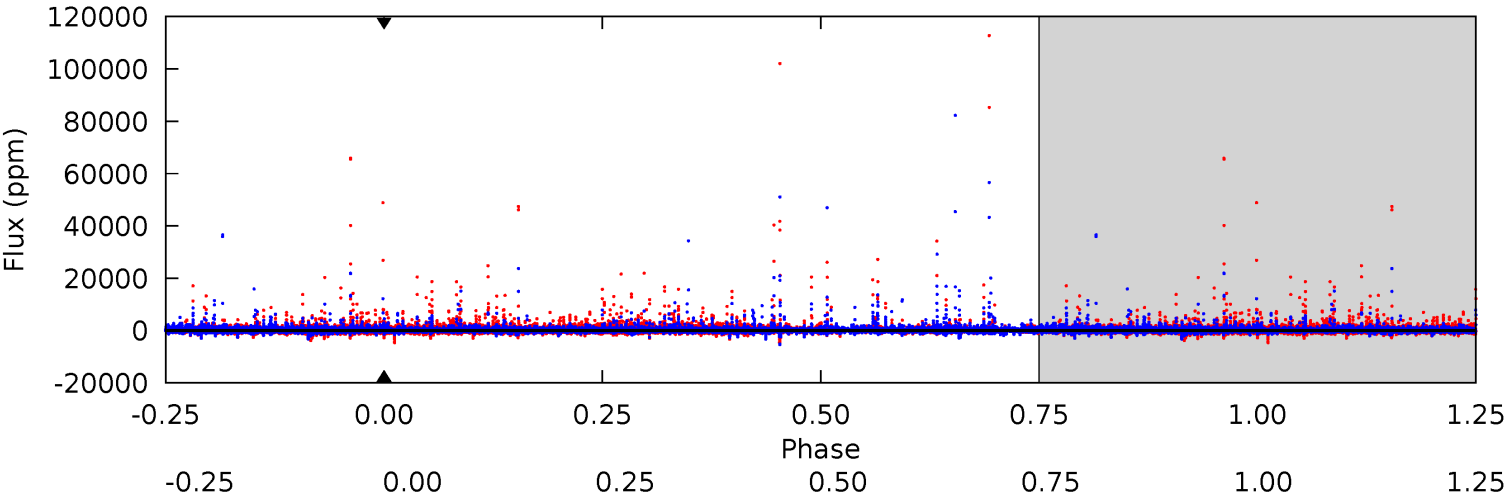
TCE 008774912-06 P=409.672444 Days $T_0=178.828134$ (BKJD)



DV Model-Shift Uniqueness Test

008774912-06, P = 409.672444 Days, E = 178.814685 Days

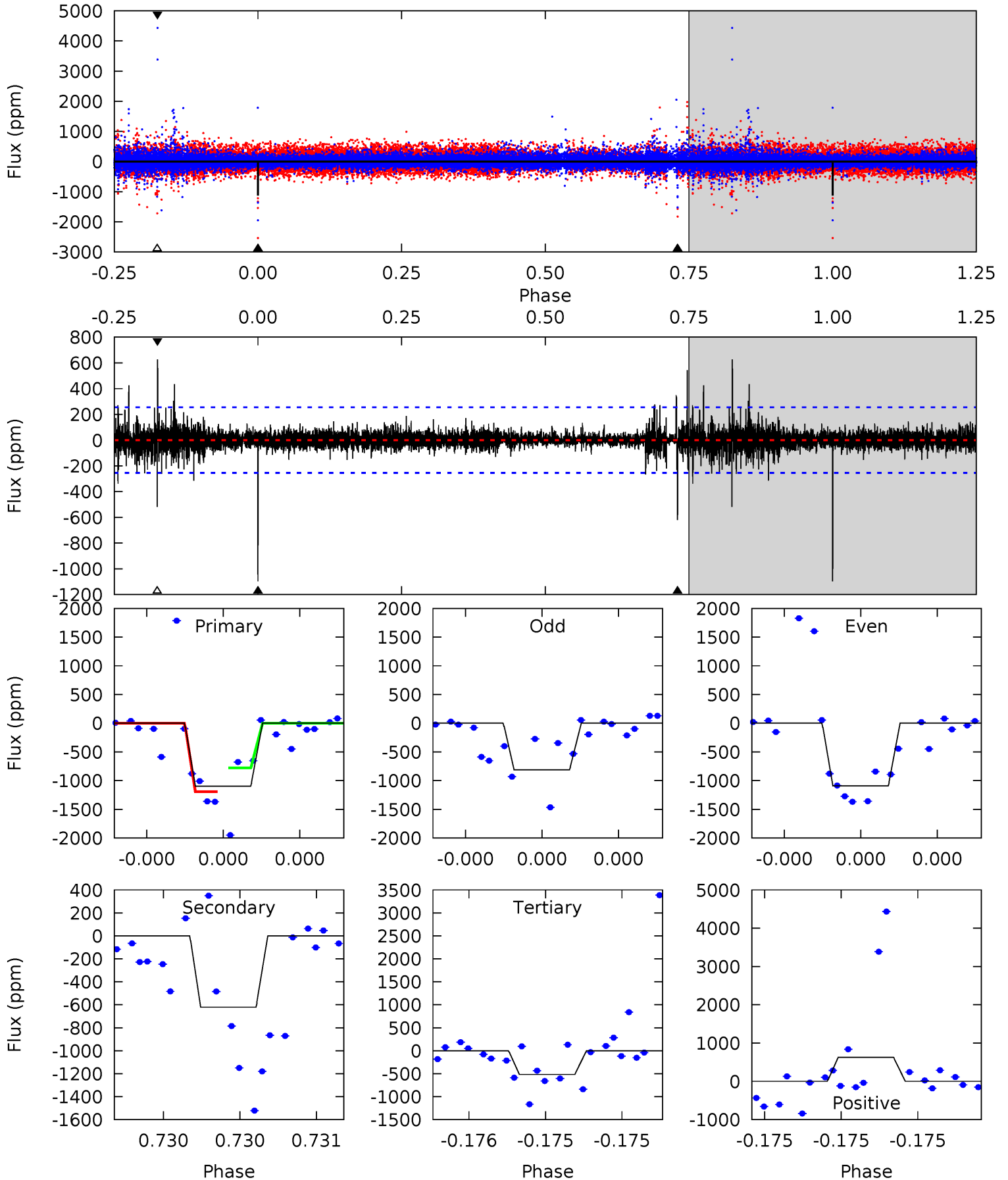
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008774912-06, P = 409.672444 Days, E = 178.828134 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.3	13.8	11.5	13.9	5.64	3.58	1.01	12.8	10.4	2.28	-0.13	2.47	0.86	0.36	0



Stellar Parameters For KIC 008774912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4748^{+143}_{-107}	$2.792^{+0.413}_{-0.337}$	$-0.240^{+0.300}_{-0.200}$	$6.264^{+4.091}_{-2.203}$	$0.886^{+0.432}_{-0.023}$	$0.005^{+0.016}_{-0.003}$
	+3%/-2%	+15%/-12%	+125%/-83%	+65%/-35%	+49%/-3%	+319%/-67%
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 008774912-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$55.19^{+58.18}_{-38.94}$	712^{+111}_{-80}	-4107^{+16620}_{-9802}	$-630.254^{+36611.430}_{-49068.151}$
Alt.	-621 ± 45	$53.95^{+71.40}_{-37.46}$	717^{+114}_{-84}	3209^{+1605}_{-586}	136^{+1389}_{-110}

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

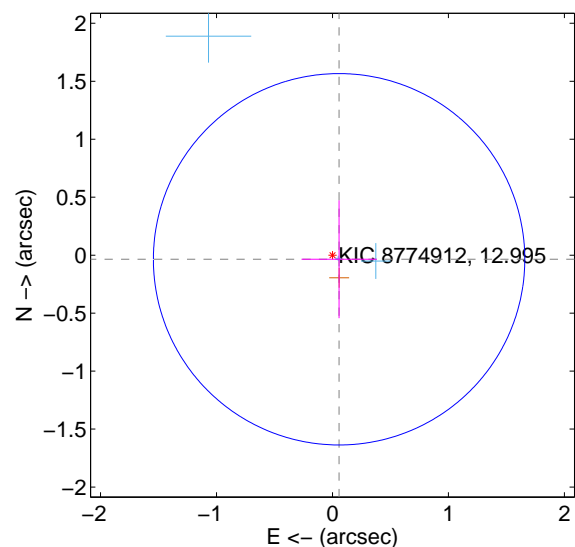
Supplemental centroid analysis for 008774912-06. Kepler magnitude: 12.99. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

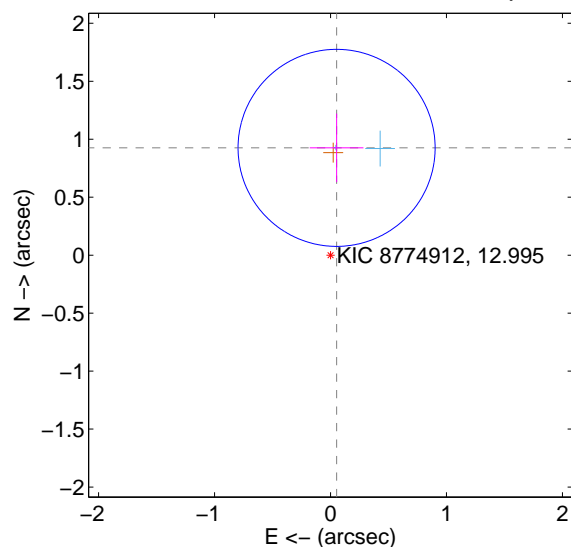
The direct PRF centroid is offset from the target star catalog position by about 0.96 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.067 ± 0.534	0.13	-0.057 ± 0.324	-0.035 ± 0.508
PRF-fit source offset from KIC position	0.927 ± 0.283	3.27	-0.052 ± 0.232	0.926 ± 0.295
photometric centroid source offset	0.67 ± 0.36	1.87	-0.10 ± 0.44	0.66 ± 0.35

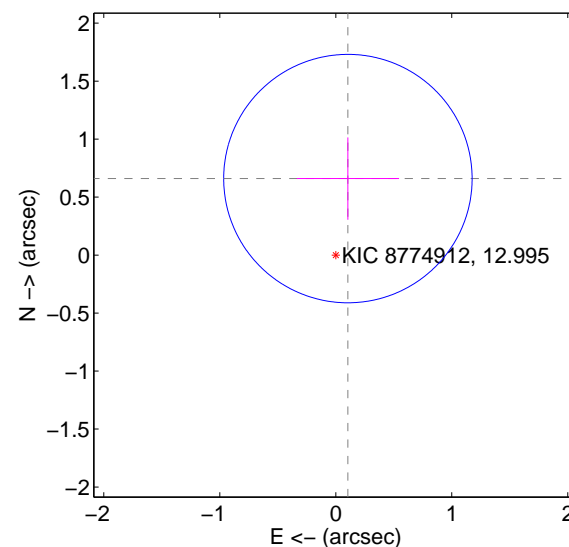
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

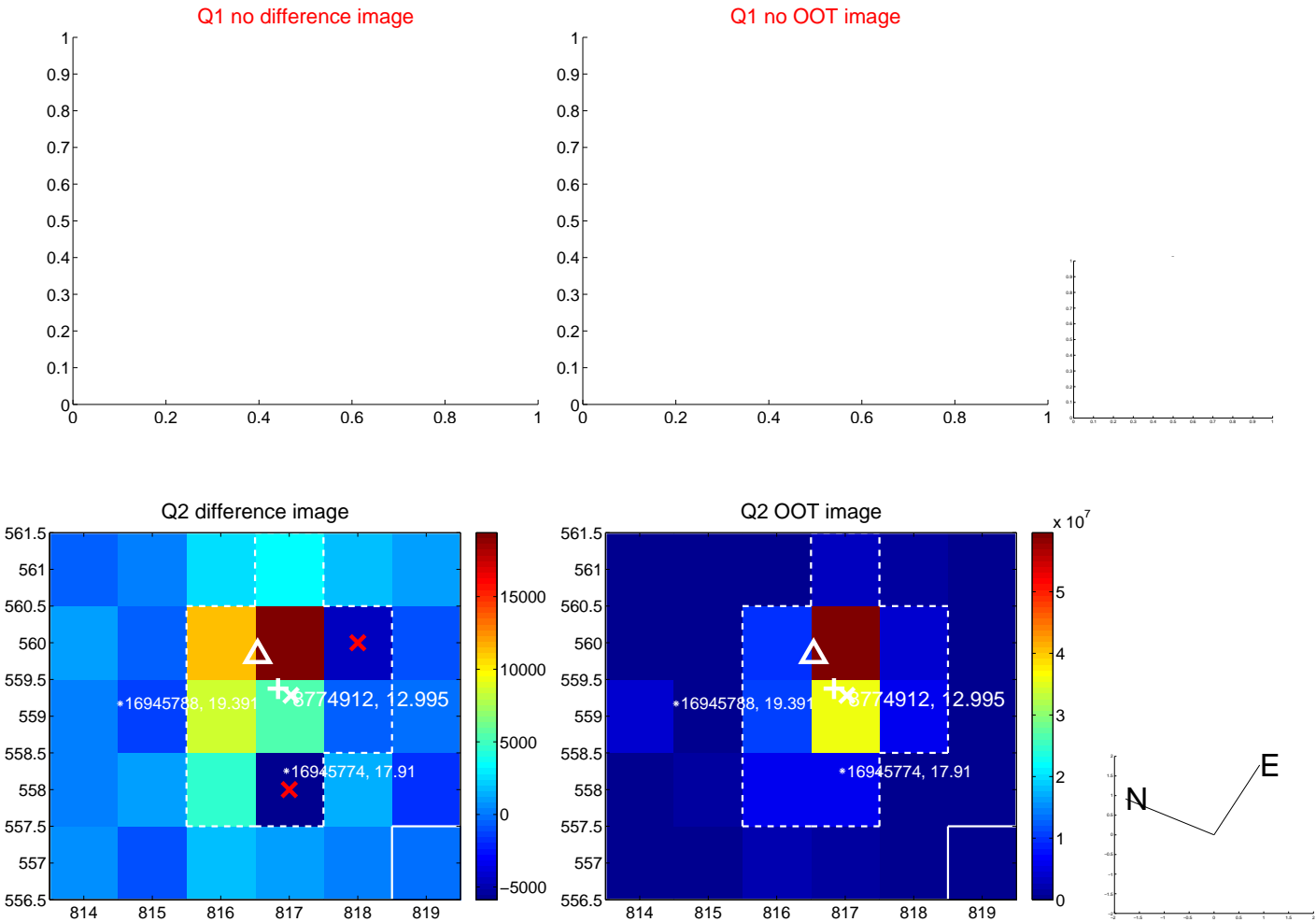


offset from photometric centroids

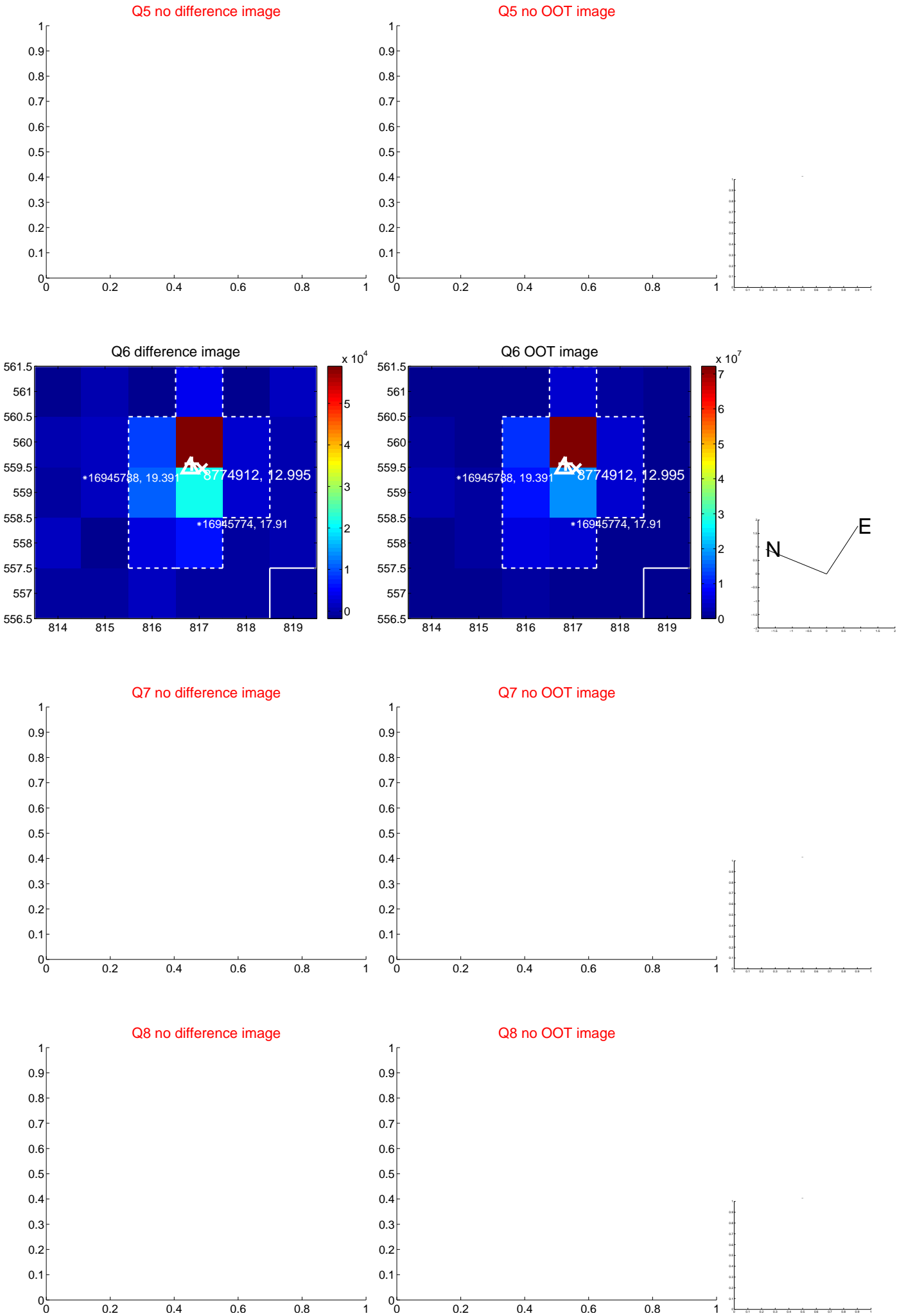


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

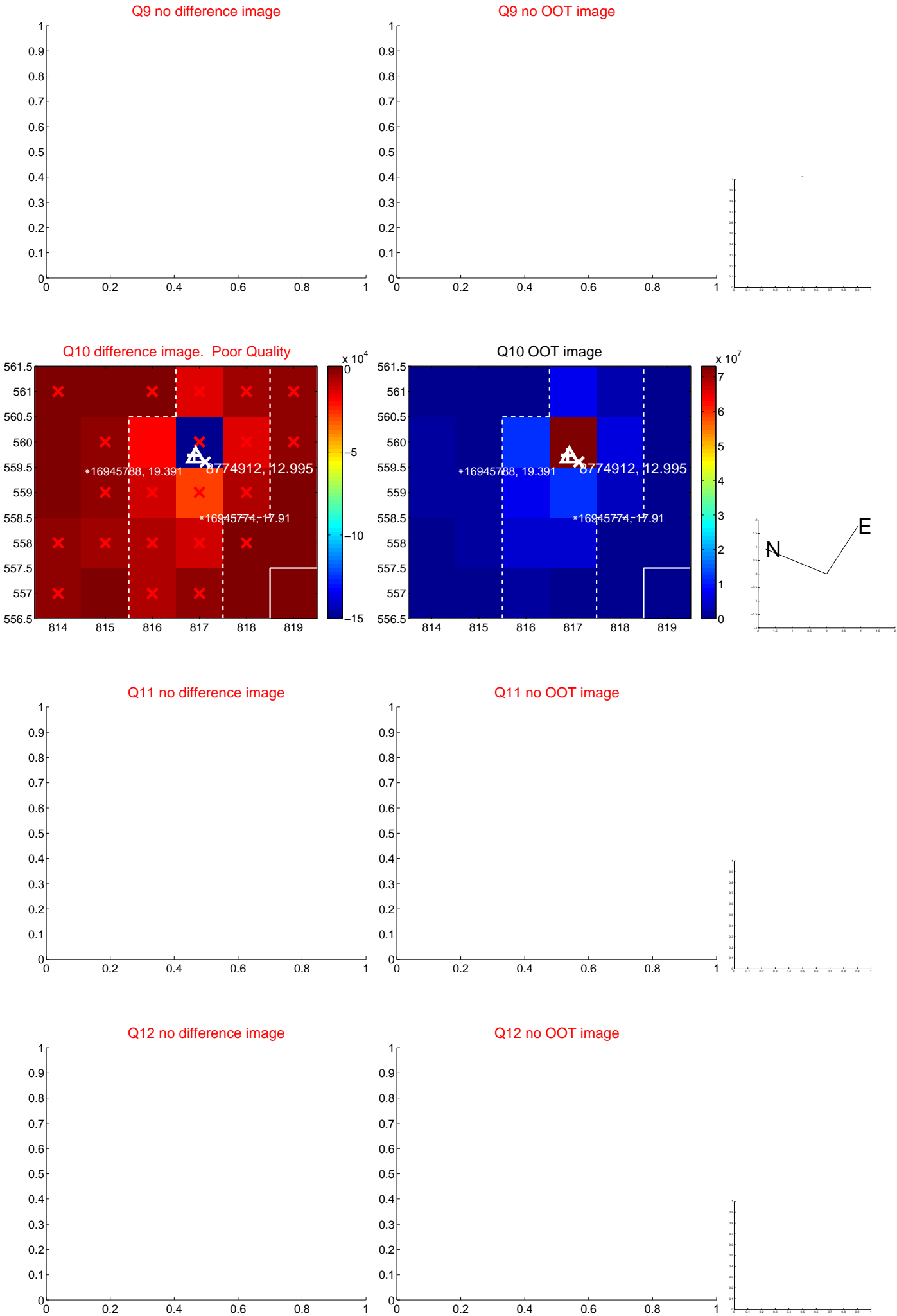
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



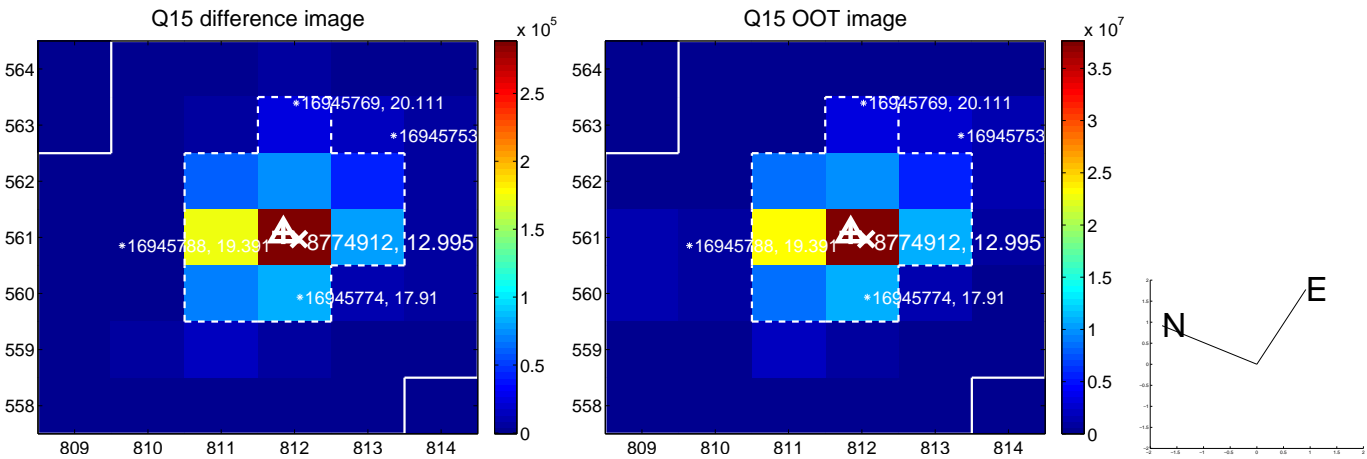
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



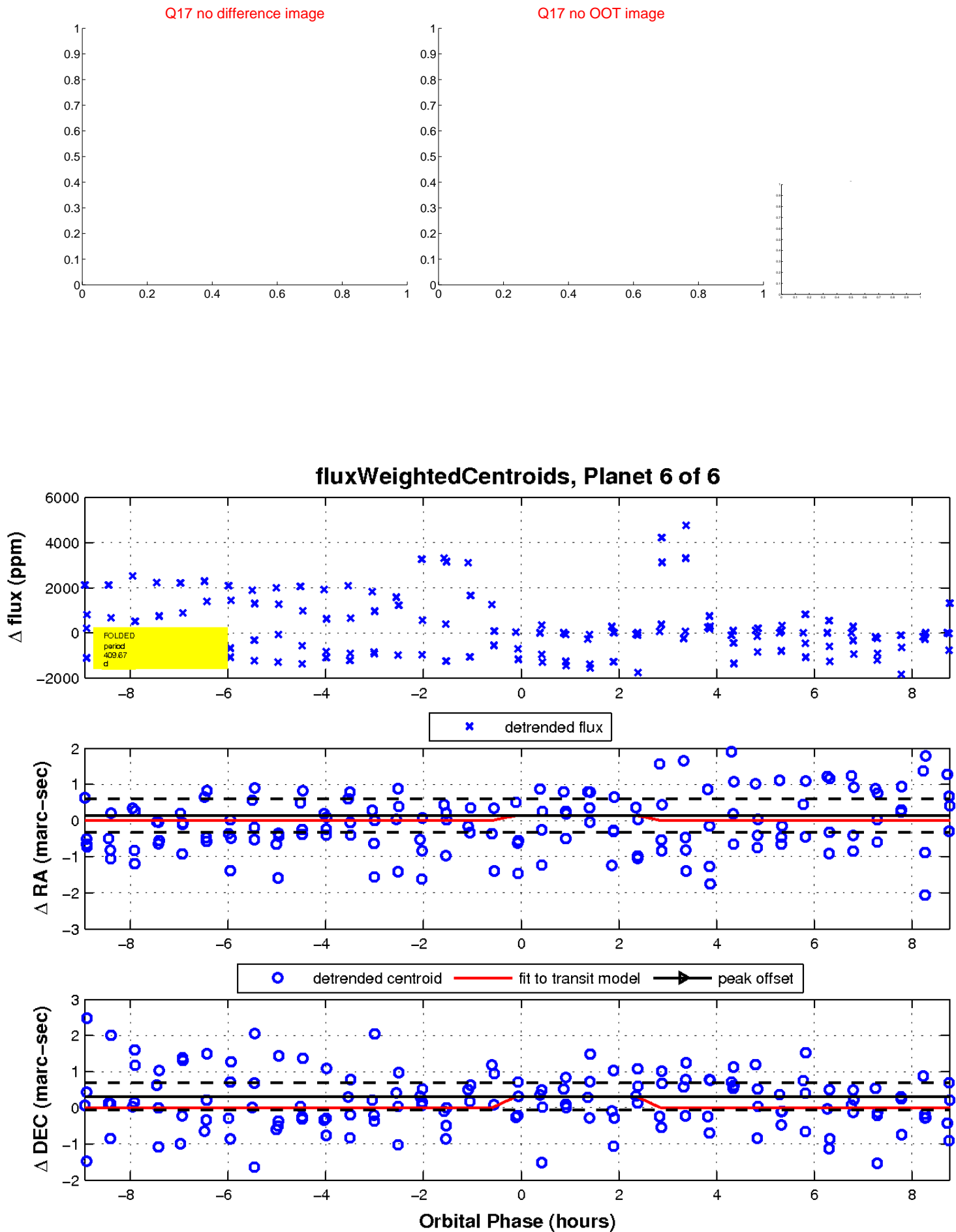
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

