

KIC 004067894

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})
004067894-01	OBS	No	389.695718	312.777131	4737.0	14.588	11.1	10.5	0.29	3360	2.00	0.02
004067894-02	OBS	No	256.424130	325.851712	3055.1	10.443	12.5	8.0	0.29	3360	1.81	0.04
004067894-03	OBS	No	311.695528	323.319786	3501.1	2.680	9.5	7.5	0.29	3360	1.87	0.03
004067894-04	OBS	No	211.733703	151.226575	2653.8	5.142	13.5	6.7	0.29	3360	1.74	0.05
004067894-05	OBS	No	601.049795	177.351041	2941.3	5.791	11.5	6.2	0.29	3360	1.97	0.01
004067894-06	OBS	No	465.931432	247.261542	2435.3	14.542	9.5	5.1	0.29	3360	1.40	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004067894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
004067894-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004067894-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004067894-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-06	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

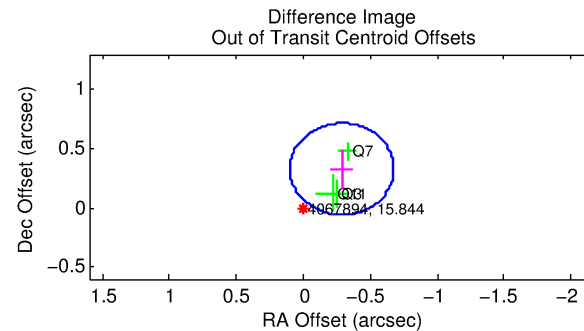
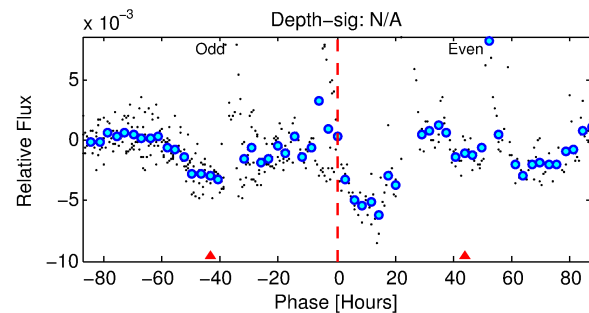
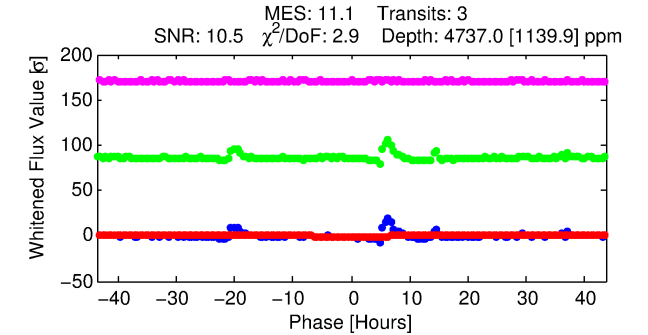
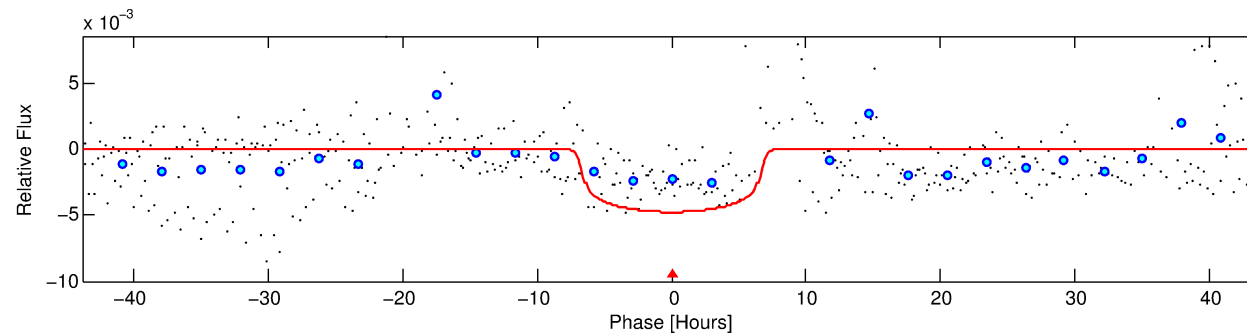
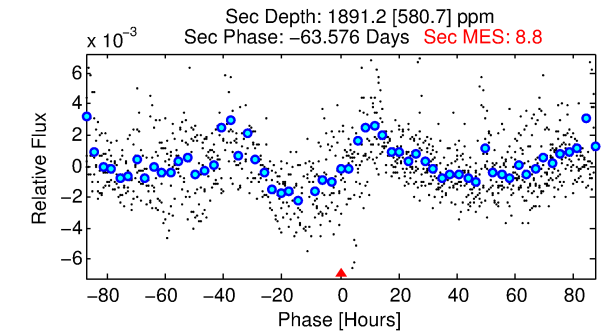
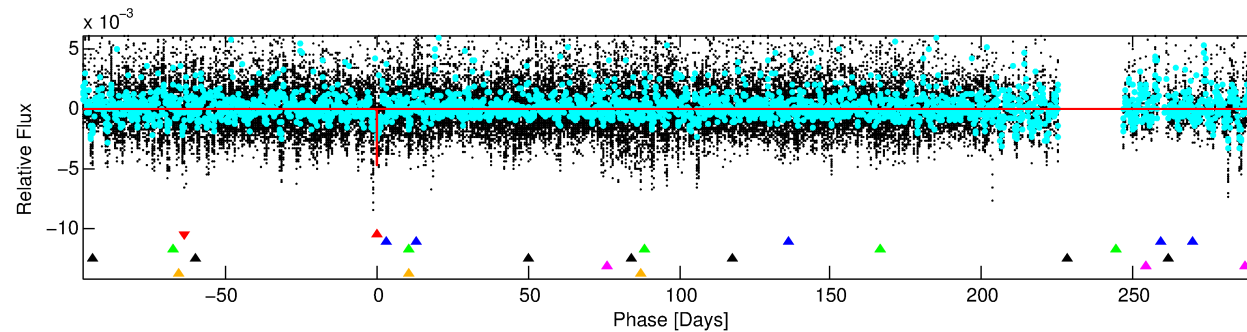
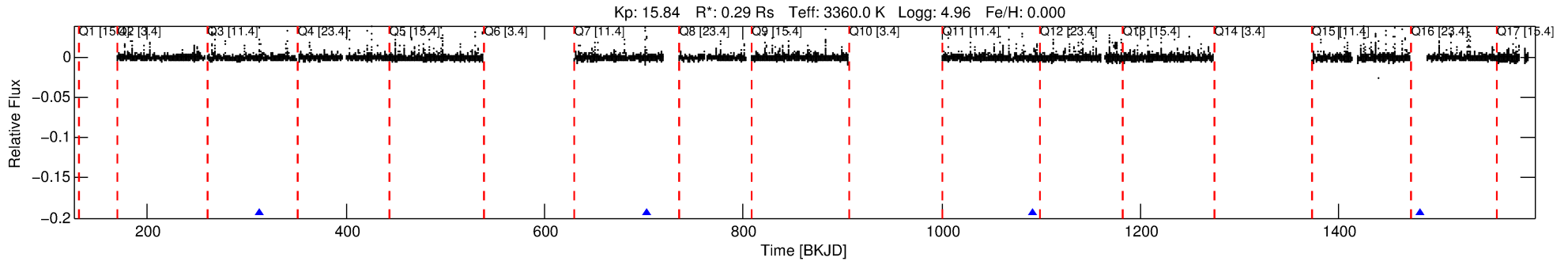
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004067894-01

No Significant Match Found

DV One-Page Summary

KIC: 4067894 Candidate: 1 of 6 Period: 389.696 d



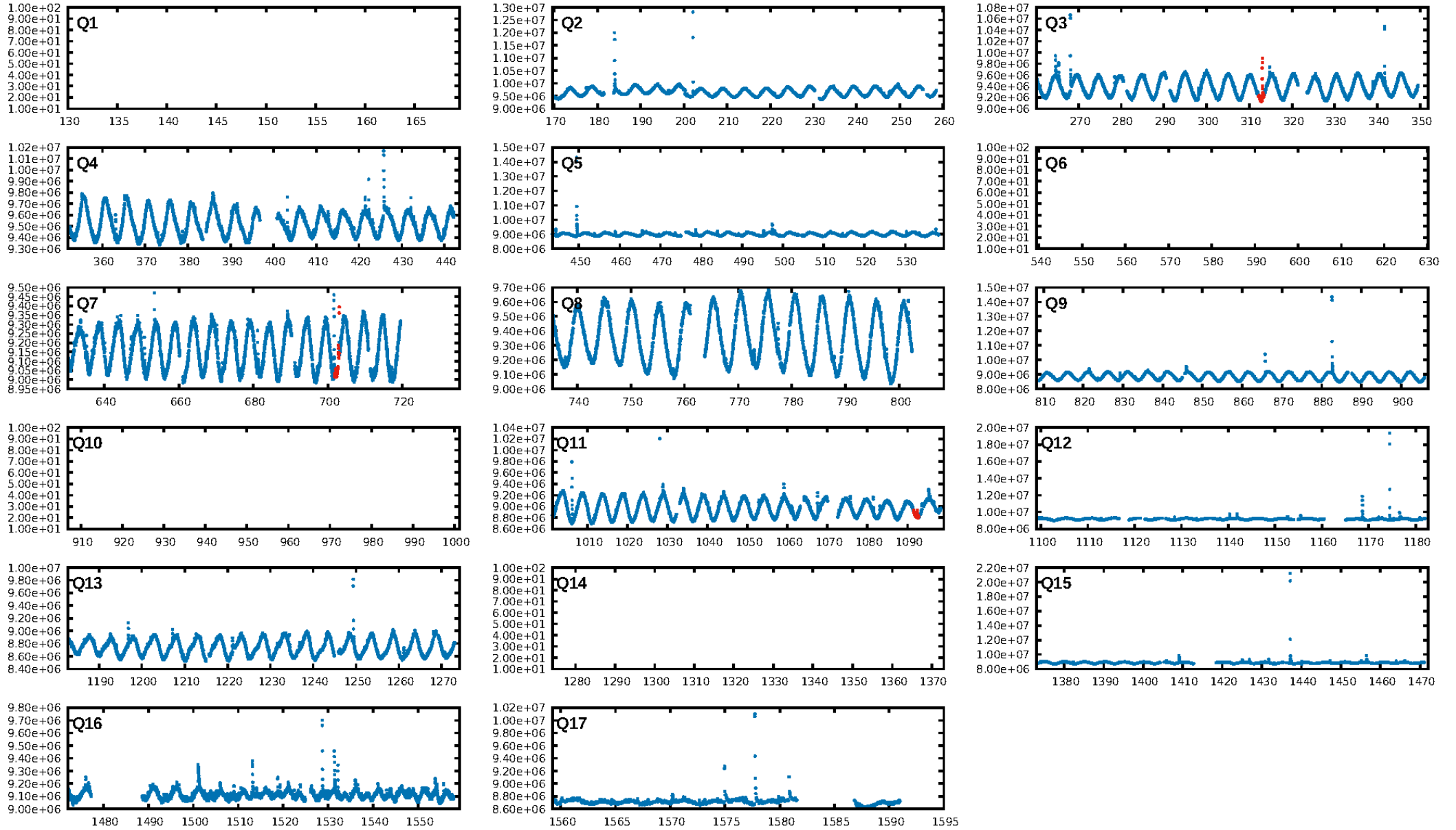
DV Fit Results:

Period = 389.69572 [0.01693] d
Epoch = 312.7771 [0.0212] BKJD
Rp/R* = 0.0639 [0.0141]
a/R* = 196.10 [140.24]
b = 0.46 [1.24]
Seff = 0.02 [0.00]
Teq = 96 [4] K
Rp = 2.00 [0.55] Re
a = 0.6788 [0.0795] AU
Ag = 119880.57 [66688.53] [1.80σ]
Teffp = 2773 [376] K [7.11σ]

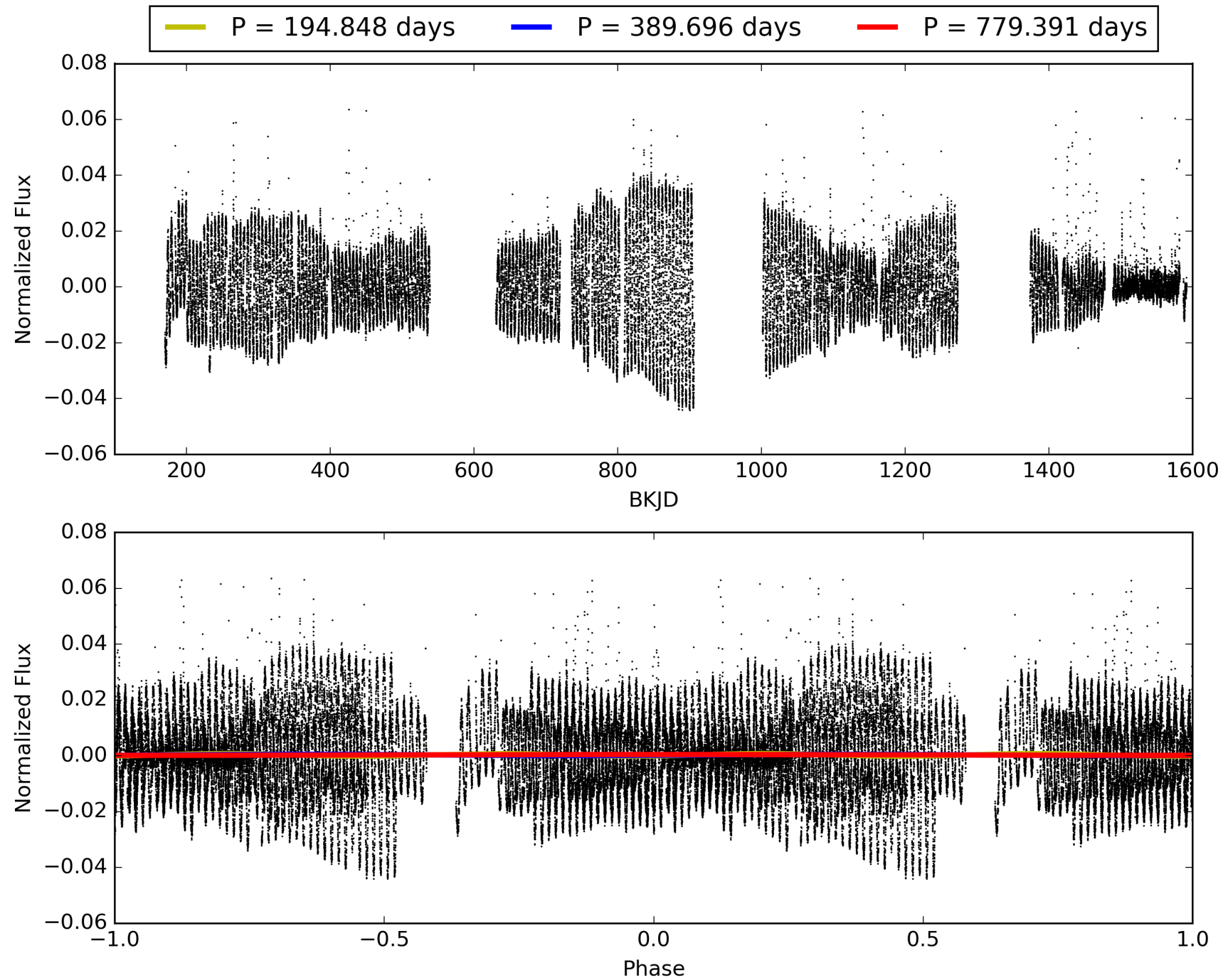
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [126.21σ]
LongPeriod-sig: 100.0% [88.83σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 7.3%
Bootstrap-pfa: 4.72e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9863
Centroid-sig: 0.0%
Centroid-so: 1.221 arcsec [1.96σ]
OotOffset-rm: 0.437 arcsec [3.38σ]
KicOffset-rm: 0.043 arcsec [0.31σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 004067894-01, PDC Light Curves

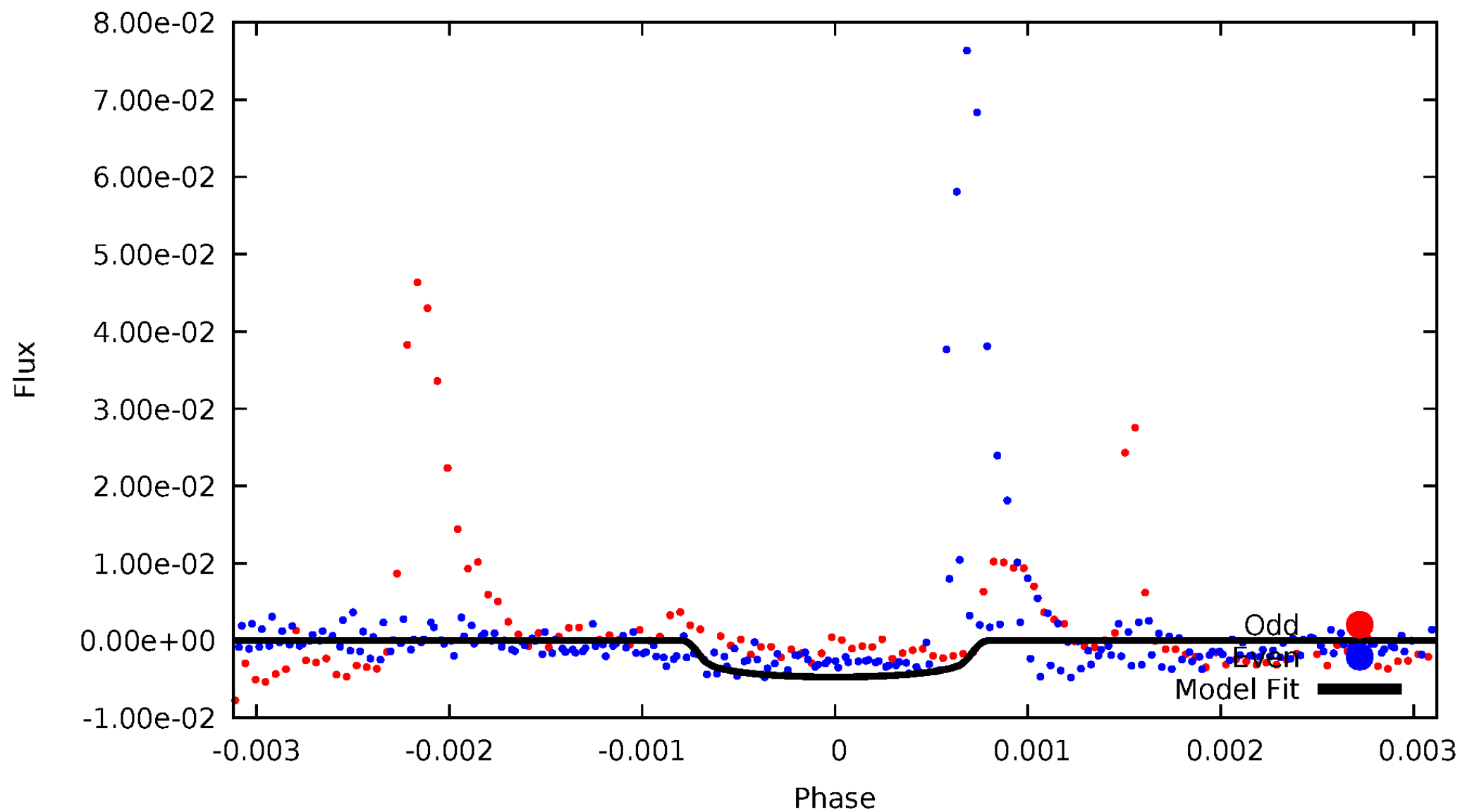


TCE 004067894-01



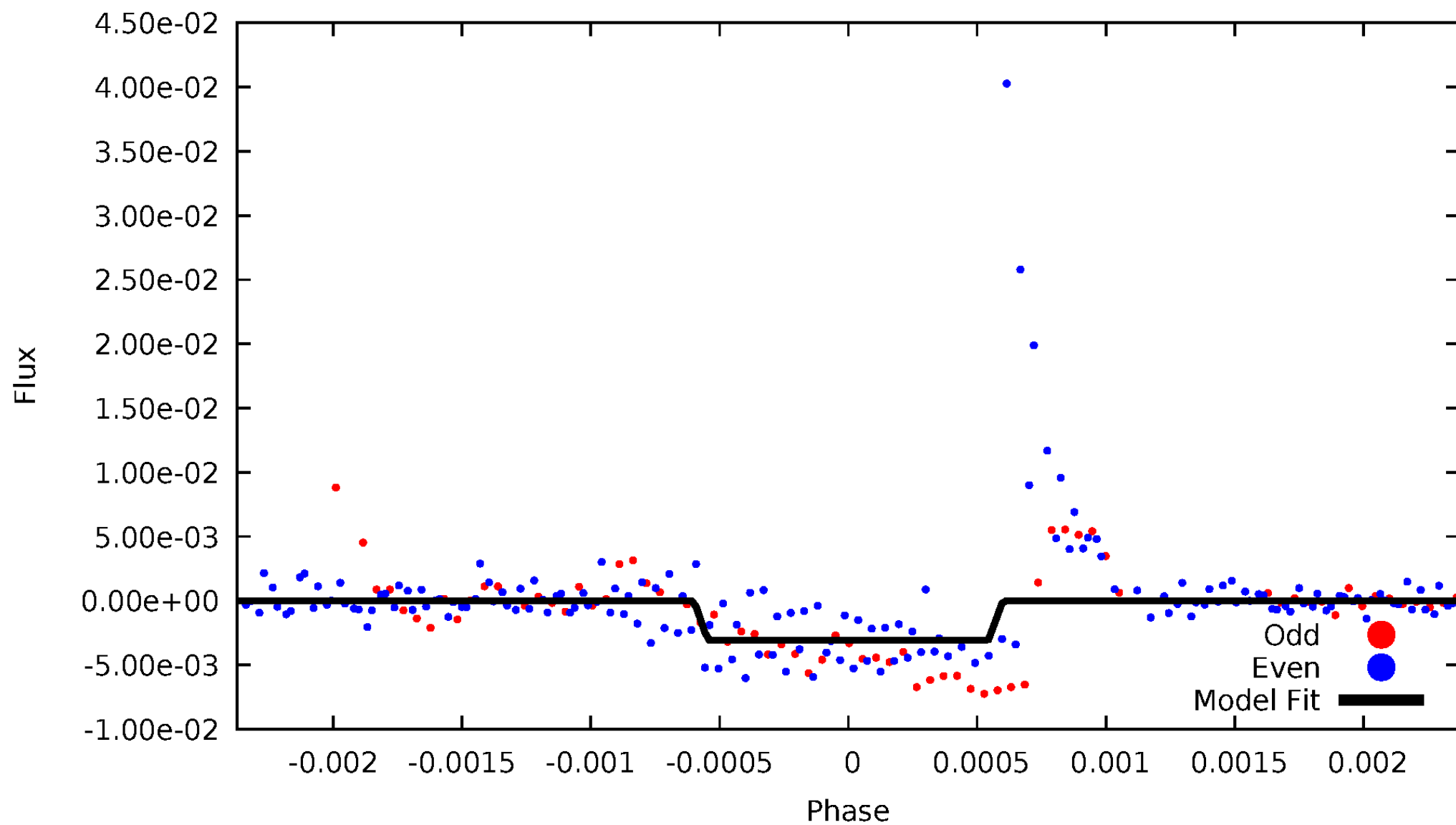
DV Odd/Even

TCE 004067894-01



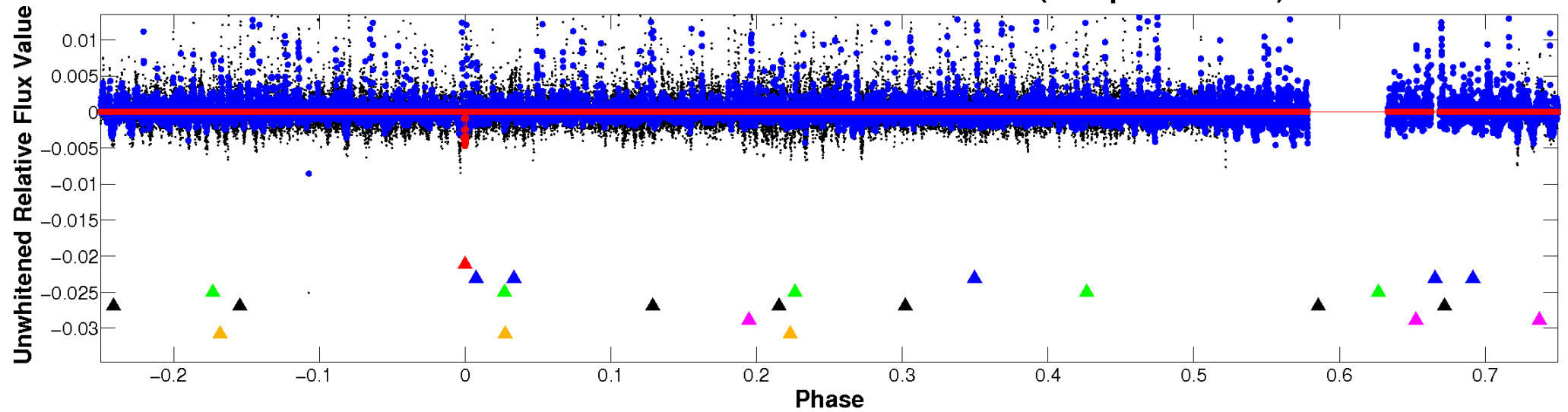
ALT Odd/Even

TCE 004067894-01

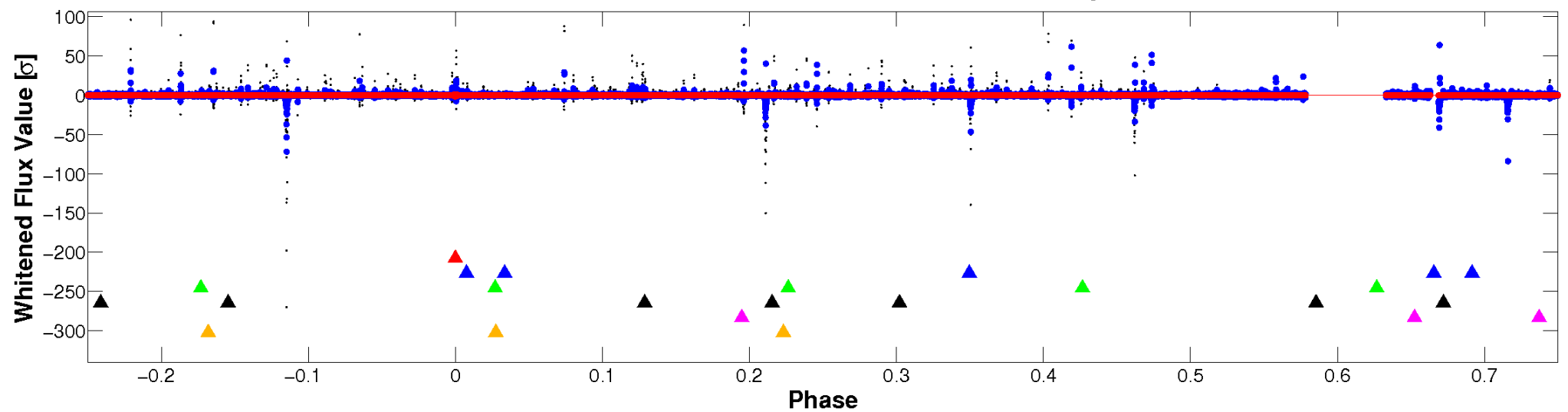


Non-Whitened Vs. Whitened Light Curve

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

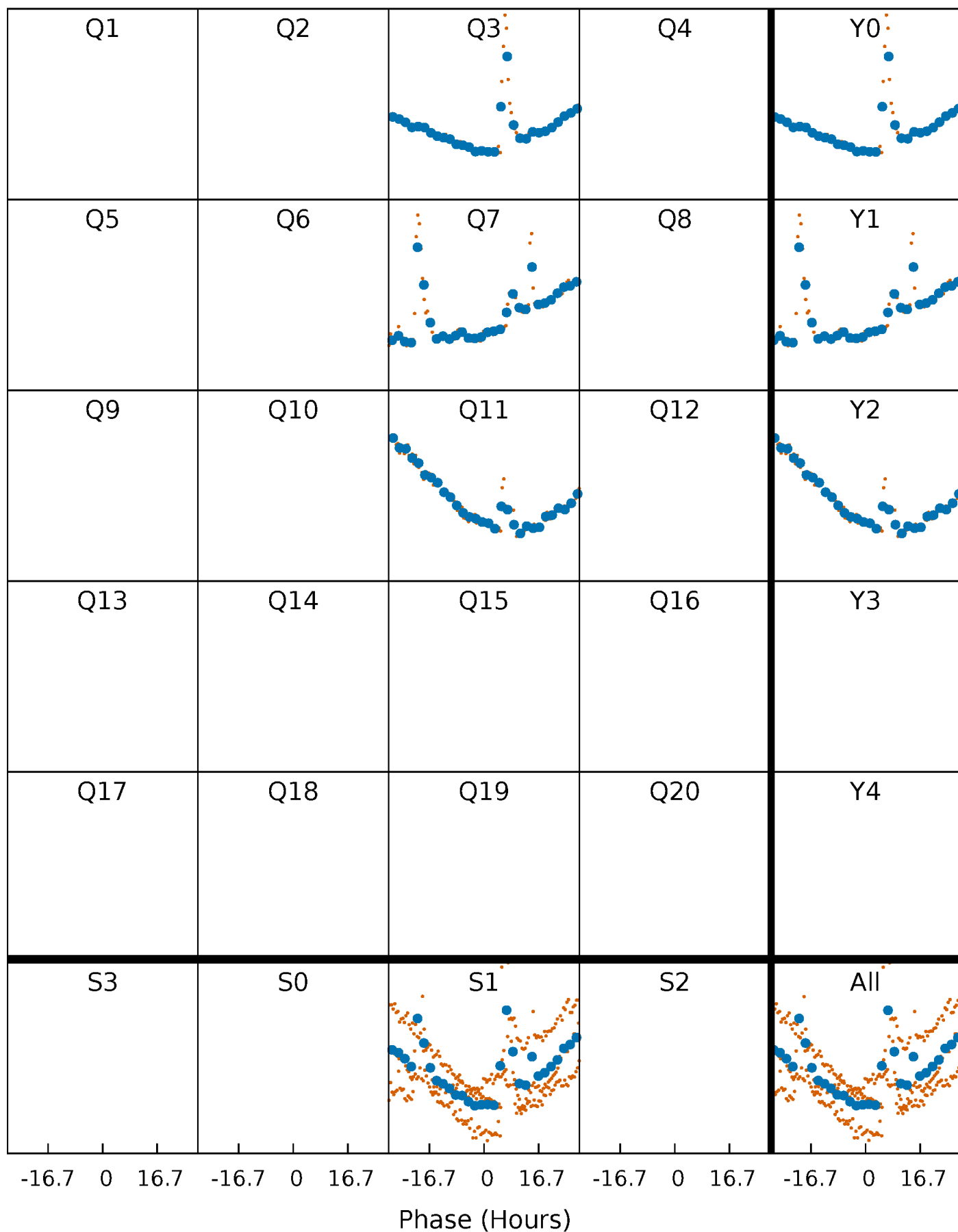


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



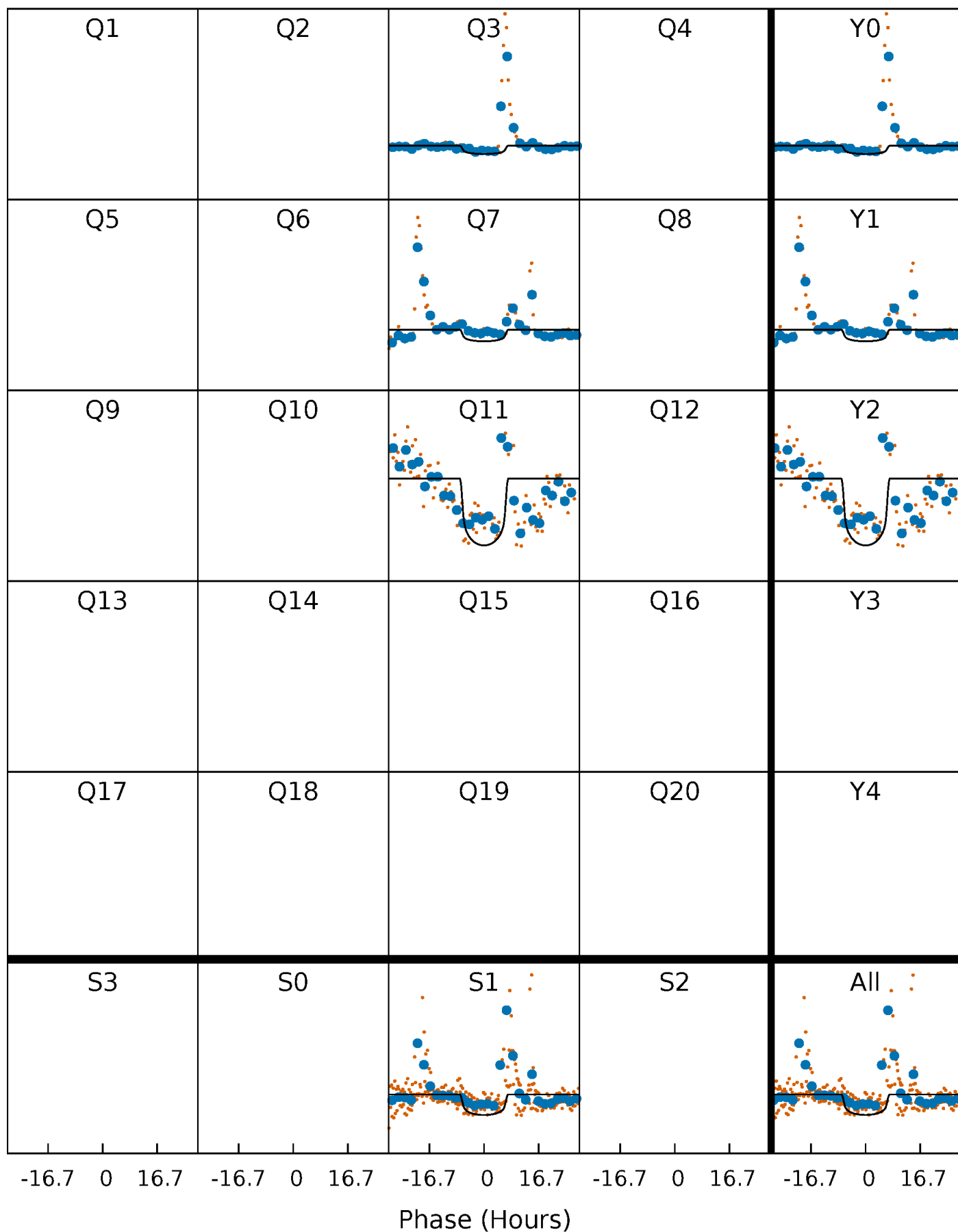
PDC Quarter-Phased Transit Curves

TCE 004067894-01 P=389.695718 Days $T_0=312.777131$ (BKJD)



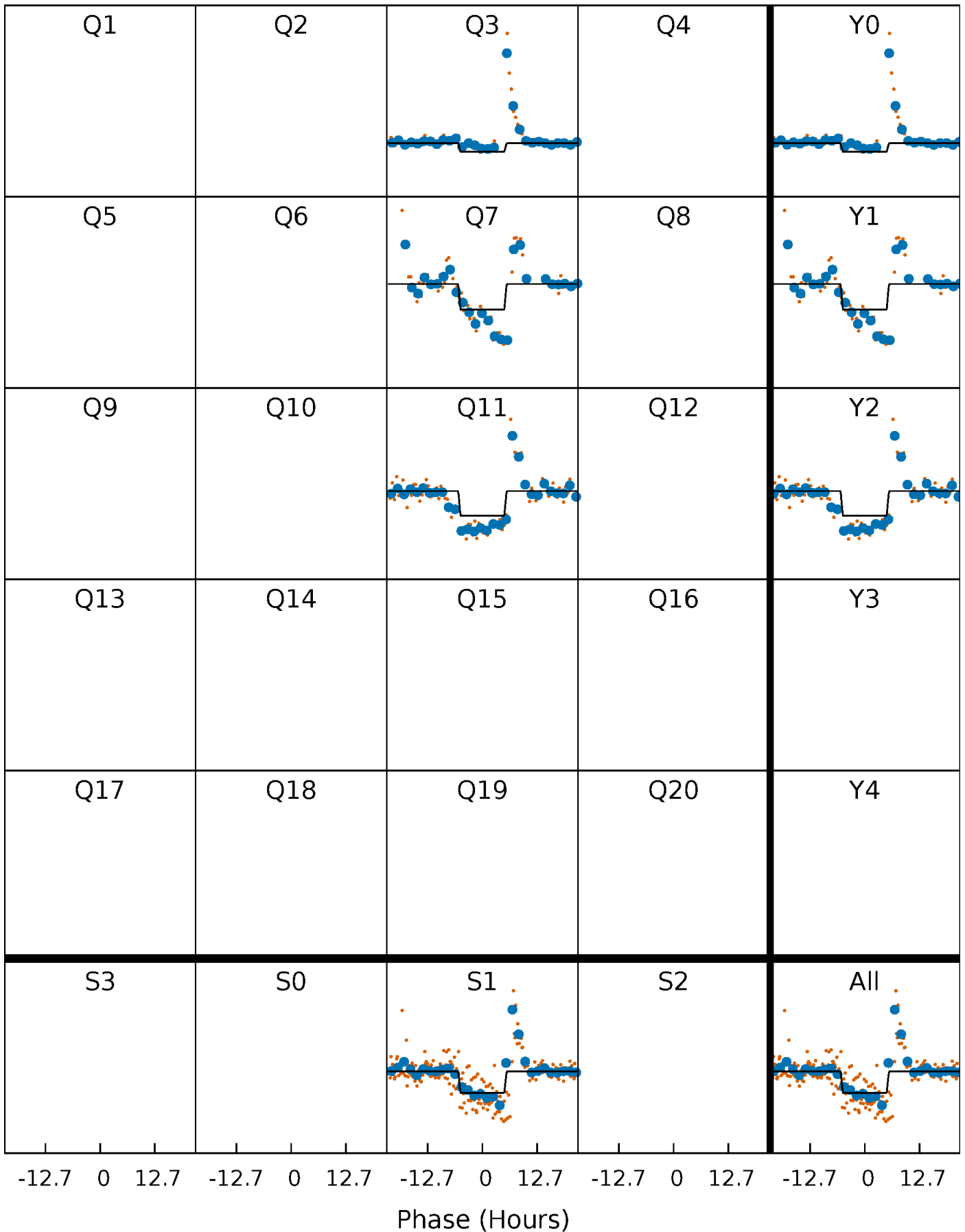
DV Quarter-Phased Transit Curves

TCE 004067894-01 $P=389.695718$ Days $T_0=312.777131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

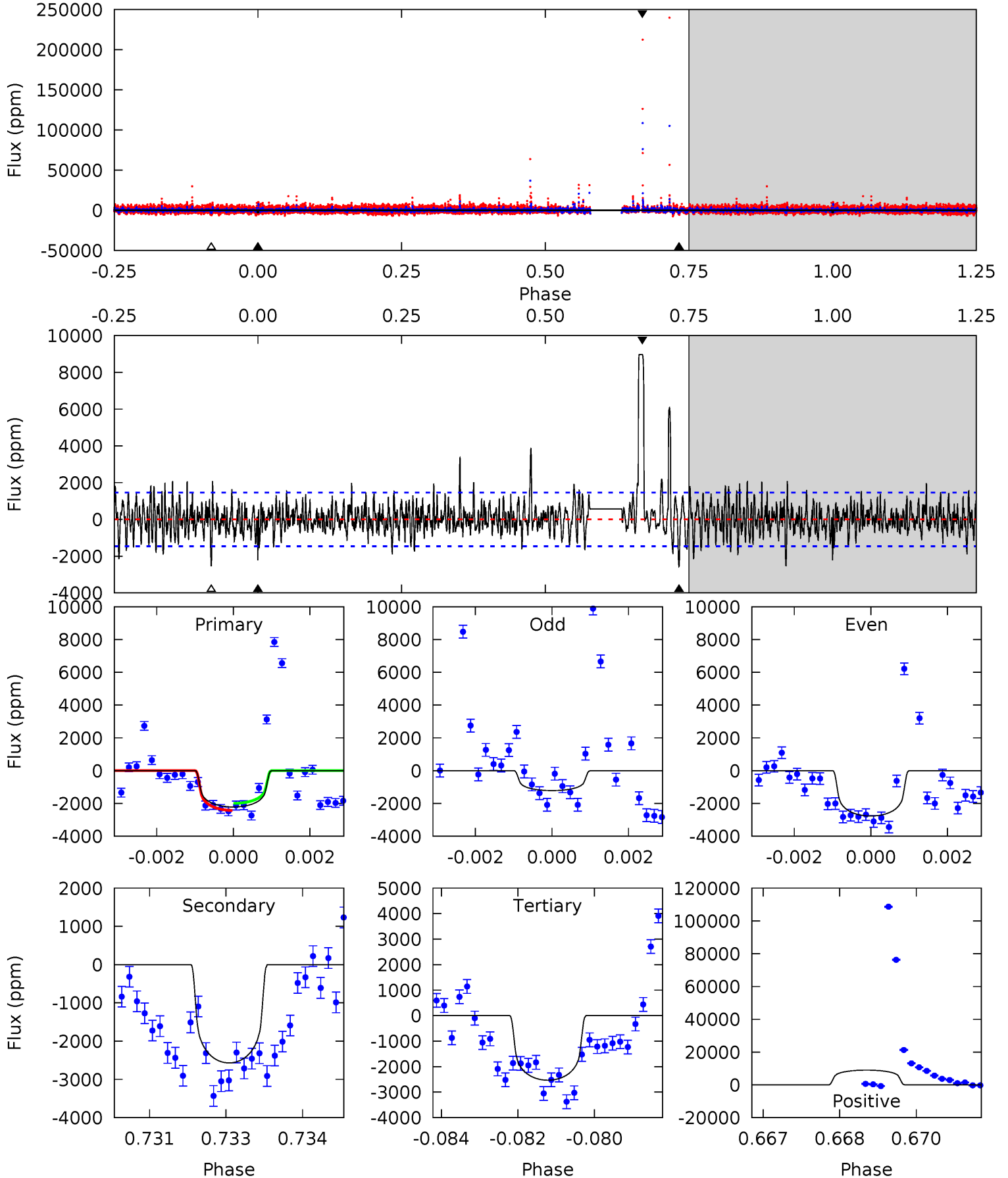
TCE 004067894-01 P=389.640744 Days $T_0=312.844788$ (BKJD)



DV Model-Shift Uniqueness Test

004067894-01, P = 389.695718 Days, E = 312.777131 Days

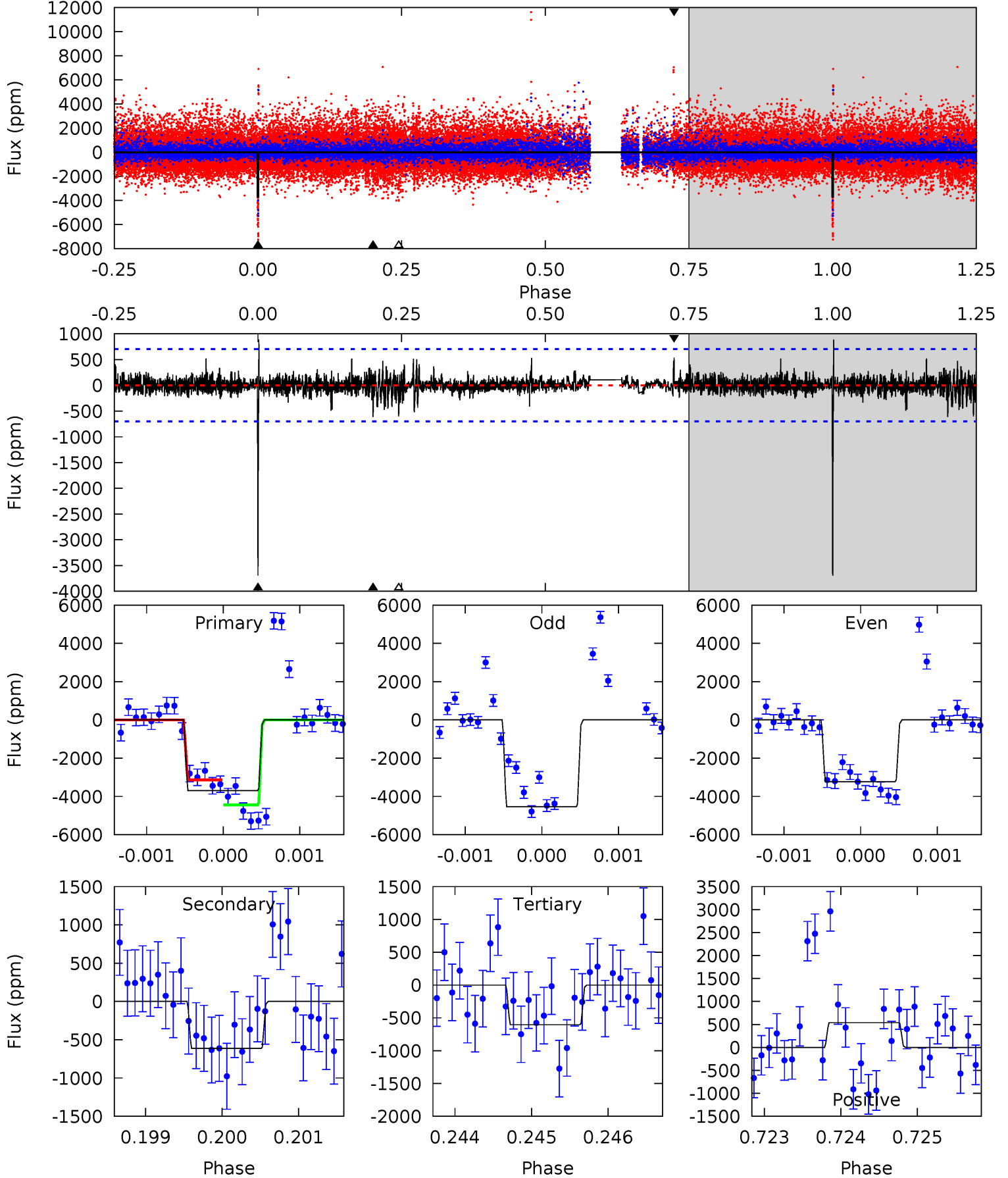
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.13	9.42	9.29	32.9	5.37	3.15	2.83	-1.16	-24.8	0.14	-23.5	1.49	0.24	0.78	0.77



Alt Model-Shift Uniqueness Test

004067894-01, P = 389.640744 Days, E = 312.844788 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.5	4.74	4.66	4.16	5.42	3.25	0.84	23.9	24.4	0.08	0.58	4.48	0.77	0.19	5.05



Stellar Parameters For KIC 004067894

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3360^{+55}_{-50}	$4.961^{+0.055}_{-0.050}$	$0.000^{+0.100}_{-0.100}$	$0.287^{+0.047}_{-0.038}$	$0.274^{+0.057}_{-0.041}$	$16.380^{+4.916}_{-3.772}$
	+2%/-1%	+1%/-1%	+inf%/-inf%	+16%/-13%	+21%/-15%	+30%/-23%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 004067894-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2569 ± 273	$1.98^{+0.50}_{-0.45}$	135^{+4}_{-4}	3144^{+262}_{-186}	$164388^{+116648}_{-58052}$
Alt.	-614 ± 129	$1.77^{+0.46}_{-0.45}$	135^{+4}_{-4}	2663^{+213}_{-160}	49357^{+39820}_{-19251}

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

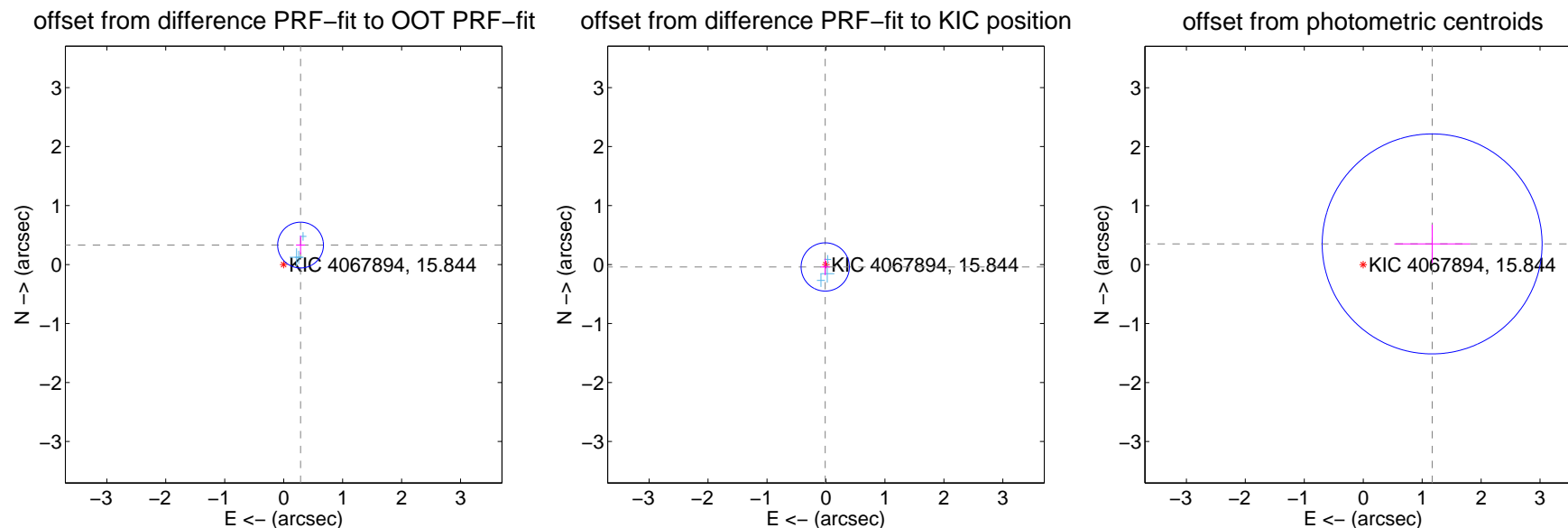
DV Centroid Data

Supplemental centroid analysis for 004067894-01. Kepler magnitude: 15.84. Transit SNR 10.49

There are 3 quarters with good PRF difference image offsets

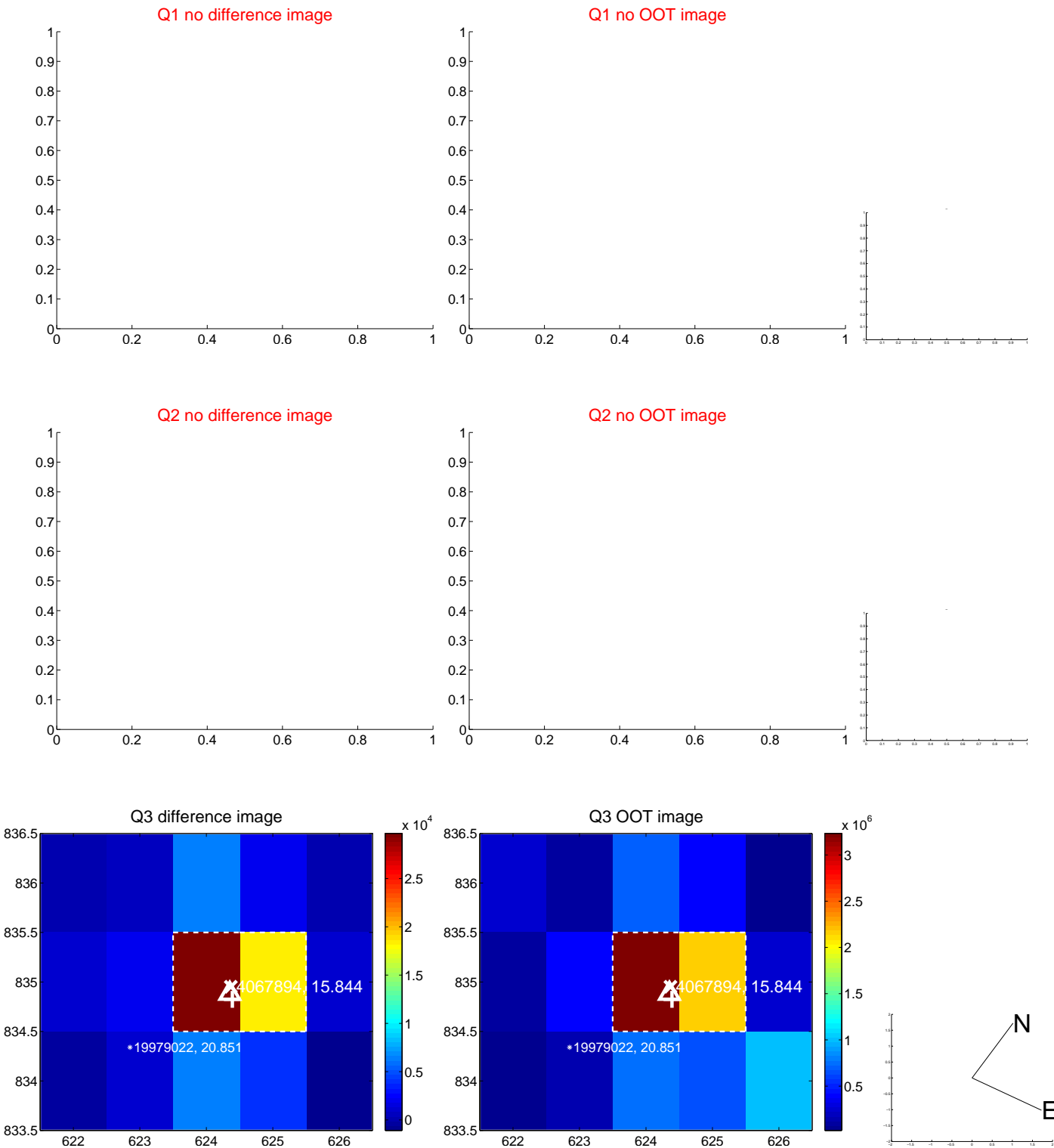
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.437 ± 0.129	3.38	-0.286 ± 0.077	0.330 ± 0.158
PRF-fit source offset from KIC position	0.043 ± 0.136	0.31	0.012 ± 0.079	-0.041 ± 0.141
photometric centroid source offset	1.22 ± 0.62	1.96	-1.17 ± 0.64	0.35 ± 0.33

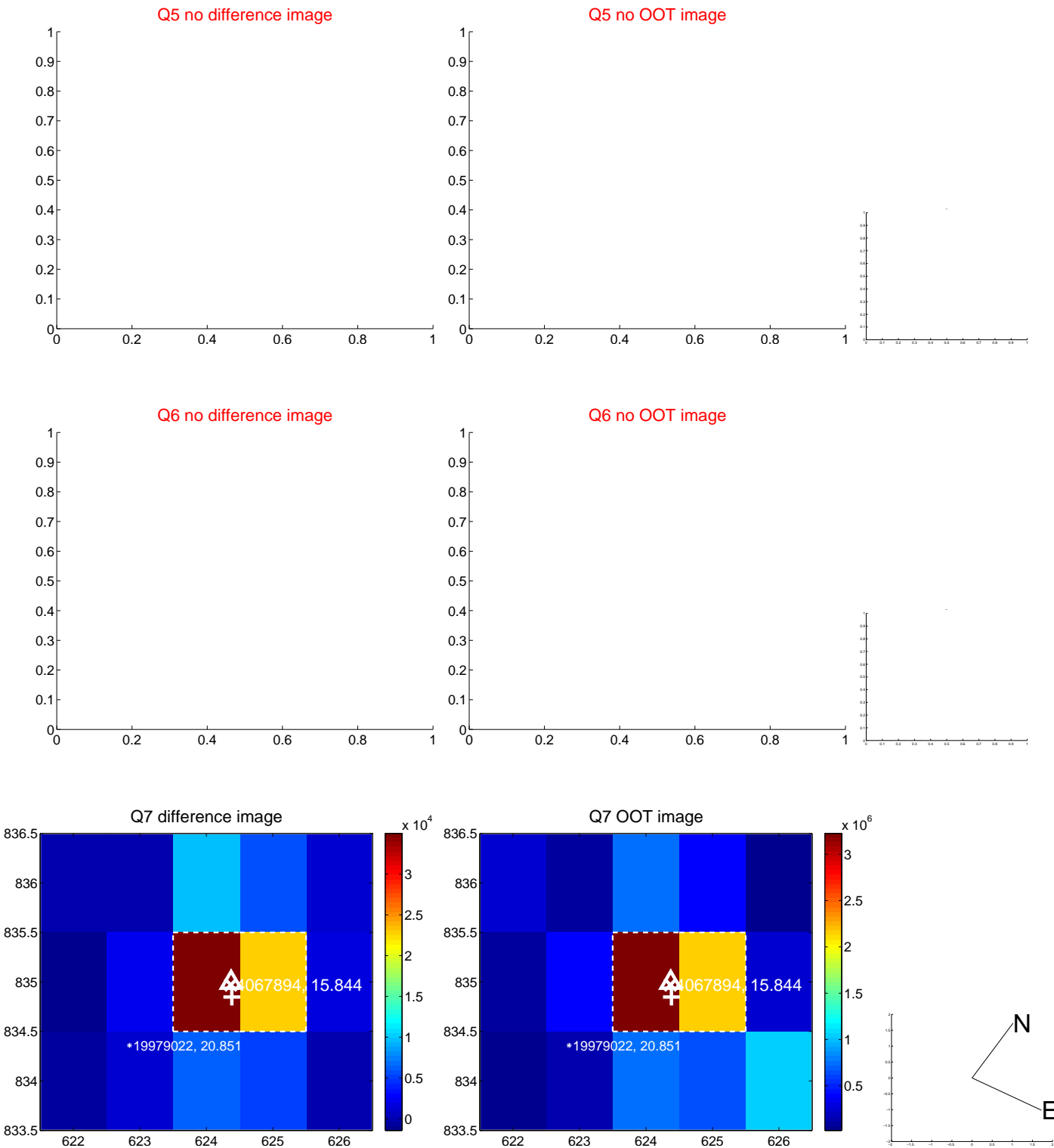


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

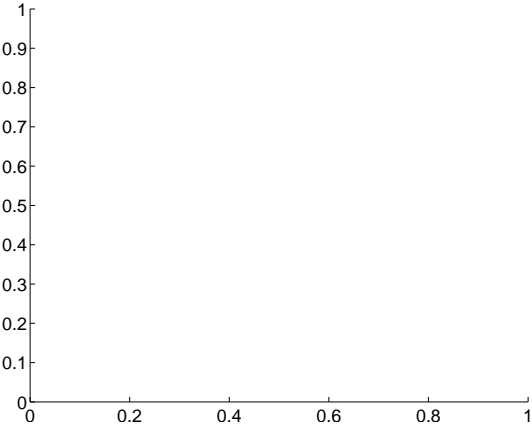


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

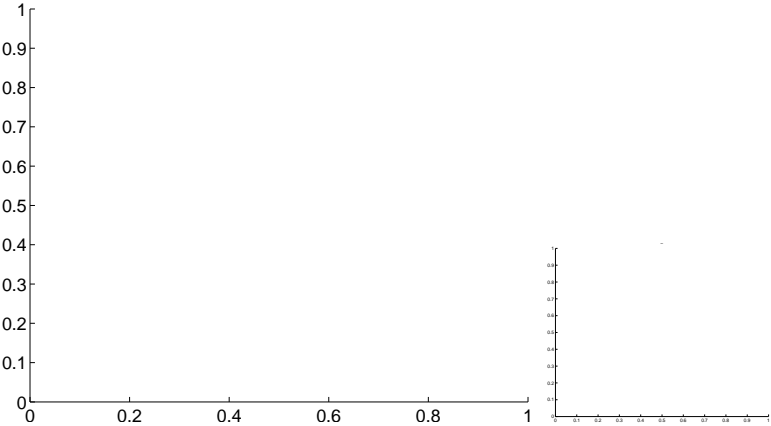


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

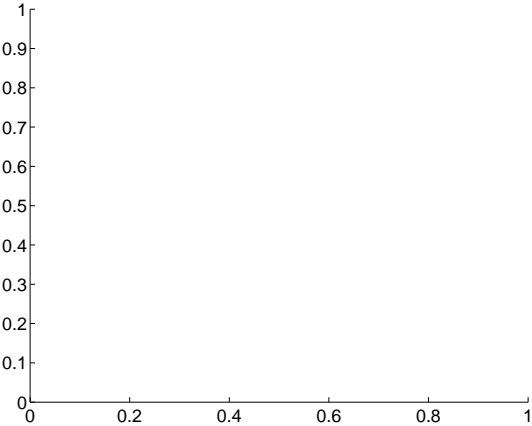
Q9 no difference image



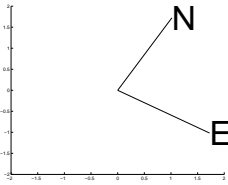
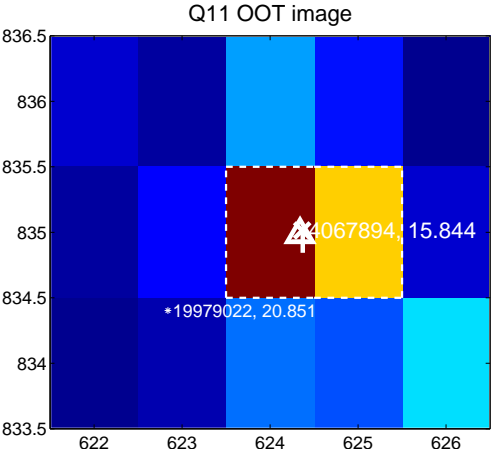
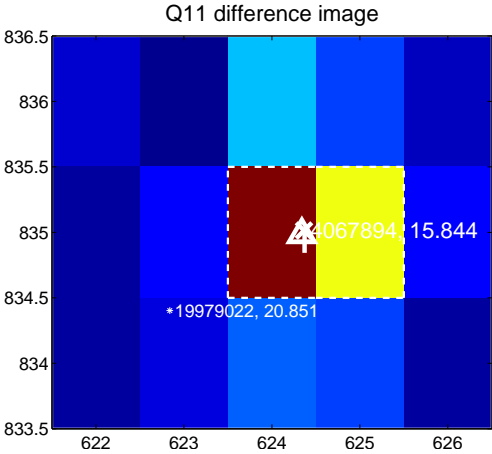
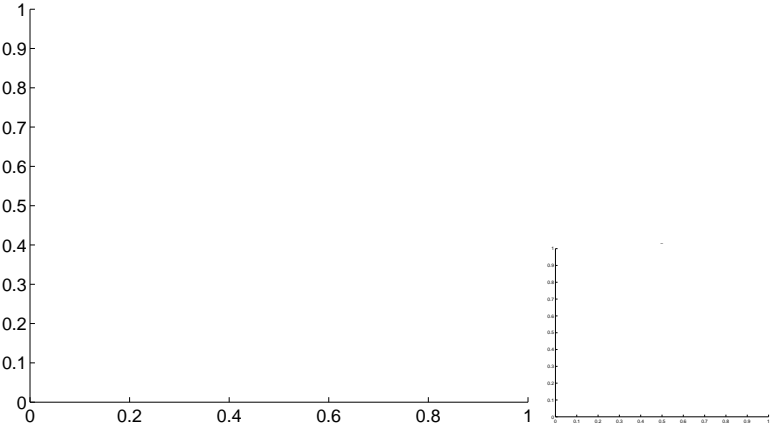
Q9 no OOT image



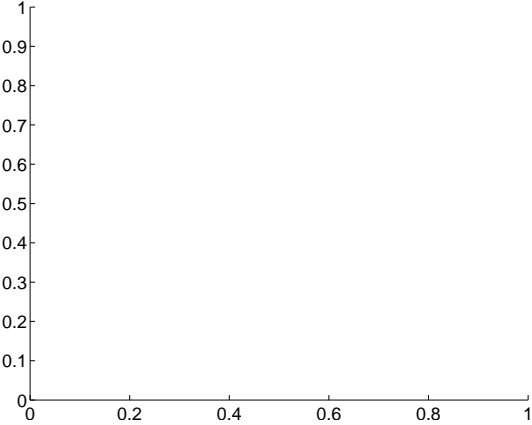
Q10 no difference image



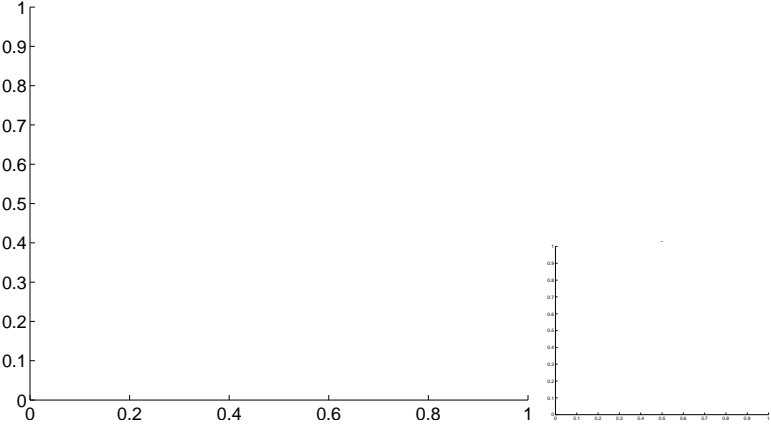
Q10 no OOT image



Q12 no difference image



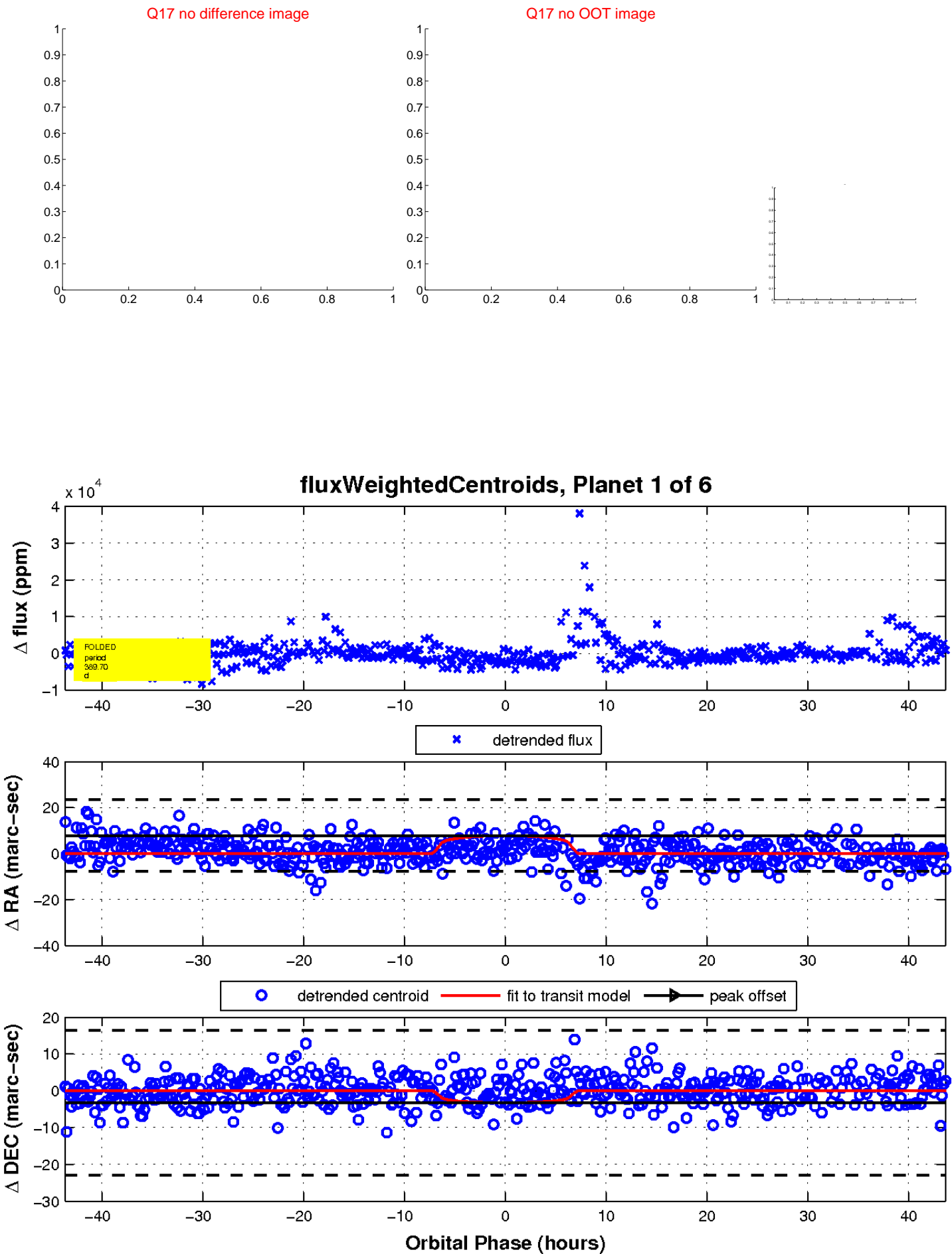
Q12 no OOT image



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

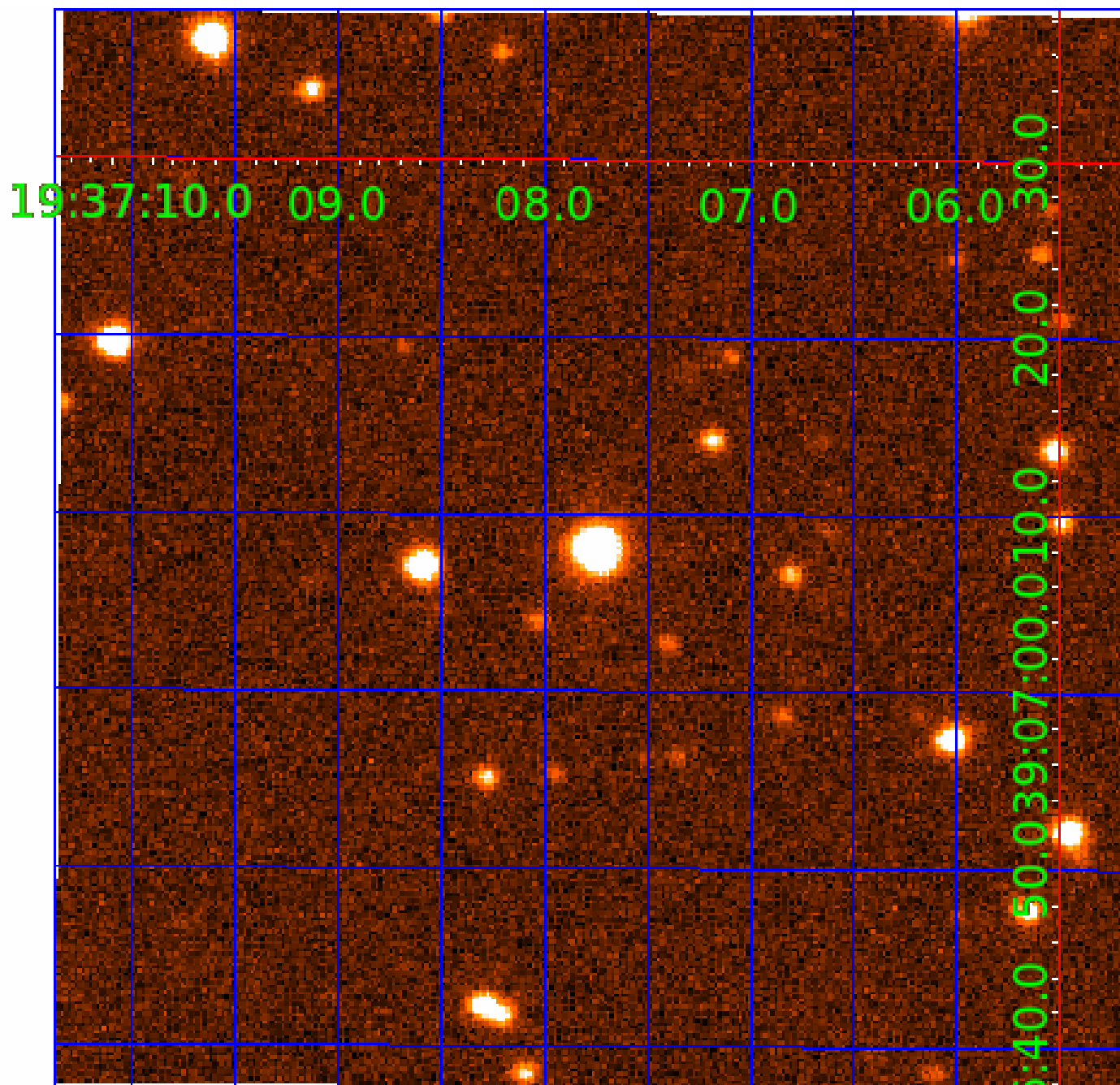


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004067894

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})
004067894-01	OBS	No	389.695718	312.777131	4737.0	14.588	11.1	10.5	0.29	3360	2.00	0.02
004067894-02	OBS	No	256.424130	325.851712	3055.1	10.443	12.5	8.0	0.29	3360	1.81	0.04
004067894-03	OBS	No	311.695528	323.319786	3501.1	2.680	9.5	7.5	0.29	3360	1.87	0.03
004067894-04	OBS	No	211.733703	151.226575	2653.8	5.142	13.5	6.7	0.29	3360	1.74	0.05
004067894-05	OBS	No	601.049795	177.351041	2941.3	5.791	11.5	6.2	0.29	3360	1.97	0.01
004067894-06	OBS	No	465.931432	247.261542	2435.3	14.542	9.5	5.1	0.29	3360	1.40	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004067894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
004067894-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004067894-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004067894-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-06	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

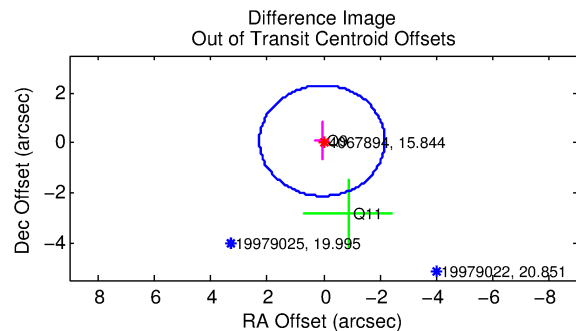
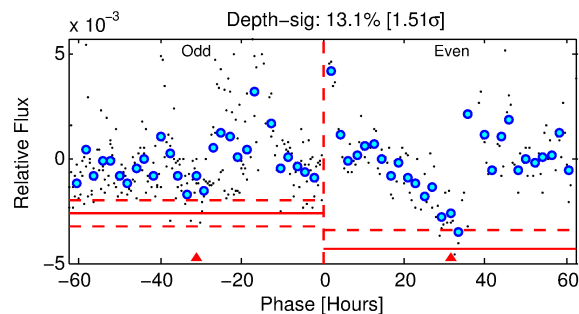
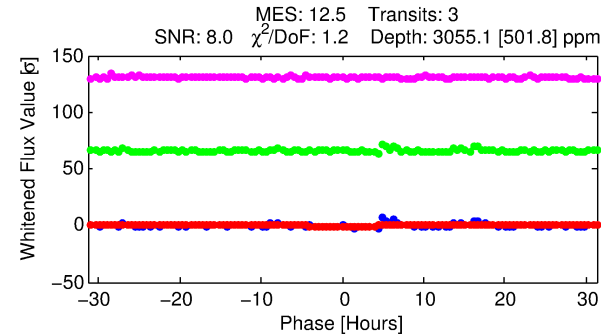
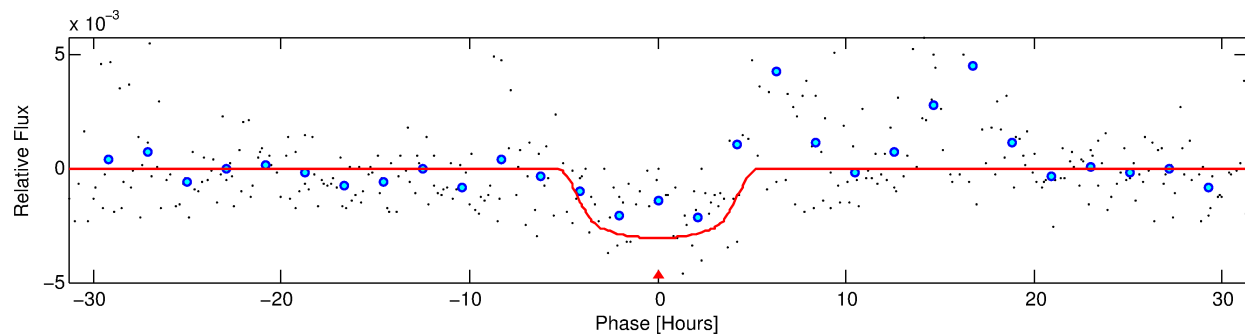
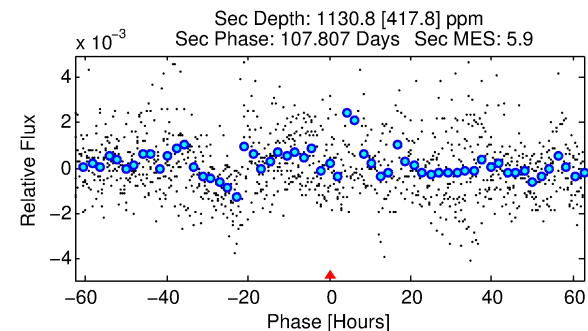
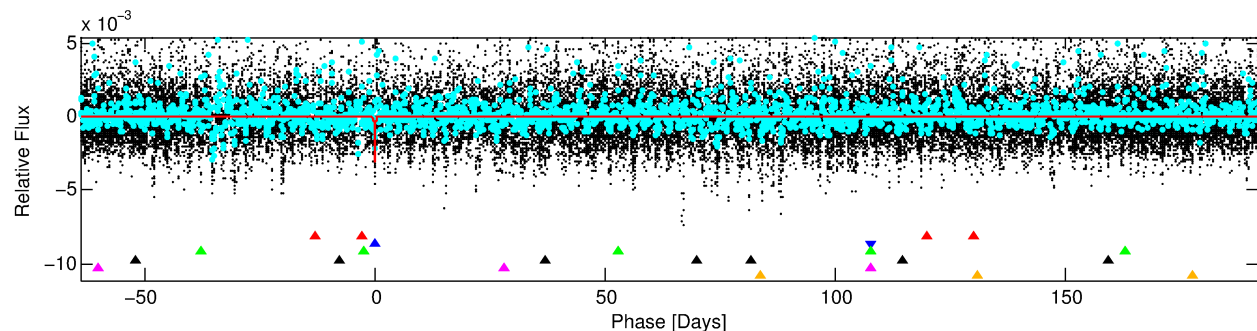
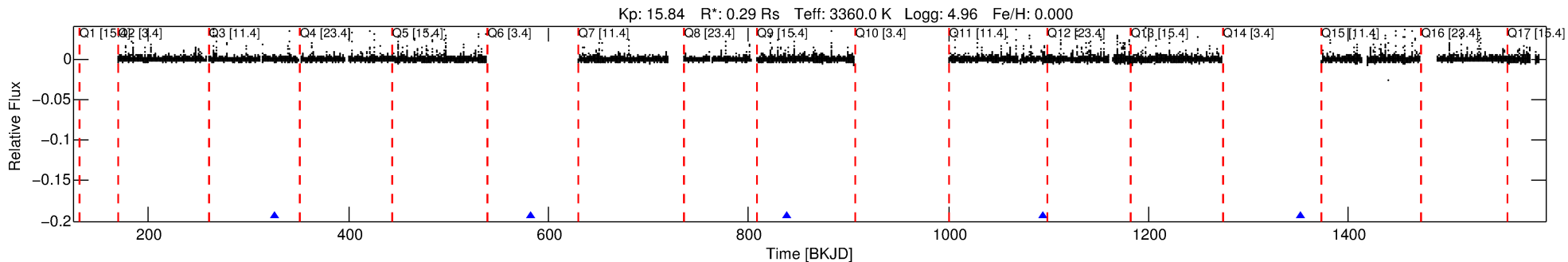
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004067894-02

No Significant Match Found

DV One-Page Summary

KIC: 4067894 Candidate: 2 of 6 Period: 256.424 d



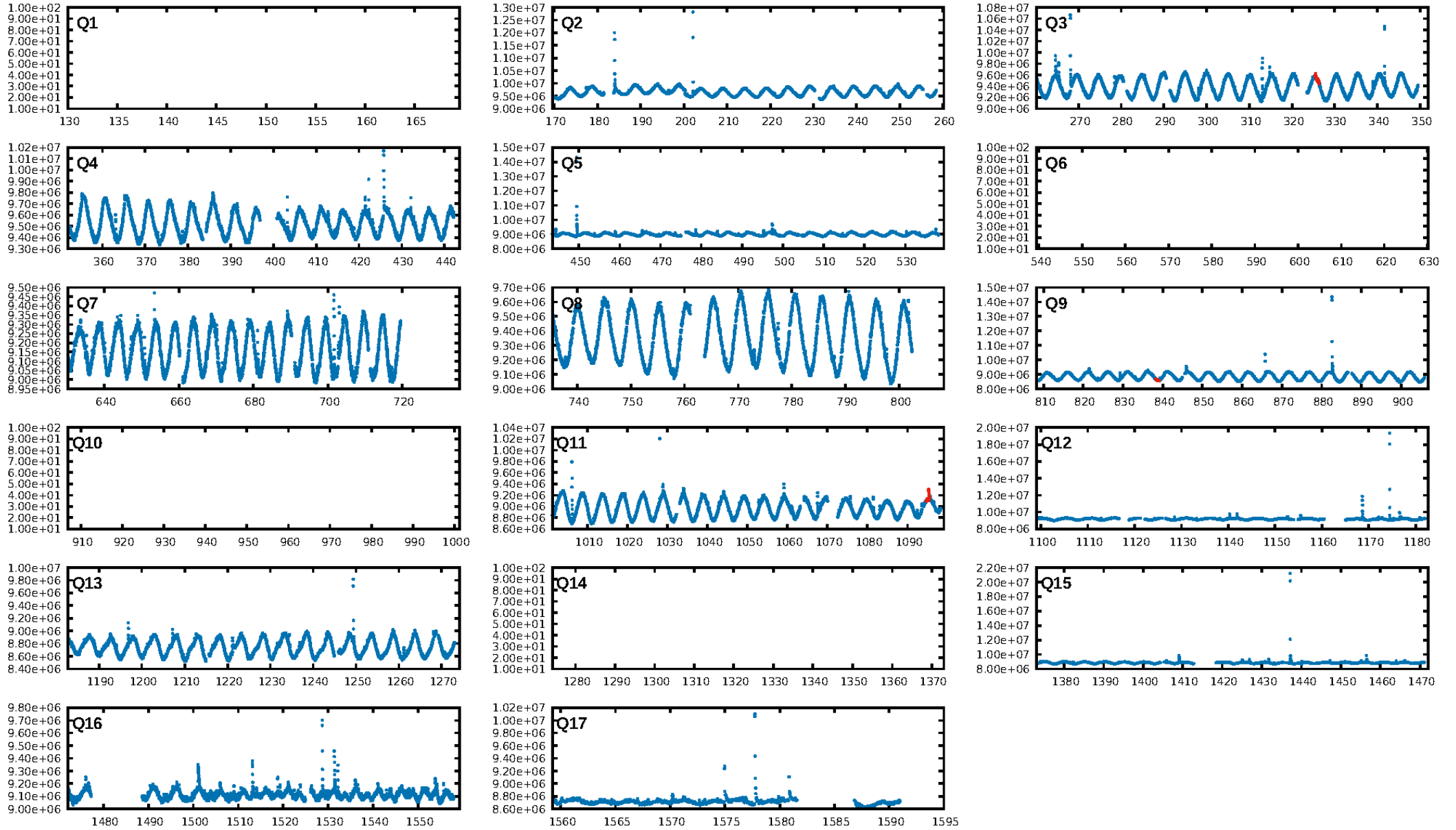
DV Fit Results:

Period = 256.42413 [0.00870] d
Epoch = 325.8517 [0.0178] BKJD
Rp/R* = 0.0579 [0.0072]
a/R* = 118.37 [38.12]
b = 0.85 [0.11]
Seff = 0.04 [0.01]
Teq = 111 [4] K
Rp = 1.81 [0.37] Re
a = 0.5136 [0.0601] AU
Ag = 49895.10 [23259.55] [2.15σ]
Teffp = 2561 [288] K [8.50σ]

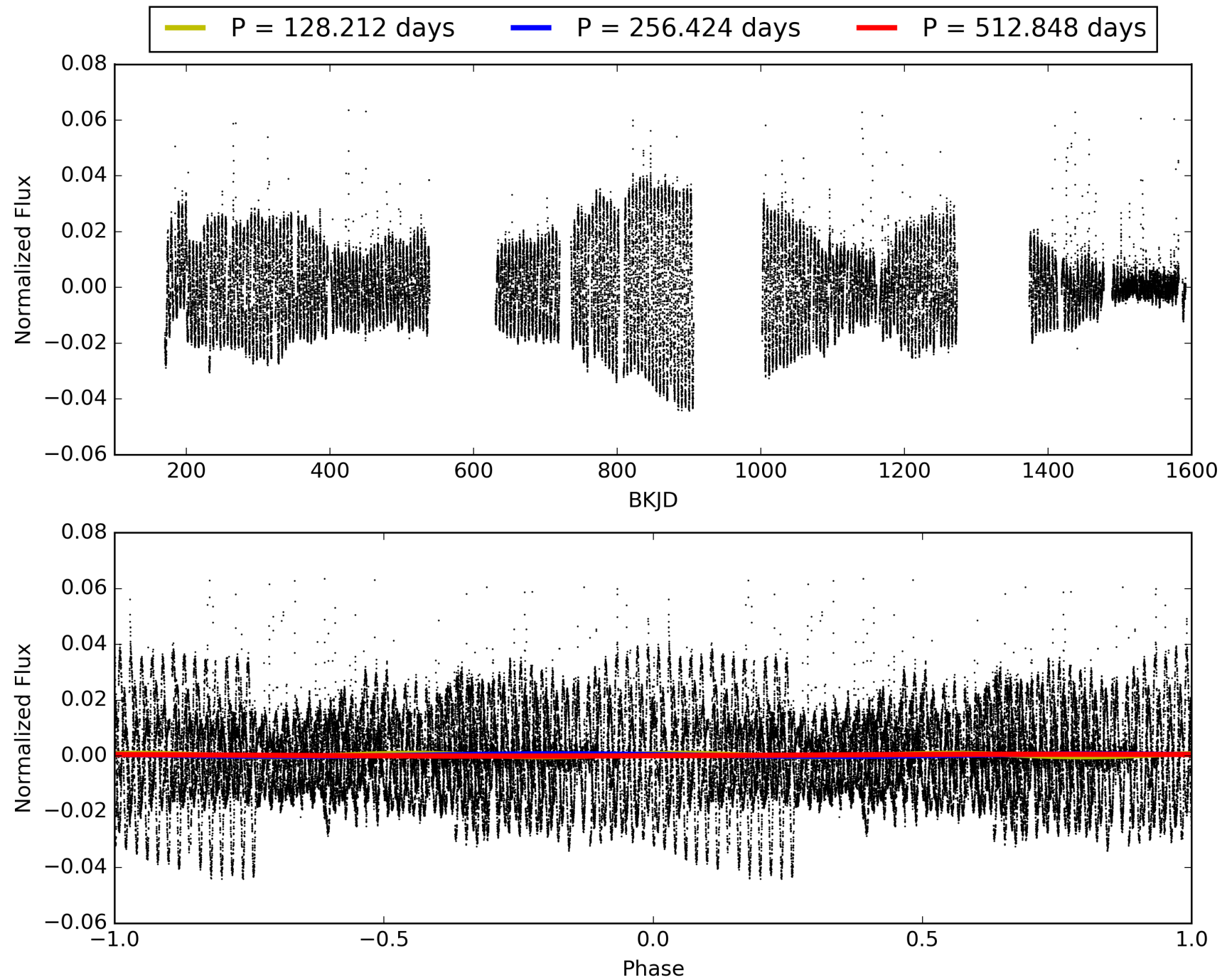
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [92.14σ]
LongPeriod-sig: 100.0% [123.04σ]
ModelChiSquare2-sig: 2.4%
ModelChiSquareGof-sig: 89.3%
Bootstrap-pfa: 9.32e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.1642
Centroid-sig: 0.1%
Centroid-so: 1.315 arcsec [1.37σ]
OotOffset-rm: 0.092 arcsec [0.12σ]
KicOffset-rm: 0.147 arcsec [0.19σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 004067894-02, PDC Light Curves

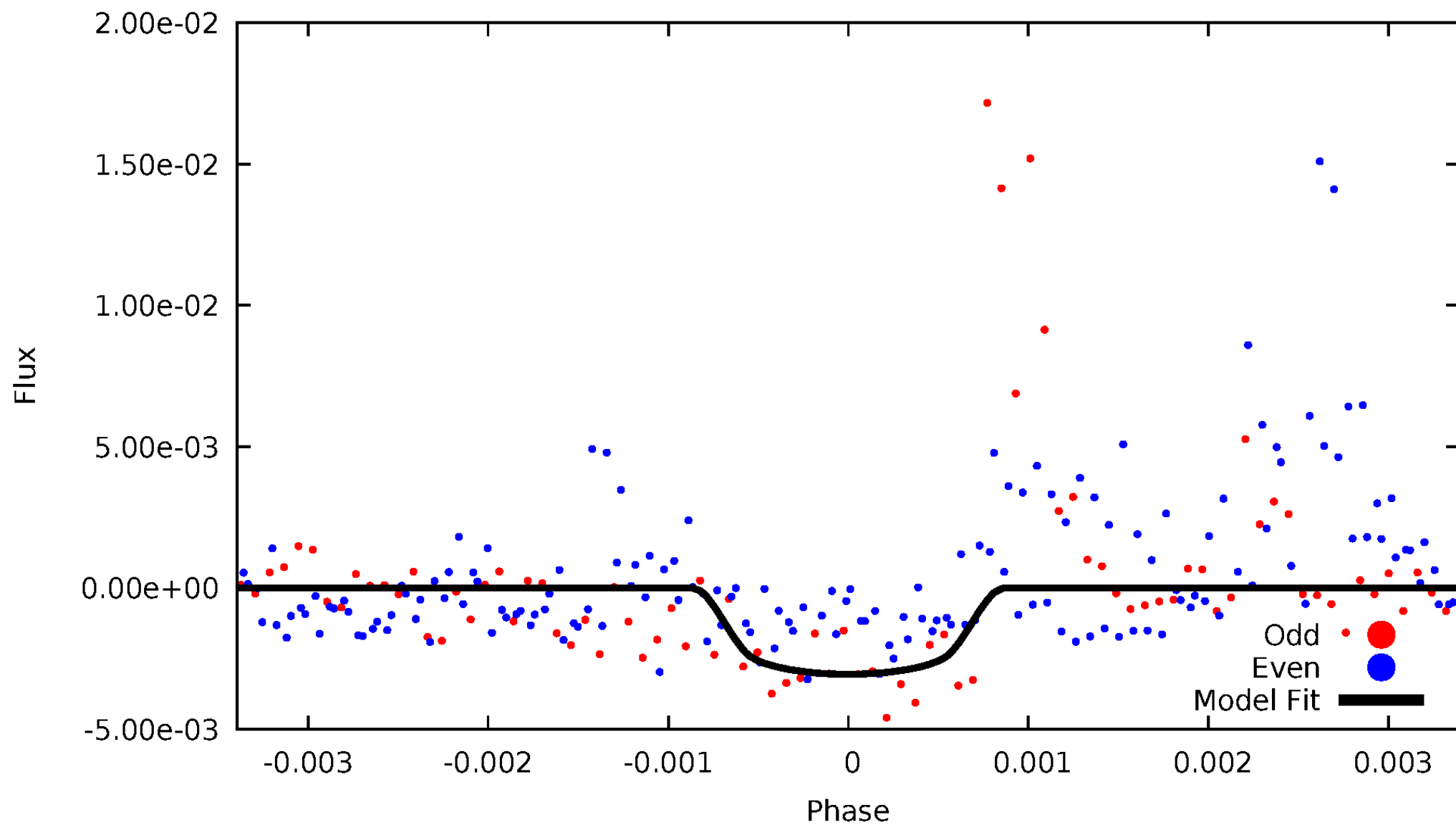


TCE 004067894-02



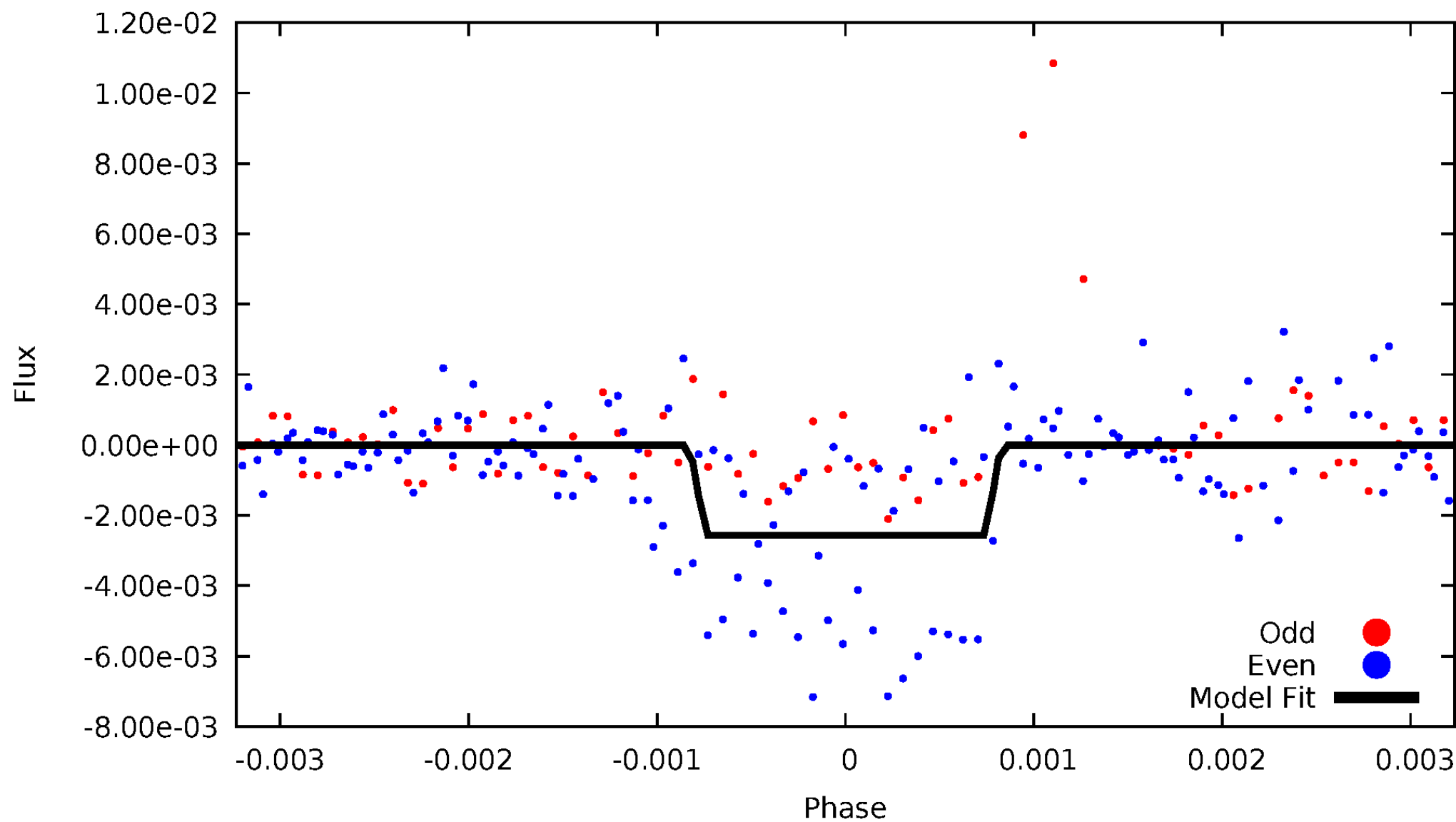
DV Odd/Even

TCE 004067894-02



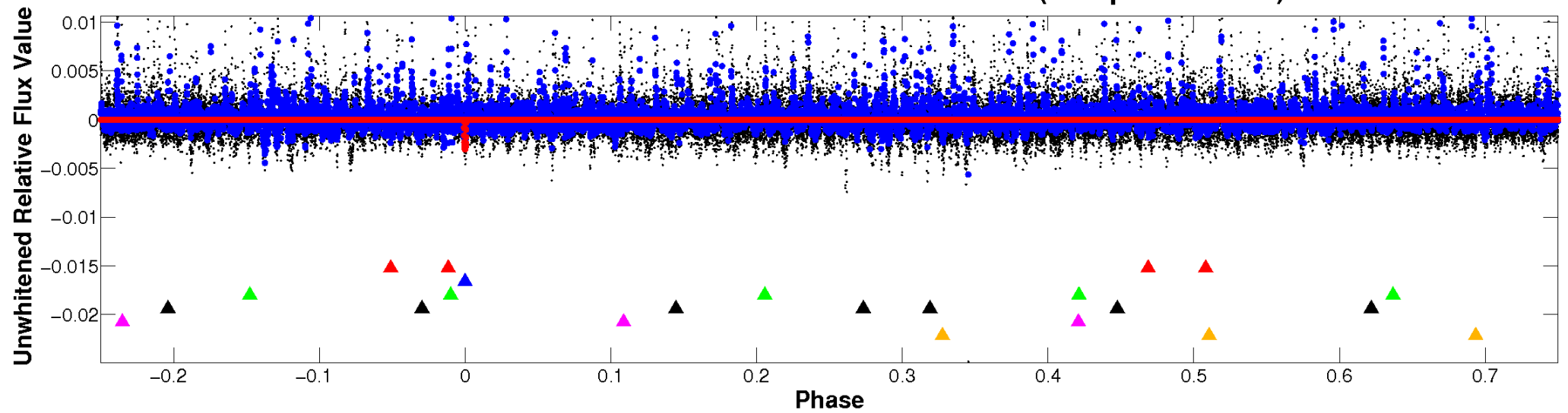
ALT Odd/Even

TCE 004067894-02

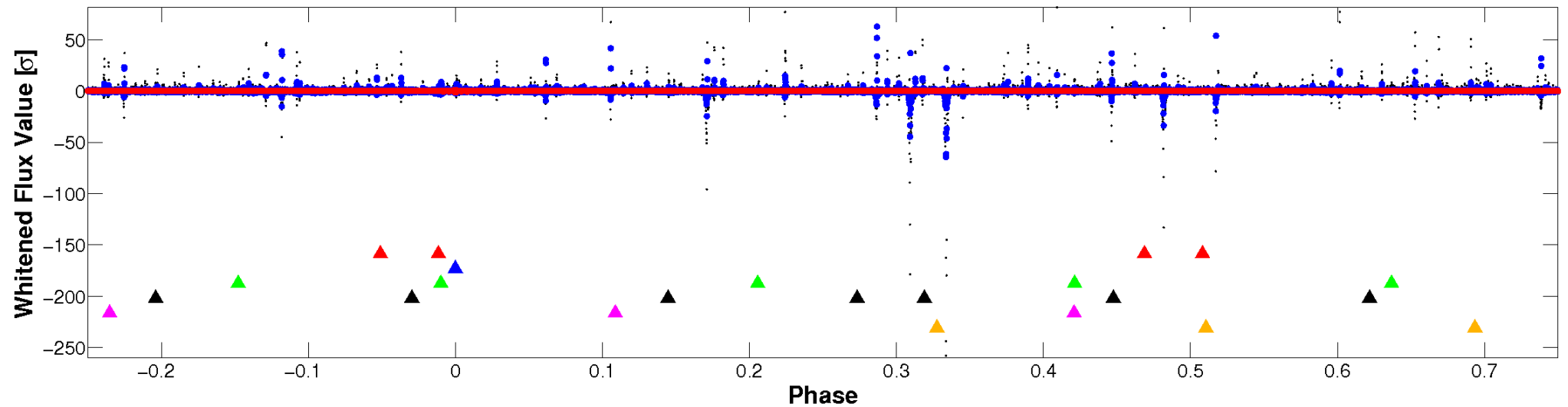


Non-Whitened Vs. Whitened Light Curve

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

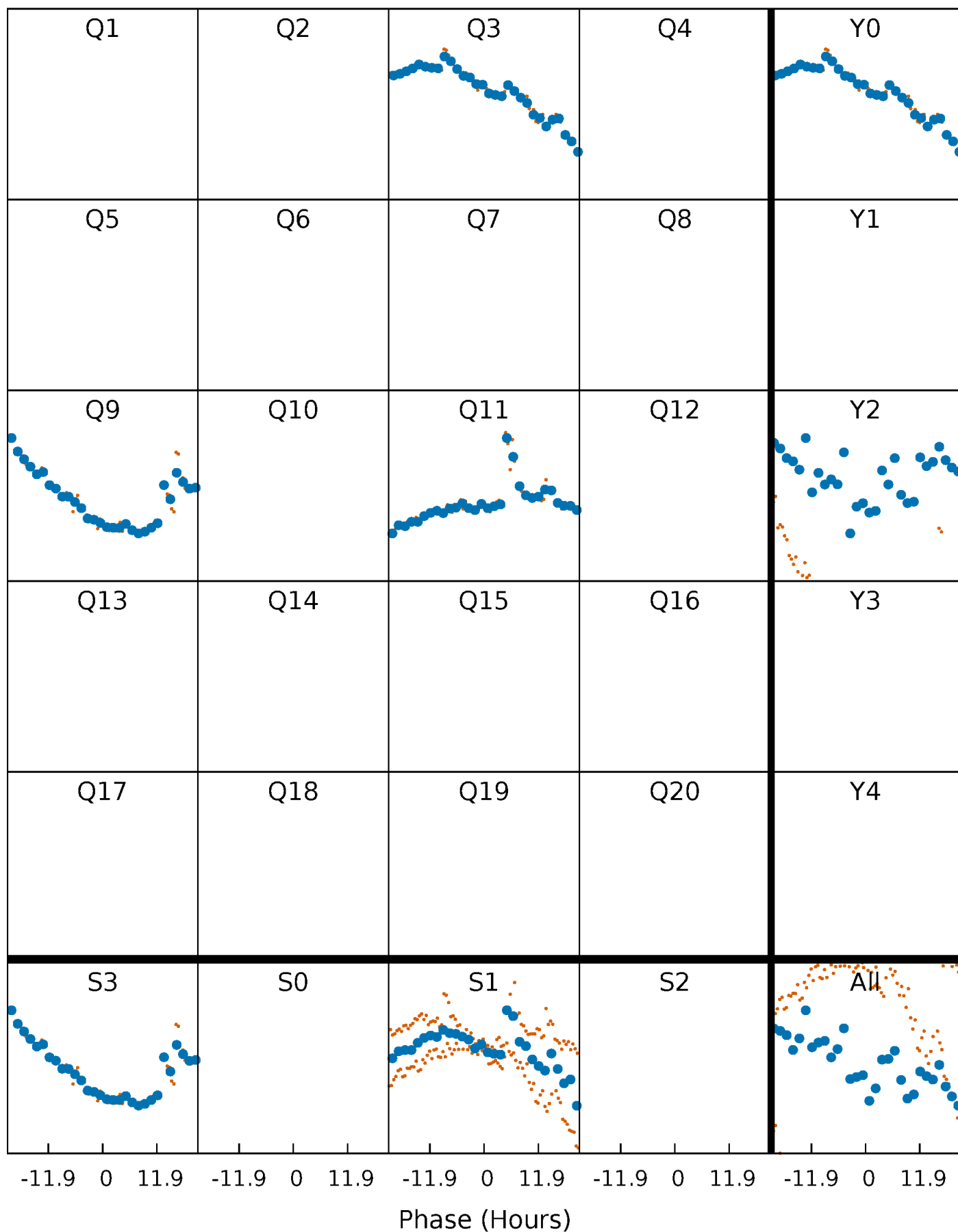


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



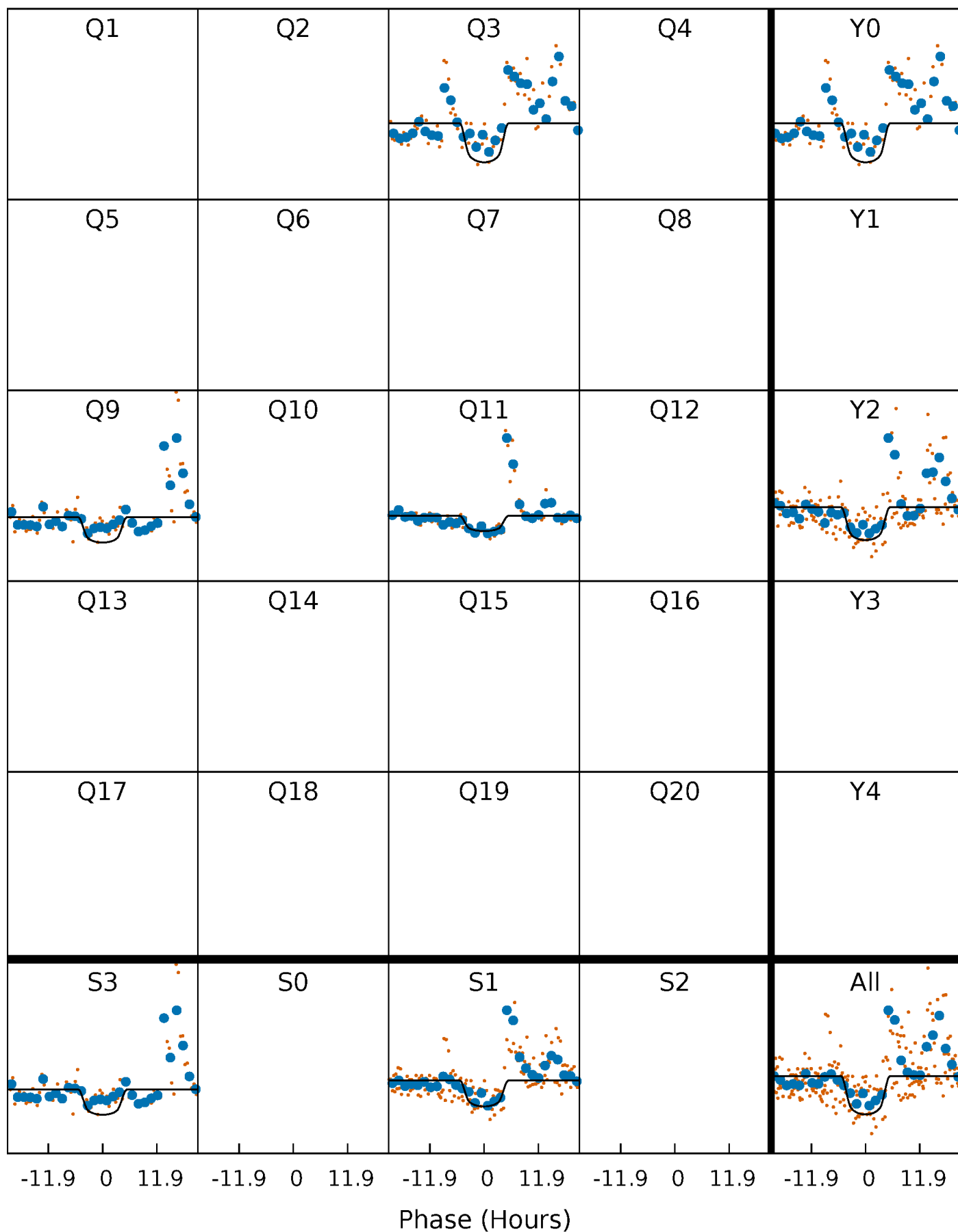
PDC Quarter-Phased Transit Curves

TCE 004067894-02 $P=256.424130$ Days $T_0=325.851712$ (BKJD)



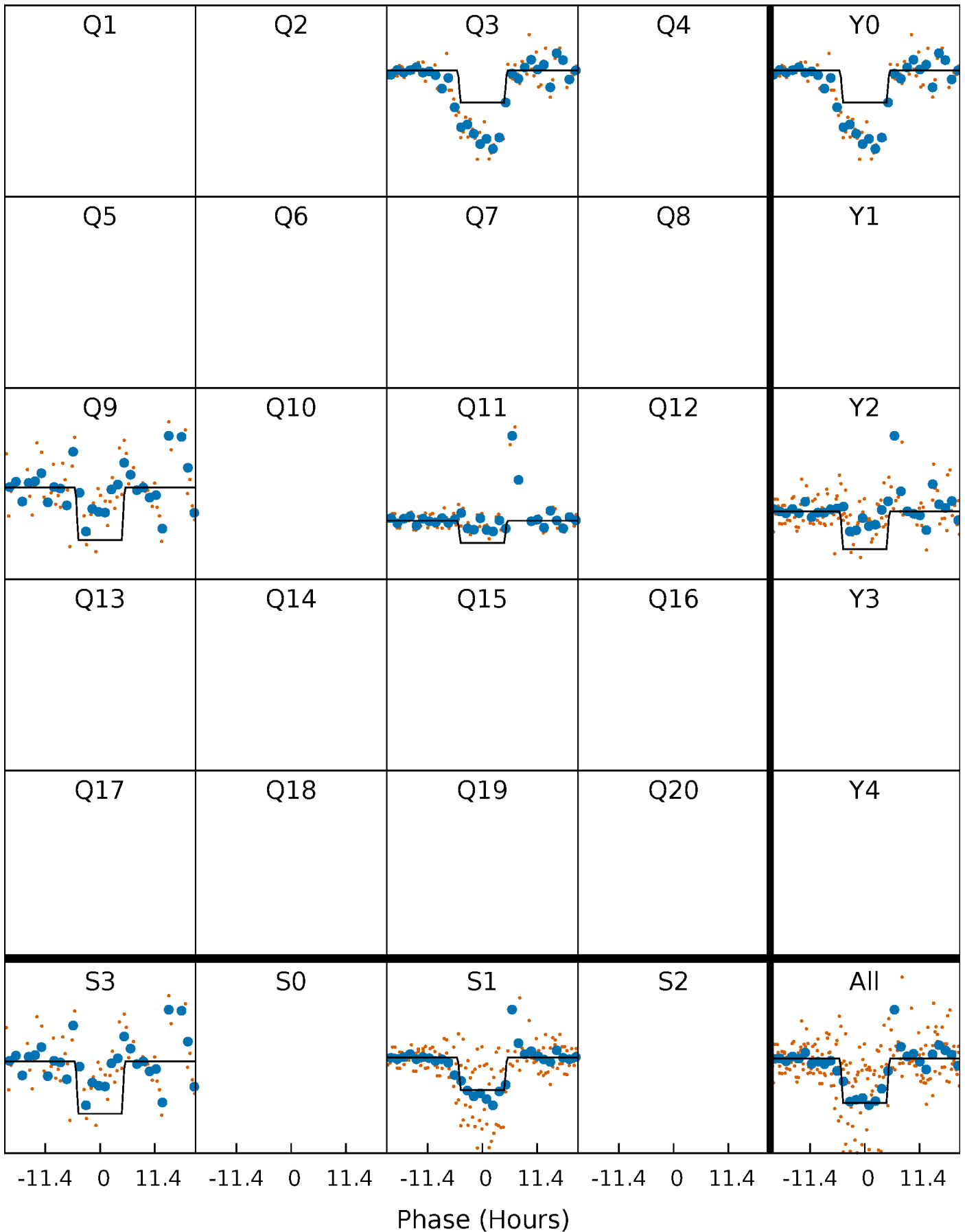
DV Quarter-Phased Transit Curves

TCE 004067894-02 $P=256.424130$ Days $T_0=325.851712$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

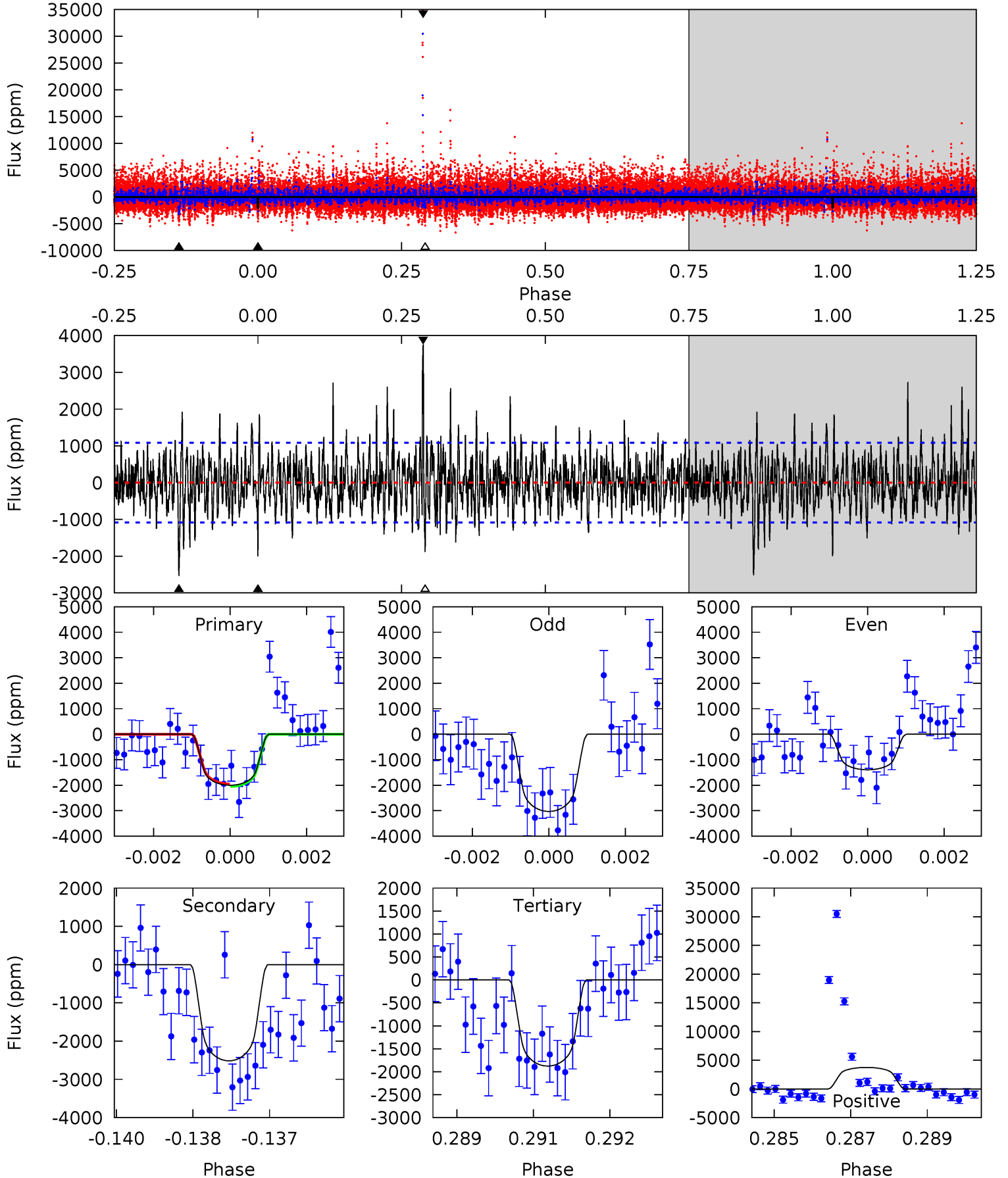
TCE 004067894-02 $P=256.427556$ Days $T_0=325.837709$ (BKJD)



DV Model-Shift Uniqueness Test

004067894-02, P = 256.424130 Days, E = 69.427582 Days

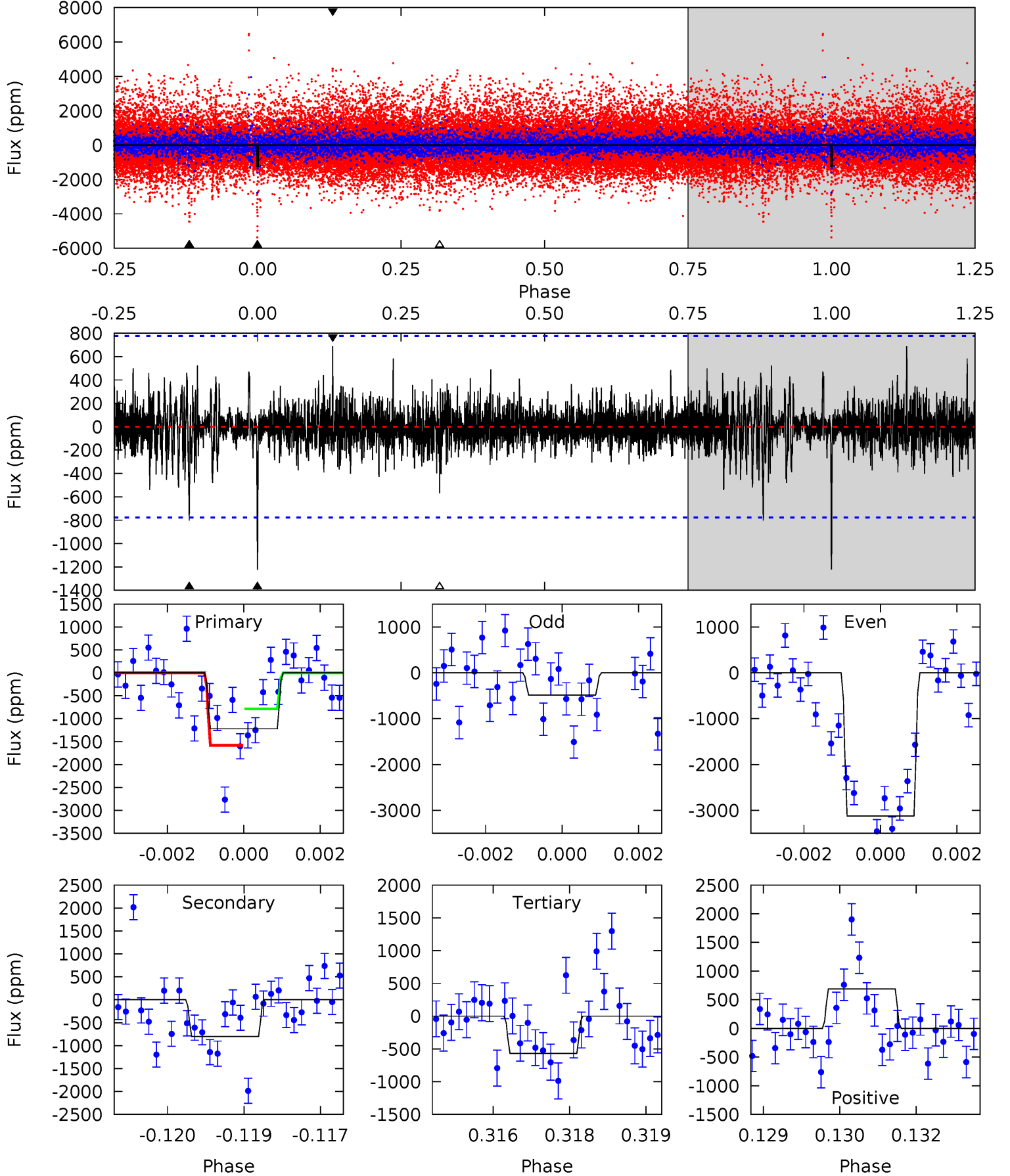
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.87	12.4	9.25	18.5	5.35	3.13	2.87	0.62	-8.60	3.15	-6.07	1.97	1.26	0.60	0.23



Alt Model-Shift Uniqueness Test

004067894-02, P = 256.427556 Days, E = 69.410153 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	5.53	3.91	4.74	5.36	3.14	0.87	4.50	3.68	1.62	0.80	8.64	2.66	0.36	2.74



Stellar Parameters For KIC 004067894

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3360^{+55}_{-50}	$4.961^{+0.055}_{-0.050}$	$0.000^{+0.100}_{-0.100}$	$0.287^{+0.047}_{-0.038}$	$0.274^{+0.057}_{-0.041}$	$16.380^{+4.916}_{-3.772}$
	+2%/-1%	+1%/-1%	+inf%/-inf%	+16%/-13%	+21%/-15%	+30%/-23%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 004067894-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2514 ± 203	$1.81^{+0.28}_{-0.26}$	155^{+5}_{-5}	3231^{+149}_{-123}	113173^{+36852}_{-26386}
Alt.	-803 ± 145	$1.61^{+0.28}_{-0.26}$	155^{+5}_{-4}	2833^{+160}_{-118}	44609^{+22310}_{-12608}

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

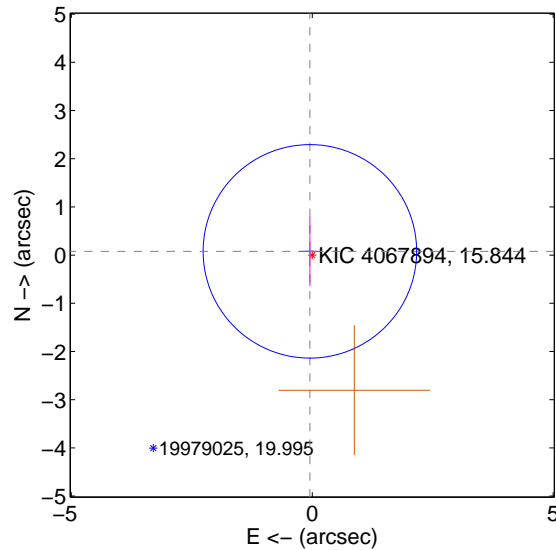
Supplemental centroid analysis for 004067894-02. Kepler magnitude: 15.84. Transit SNR 7.97

There are 1 quarters with good PRF difference image offsets

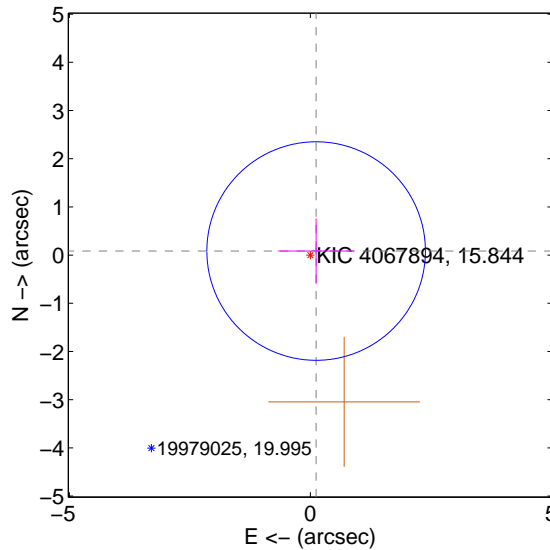
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.738	0.12	0.049 ± 0.240	0.078 ± 0.726
PRF-fit source offset from KIC position	0.147 ± 0.756	0.19	-0.121 ± 0.790	0.084 ± 0.679
photometric centroid source offset	1.31 ± 0.96	1.37	-1.04 ± 1.08	0.80 ± 0.69

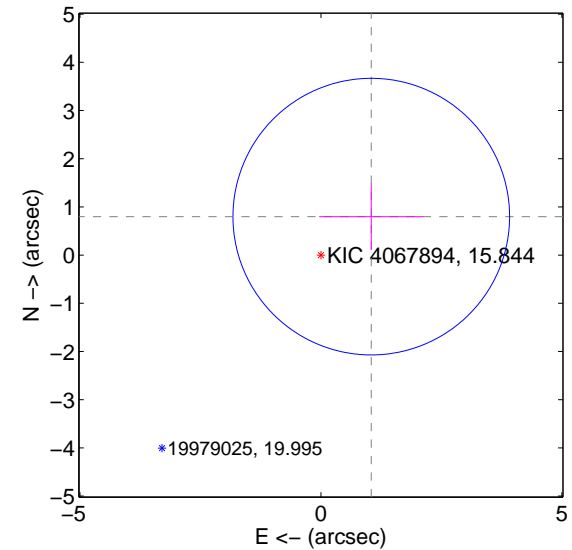
offset from difference PRF-fit to OOT PRF-fit



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 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



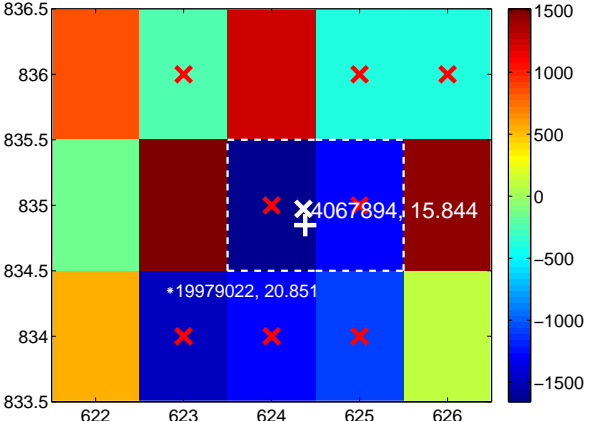
Q2 no difference image



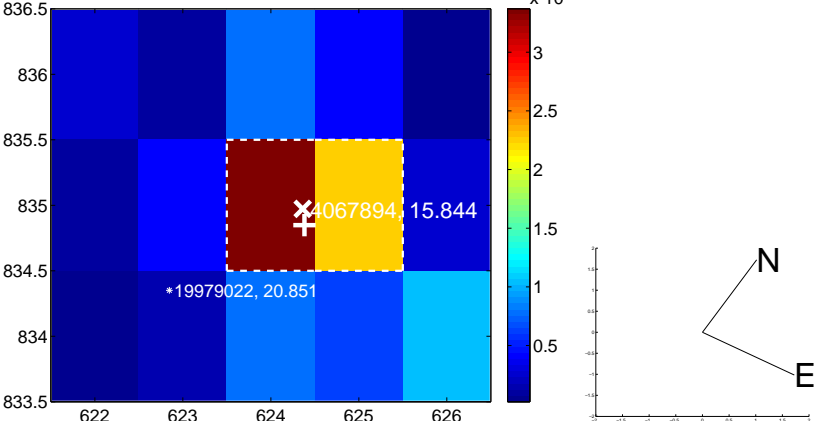
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



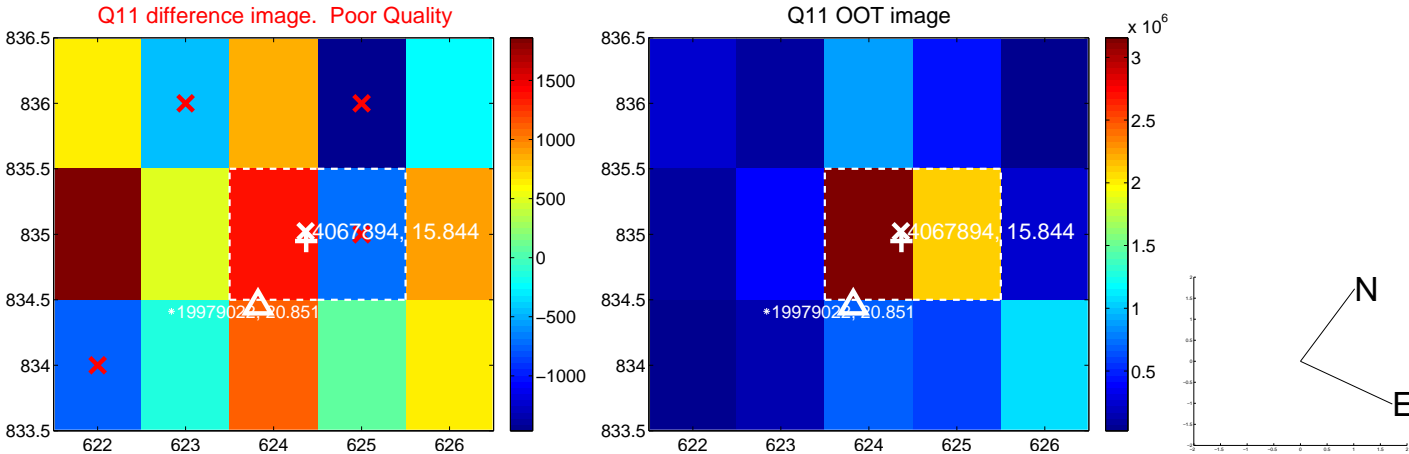
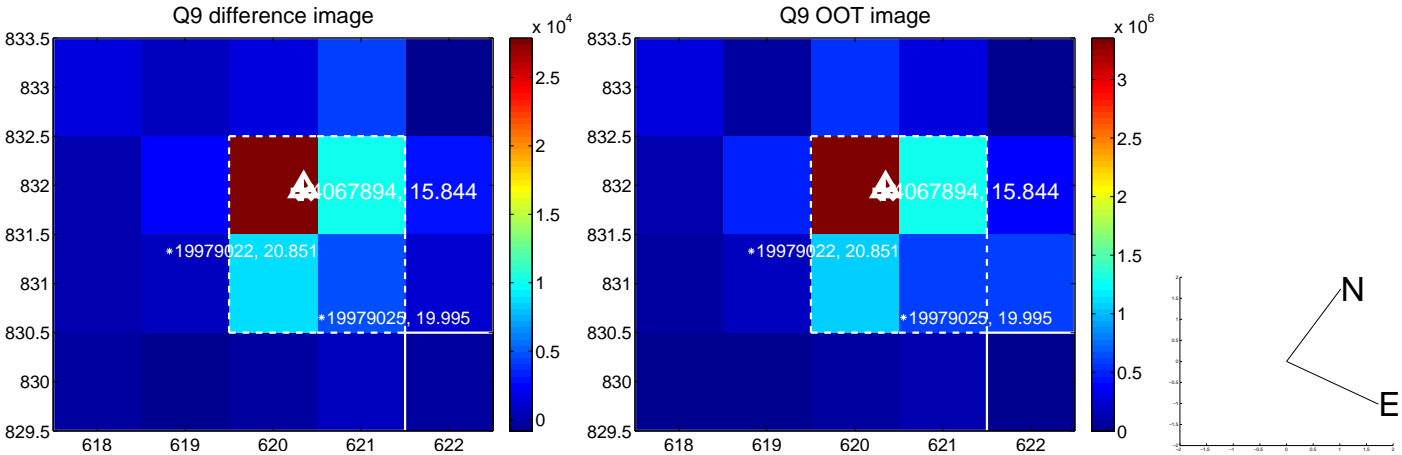
Q4 no OOT image



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



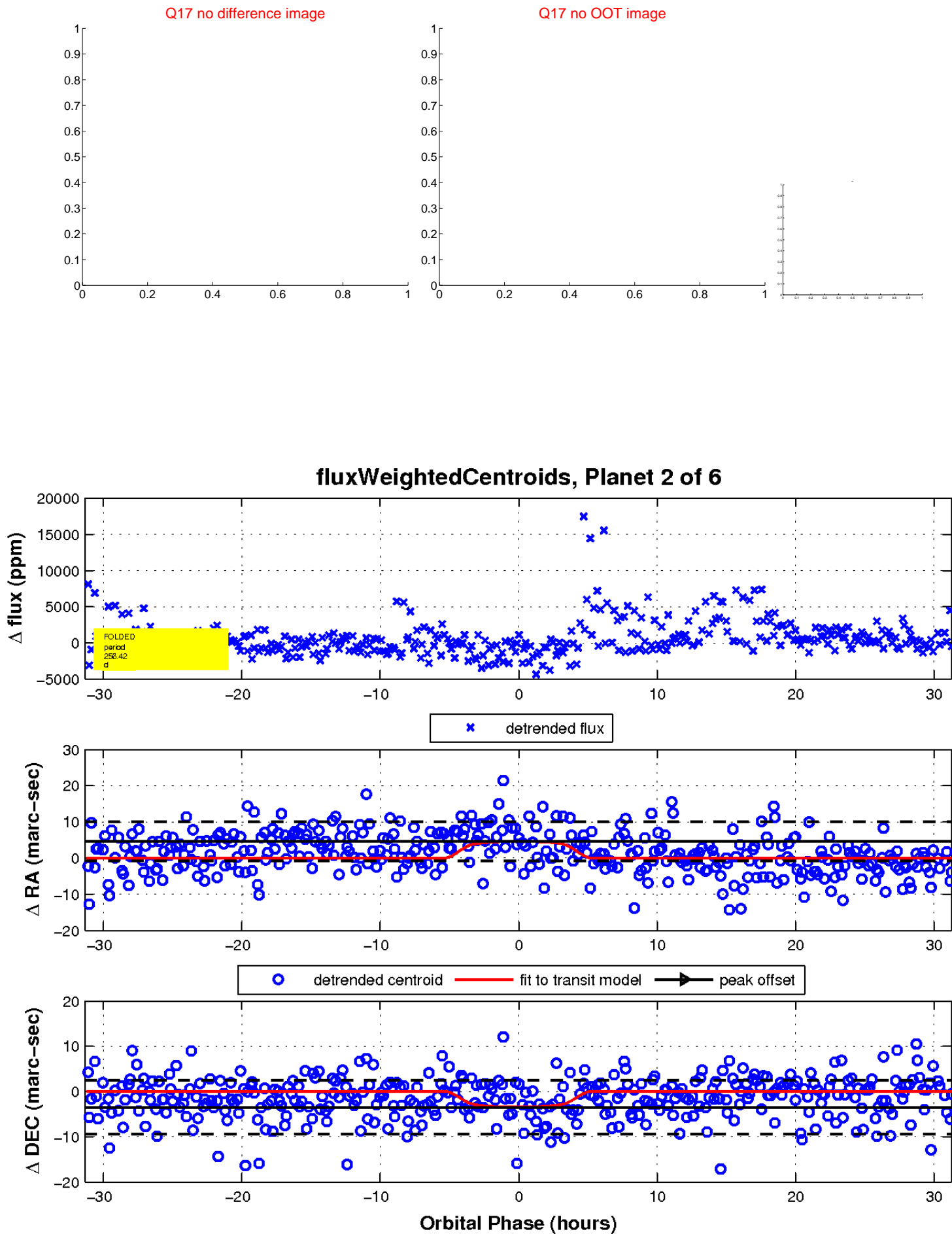
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

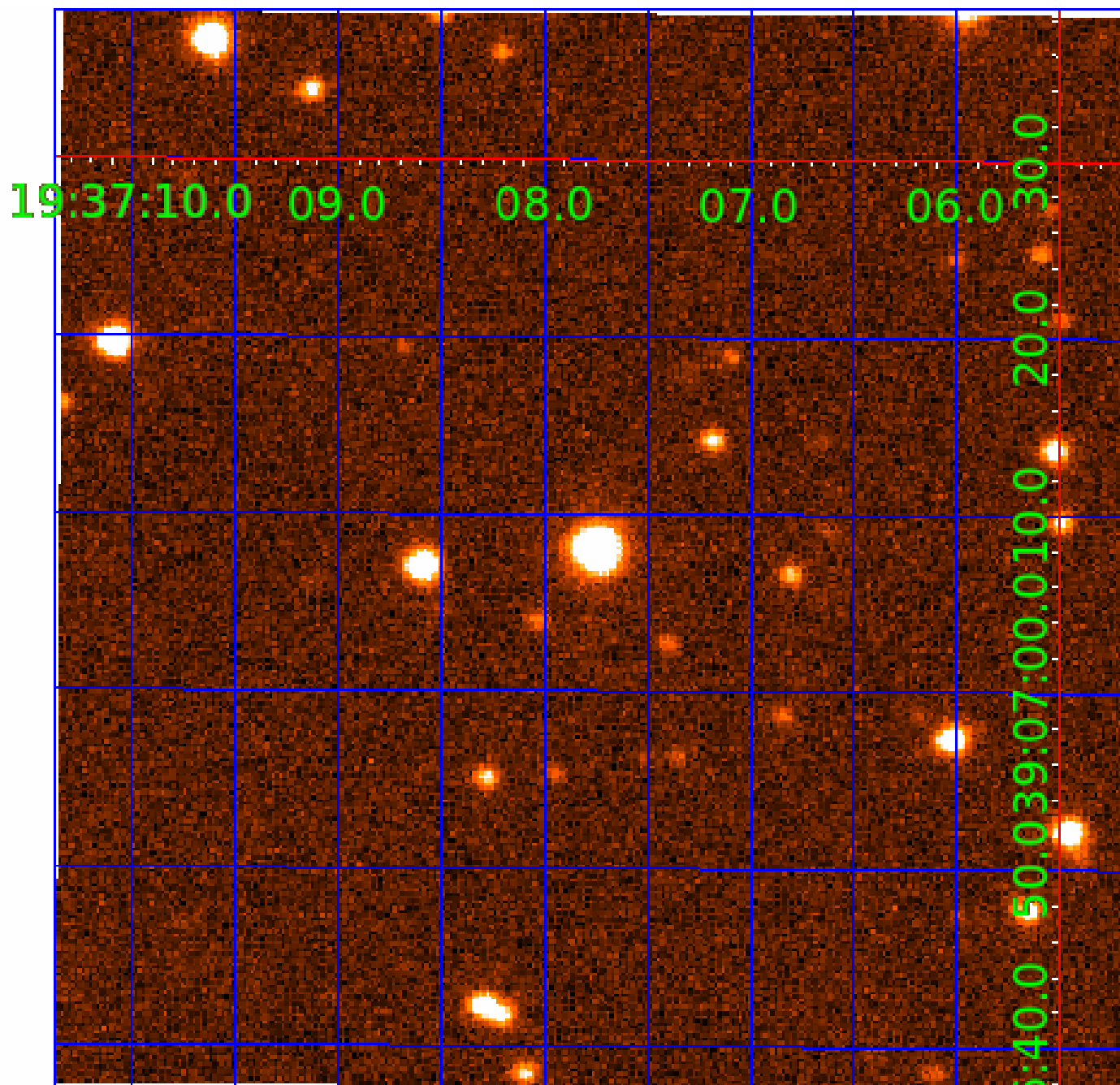


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004067894

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})
004067894-01	OBS	No	389.695718	312.777131	4737.0	14.588	11.1	10.5	0.29	3360	2.00	0.02
004067894-02	OBS	No	256.424130	325.851712	3055.1	10.443	12.5	8.0	0.29	3360	1.81	0.04
004067894-03	OBS	No	311.695528	323.319786	3501.1	2.680	9.5	7.5	0.29	3360	1.87	0.03
004067894-04	OBS	No	211.733703	151.226575	2653.8	5.142	13.5	6.7	0.29	3360	1.74	0.05
004067894-05	OBS	No	601.049795	177.351041	2941.3	5.791	11.5	6.2	0.29	3360	1.97	0.01
004067894-06	OBS	No	465.931432	247.261542	2435.3	14.542	9.5	5.1	0.29	3360	1.40	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004067894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
004067894-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004067894-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004067894-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-06	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

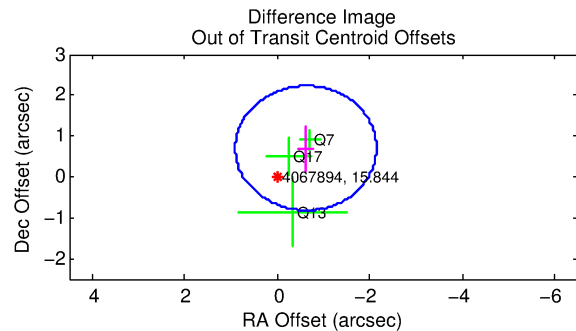
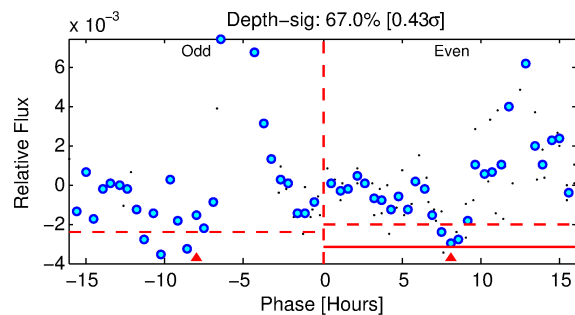
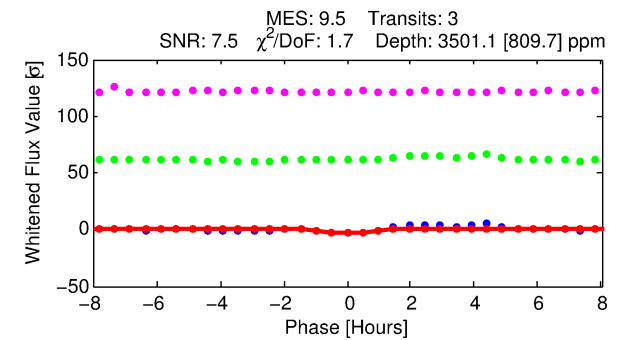
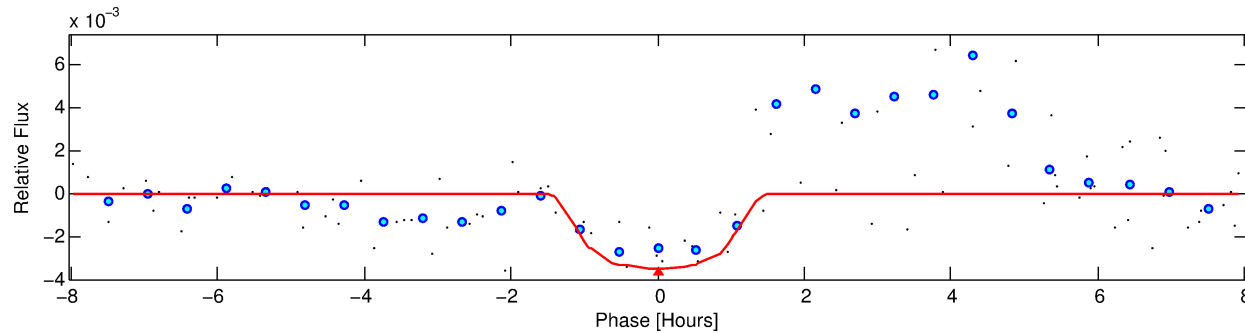
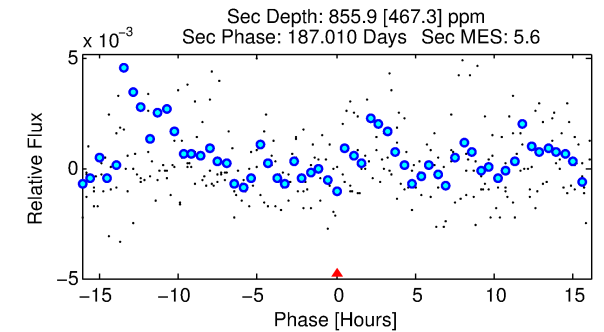
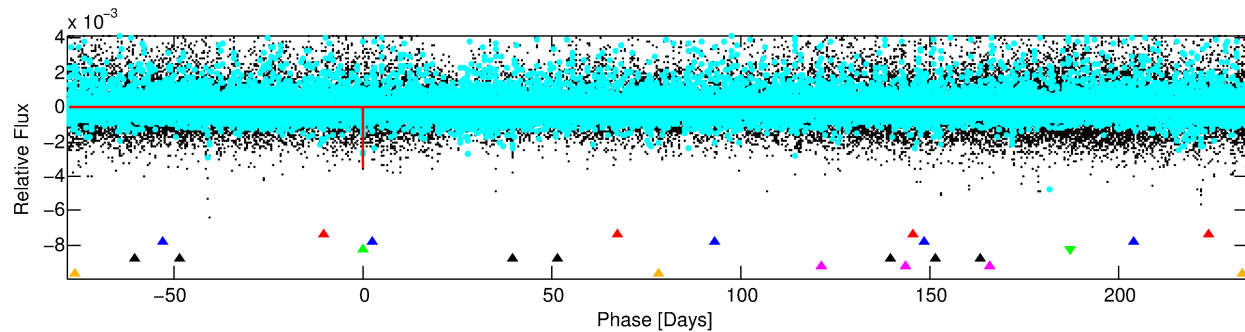
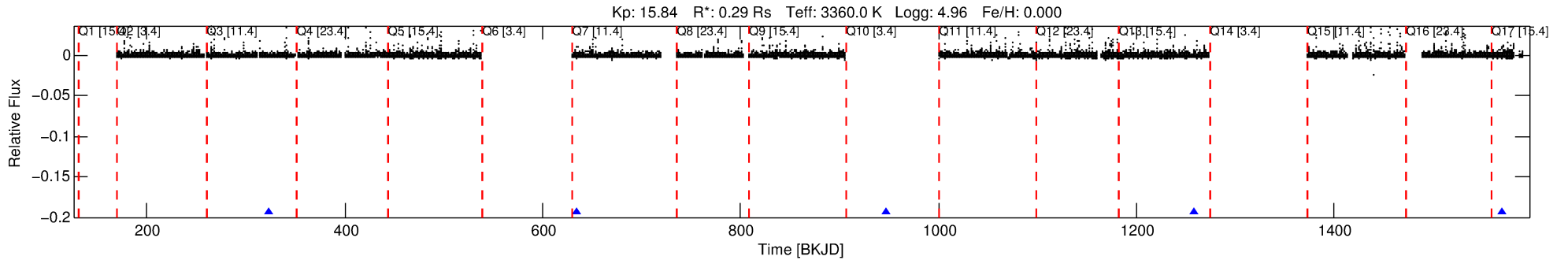
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004067894-03

No Significant Match Found

DV One-Page Summary

KIC: 4067894 Candidate: 3 of 6 Period: 311.696 d



DV Fit Results:

Period = 311.69553 [0.00494] d
Epoch = 323.3198 [0.0141] BKJD
Rp/R* = 0.0596 [0.0332]
a/R* = 638.21 [1411.00]
b = 0.78 [1.10]
Seff = 0.03 [0.00]
Teq = 104 [4] K
Rp = 1.87 [1.08] Re
a = 0.5849 [0.0685] AU
Ag = 46178.22 [57622.48] [0.80σ]
Teffp = 2353 [731] K [3.08σ]

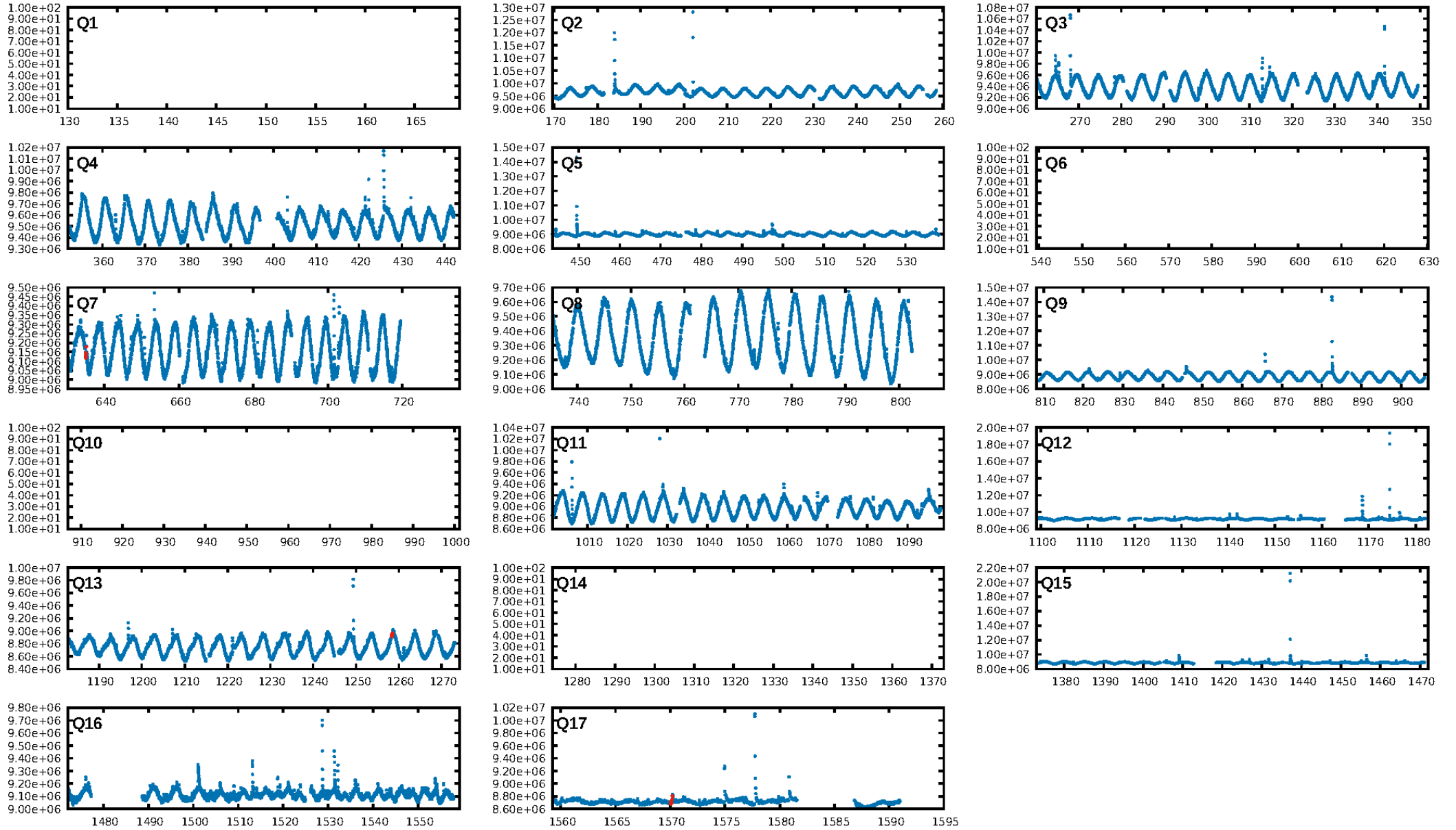
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [123.04σ]
LongPeriod-sig: 100.0% [126.21σ]
ModelChiSquare2-sig: 9.1%
ModelChiSquareGof-sig: 89.5%
Bootstrap-pfa: 5.71e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.917
Centroid-sig: 27.3%
Centroid-so: 1.508 arcsec [1.28σ]
OotOffset-rm: 0.936 arcsec [1.84σ]
KicOffset-rm: 0.661 arcsec [1.75σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

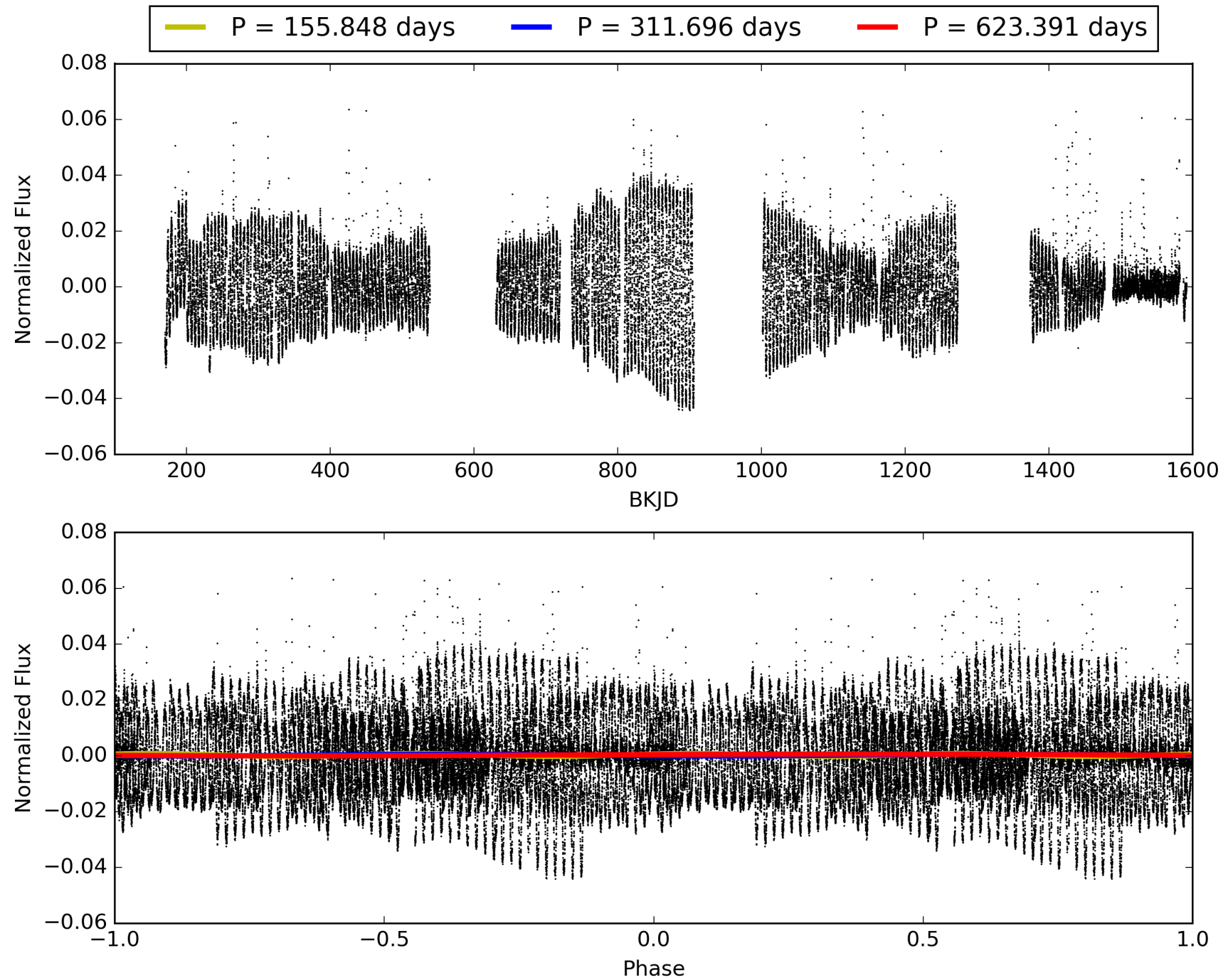
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:56:30 Z

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

TCE 004067894-03, PDC Light Curves

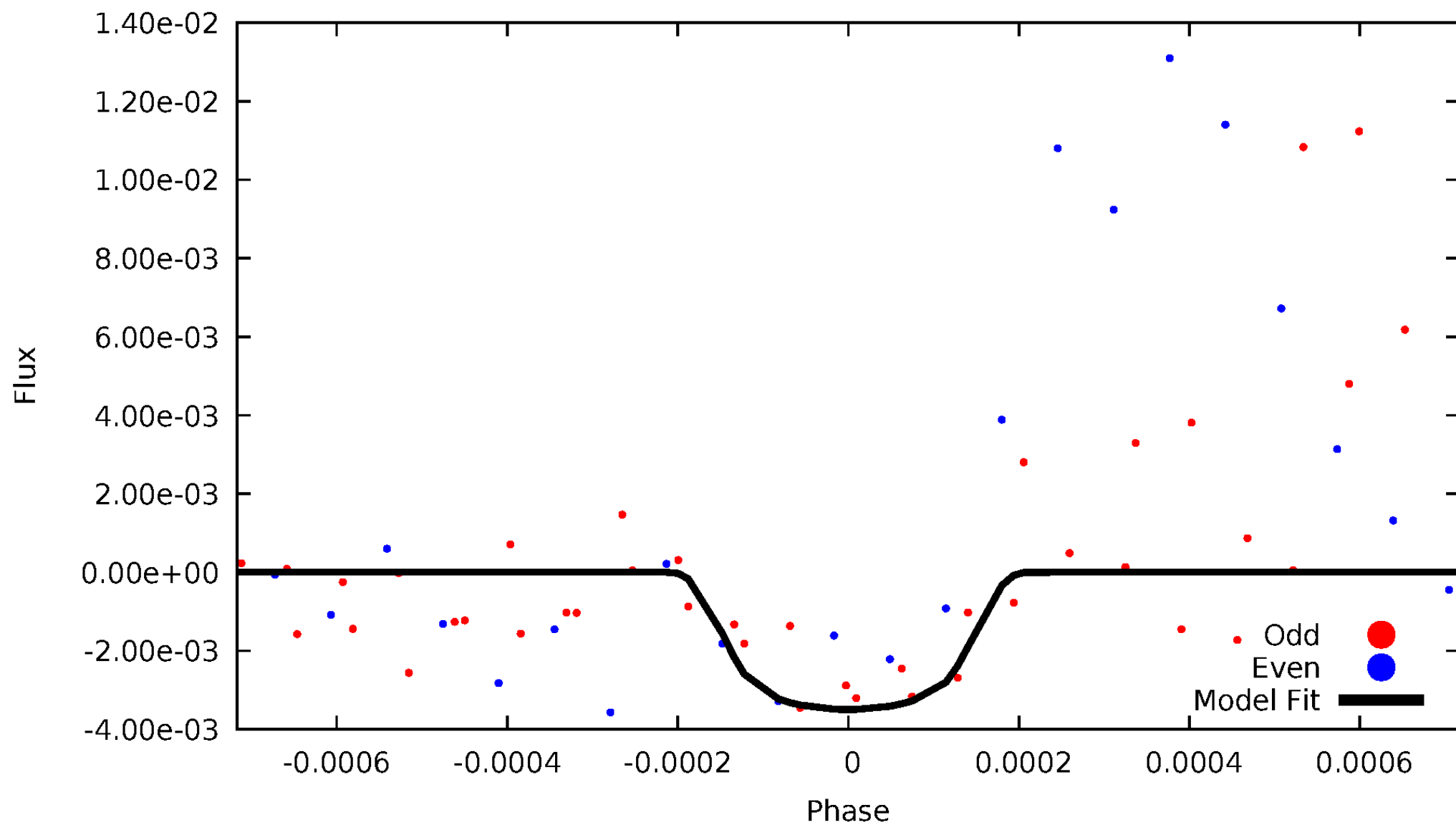


TCE 004067894-03



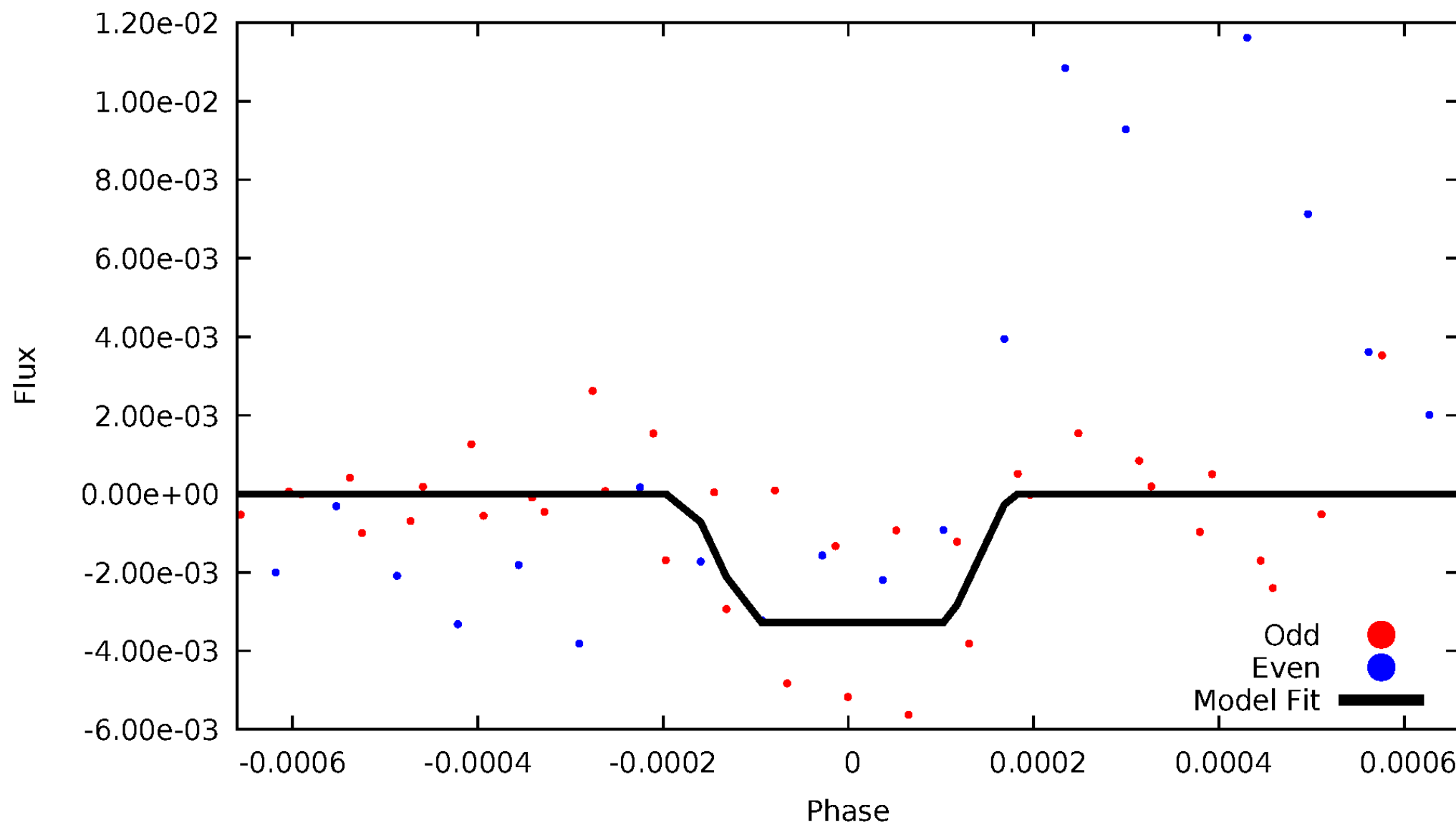
DV Odd/Even

TCE 004067894-03



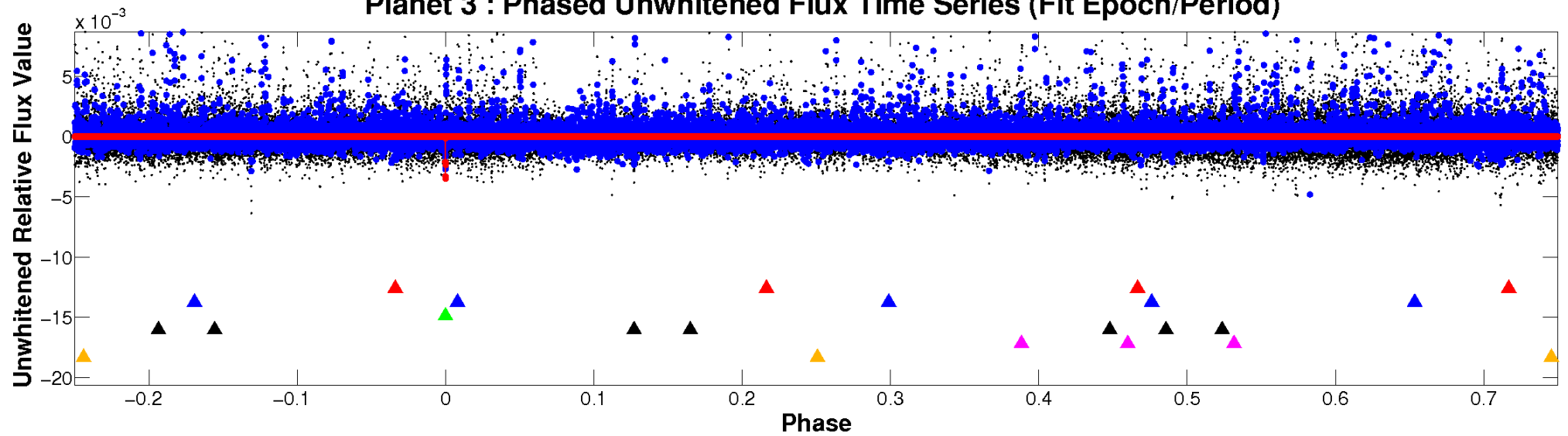
ALT Odd/Even

TCE 004067894-03

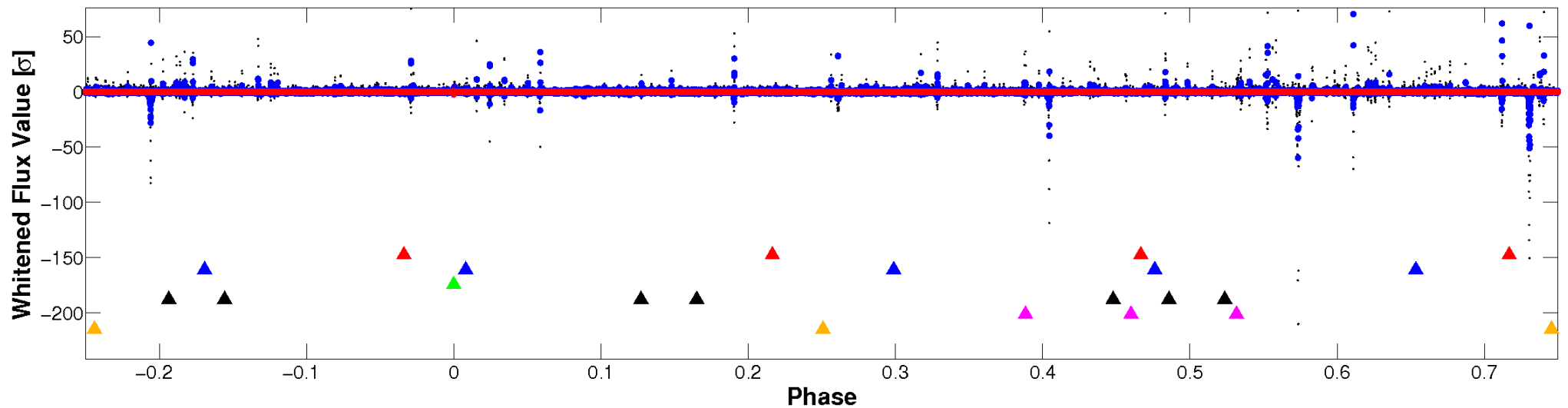


Non-Whitened Vs. Whitened Light Curve

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

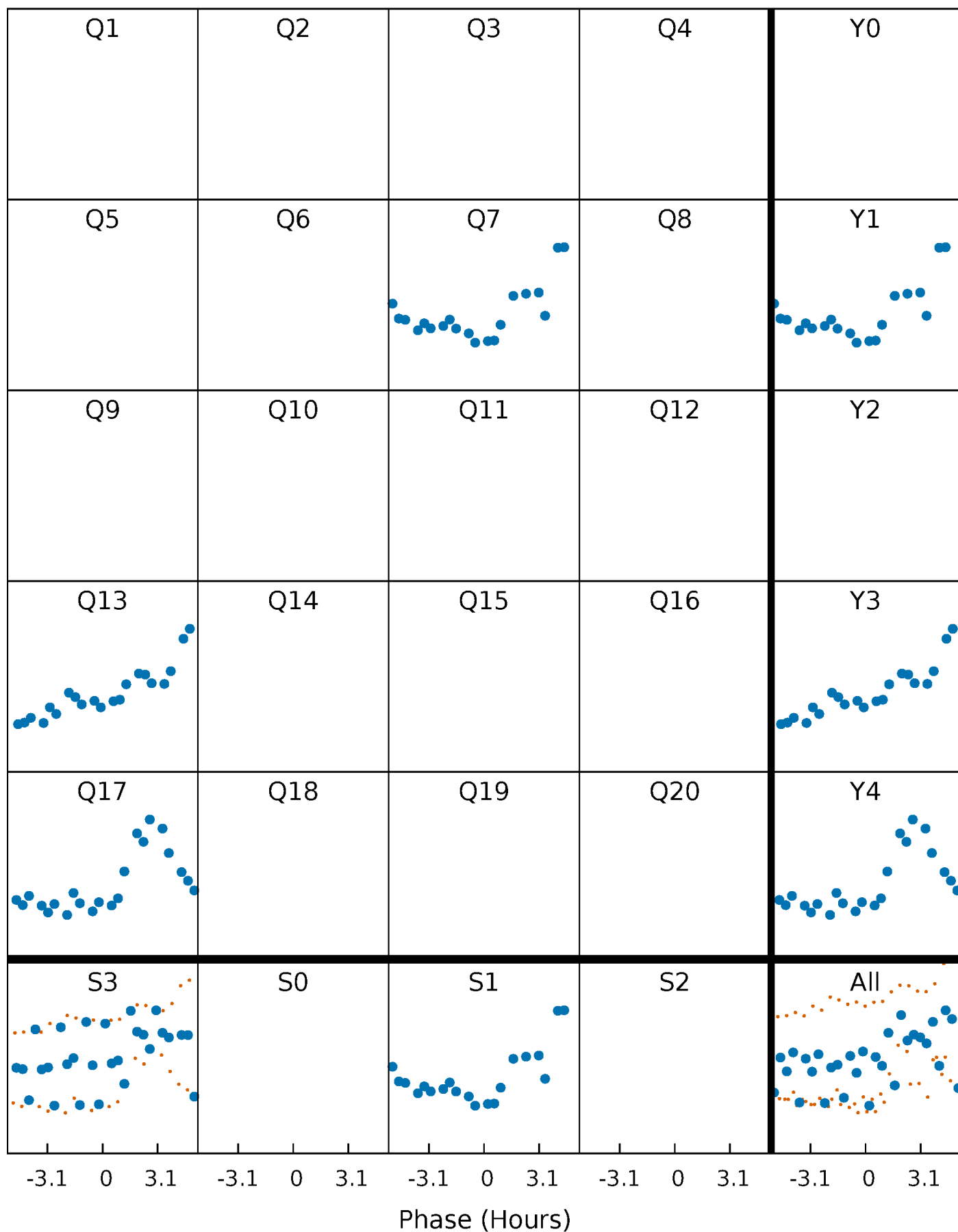


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



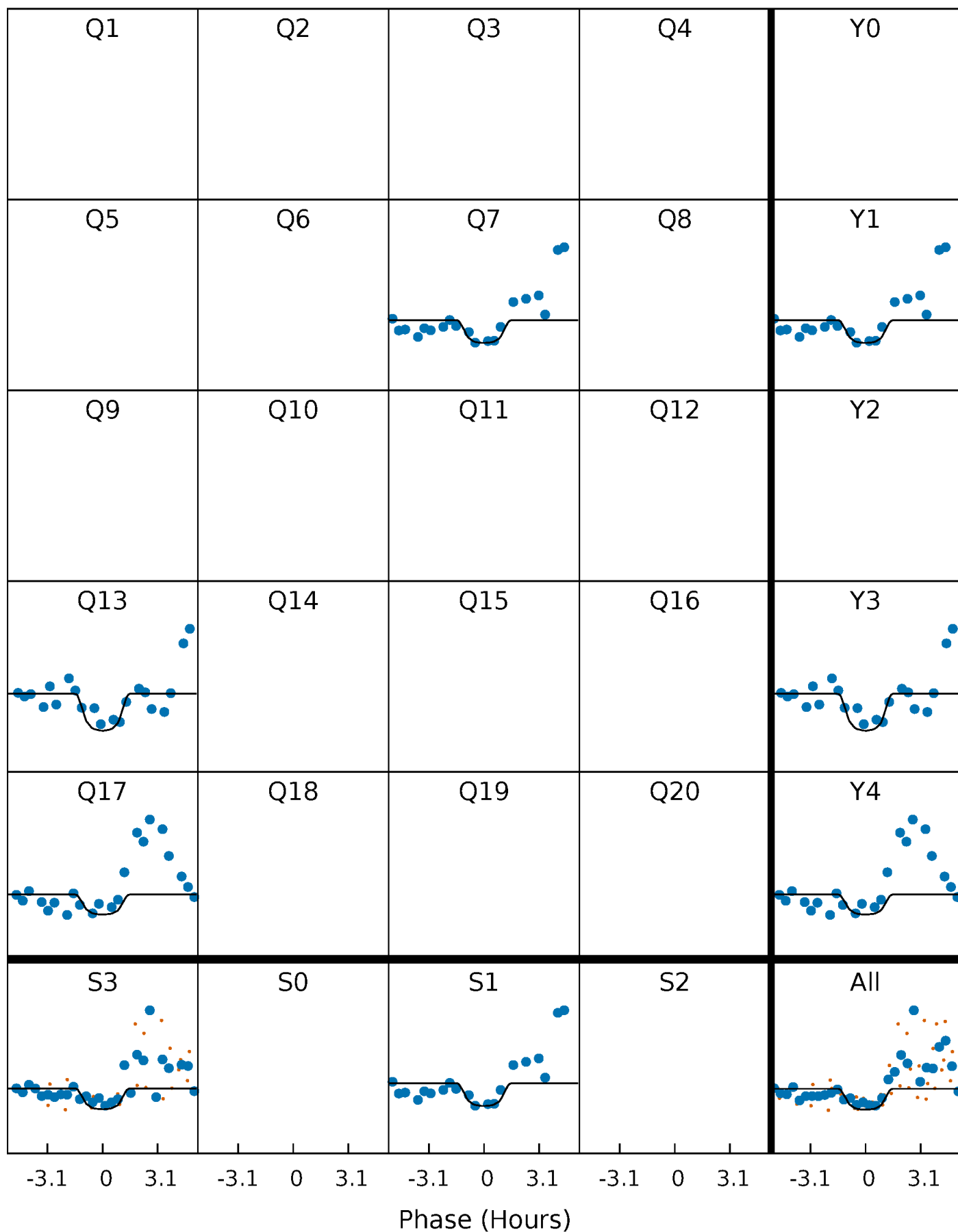
PDC Quarter-Phased Transit Curves

TCE 004067894-03 $P=311.695528$ Days $T_0=323.319786$ (BKJD)



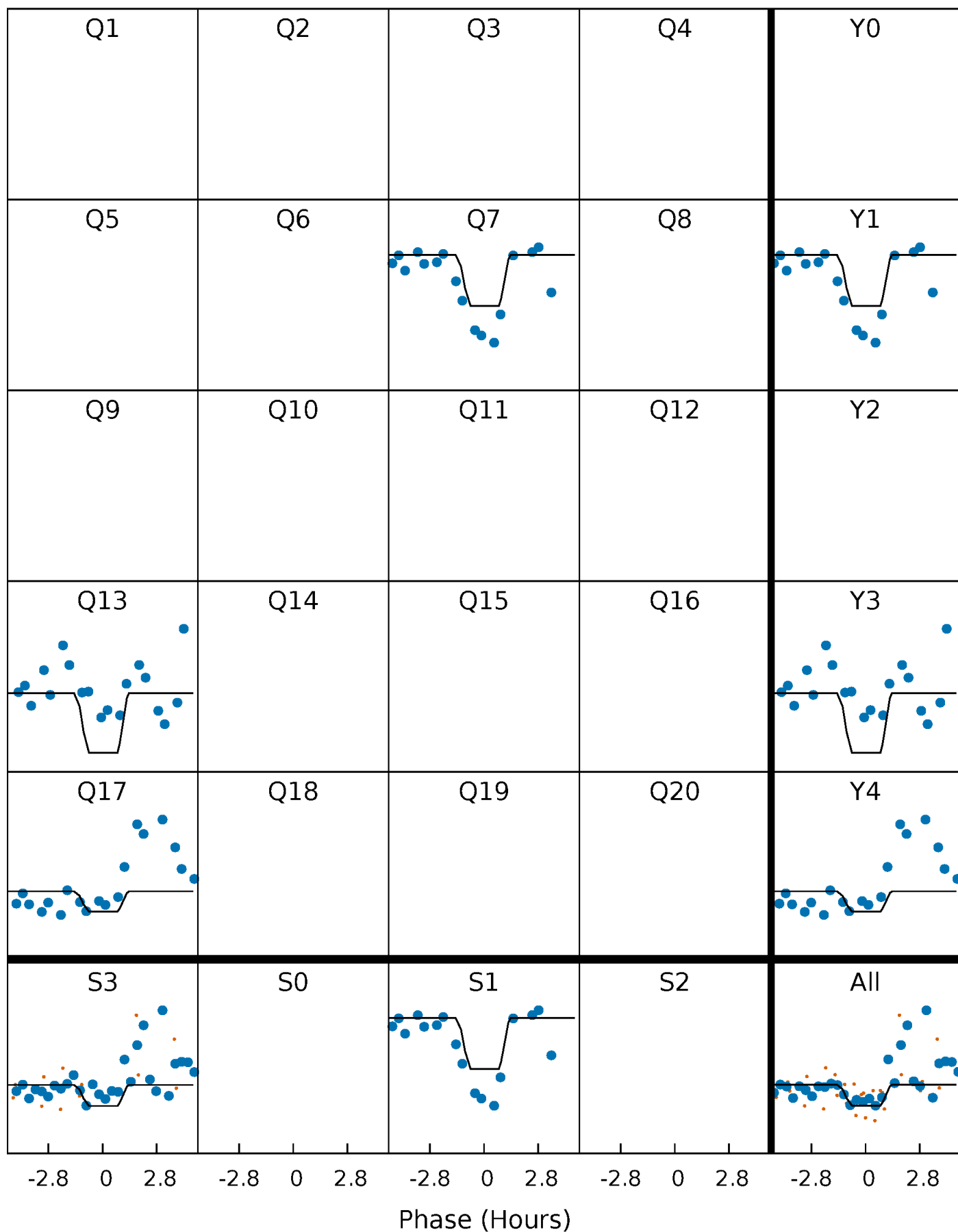
DV Quarter-Phased Transit Curves

TCE 004067894-03 $P=311.695528$ Days $T_0=323.319786$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

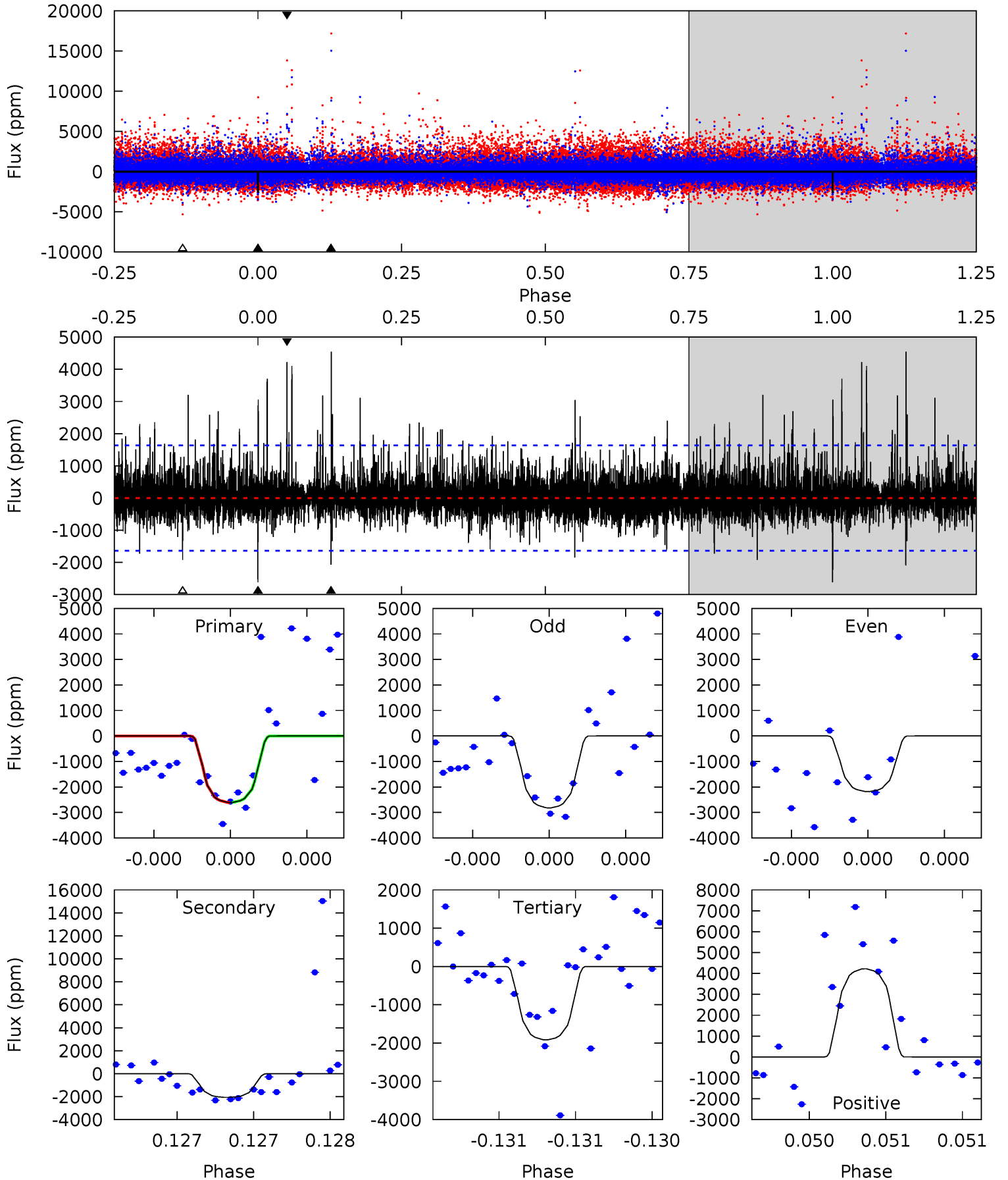
TCE 004067894-03 $P=311.695734$ Days $T_0=323.322582$ (BKJD)



DV Model-Shift Uniqueness Test

004067894-03, P = 311.695528 Days, E = 11.624258 Days

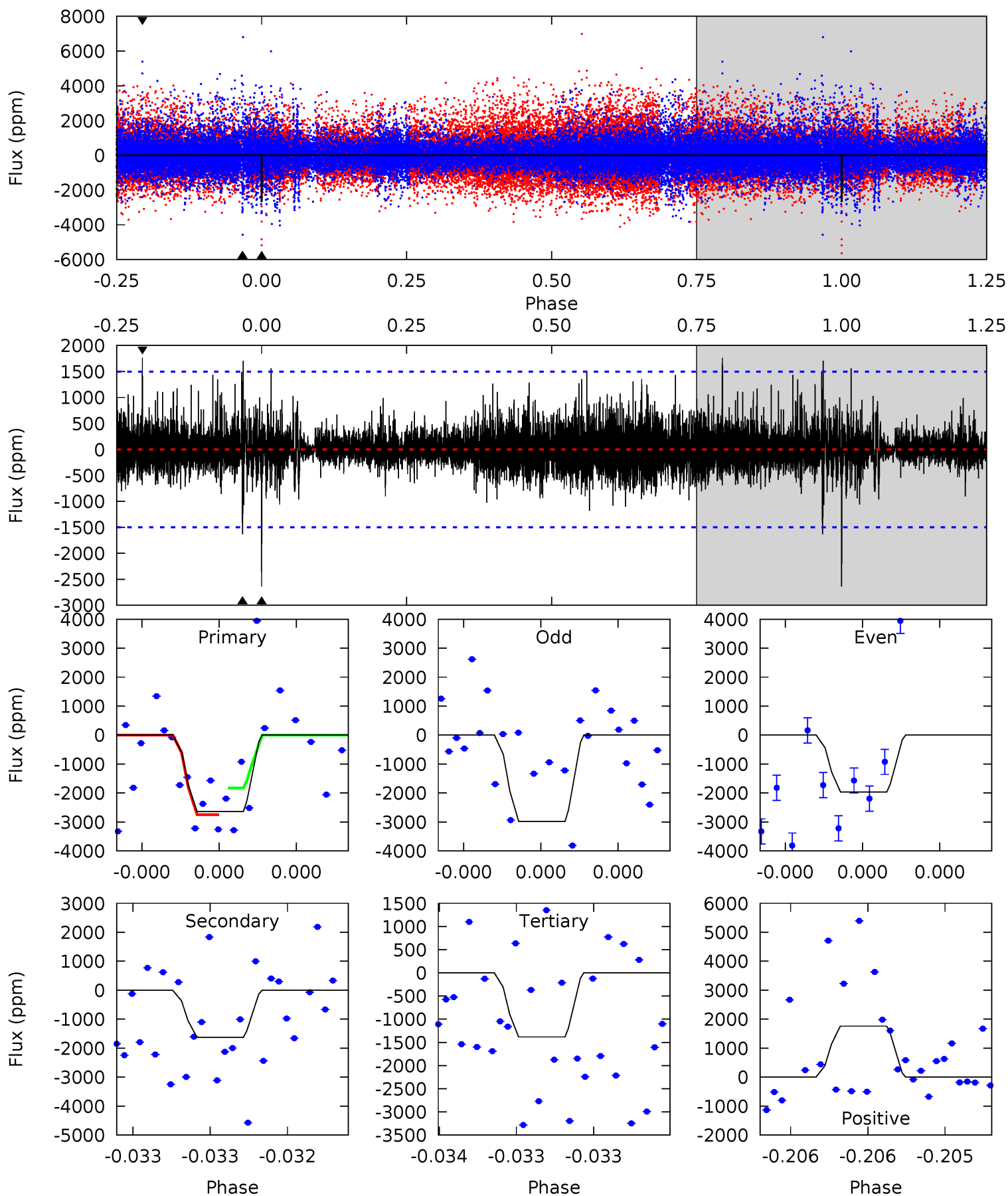
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.96	7.09	6.58	14.5	5.61	3.54	1.70	2.38	-5.54	0.51	-7.40	0.26	1.04	0.64	0.01



Alt Model-Shift Uniqueness Test

004067894-03, P = 311.695734 Days, E = 11.626848 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.94	6.14	5.22	6.64	5.65	3.59	1.12	4.72	3.30	0.92	-0.50	1.70	1.36	0.40	1.63



Stellar Parameters For KIC 004067894

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3360^{+55}_{-50}	$4.961^{+0.055}_{-0.050}$	$0.000^{+0.100}_{-0.100}$	$0.287^{+0.047}_{-0.038}$	$0.274^{+0.057}_{-0.041}$	$16.380^{+4.916}_{-3.772}$
	+2%/-1%	+1%/-1%	+inf%/-inf%	+16%/-13%	+21%/-15%	+30%/-23%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 004067894-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2067 ± 291	$1.91^{+1.05}_{-0.91}$	145^{+4}_{-4}	3081^{+691}_{-351}	$106938^{+280827}_{-62745}$
Alt.	-1629 ± 265	$1.85^{+1.06}_{-0.94}$	145^{+4}_{-4}	3011^{+718}_{-356}	$93632^{+294903}_{-58835}$

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

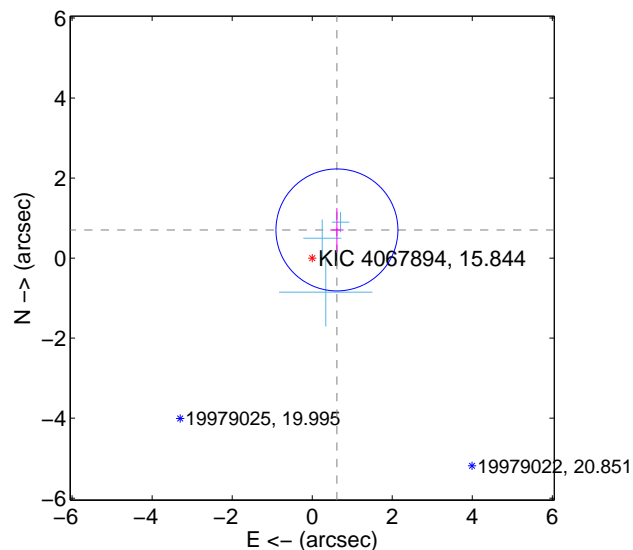
Supplemental centroid analysis for 004067894-03. Kepler magnitude: 15.84. Transit SNR 7.49

There are 3 quarters with good PRF difference image offsets

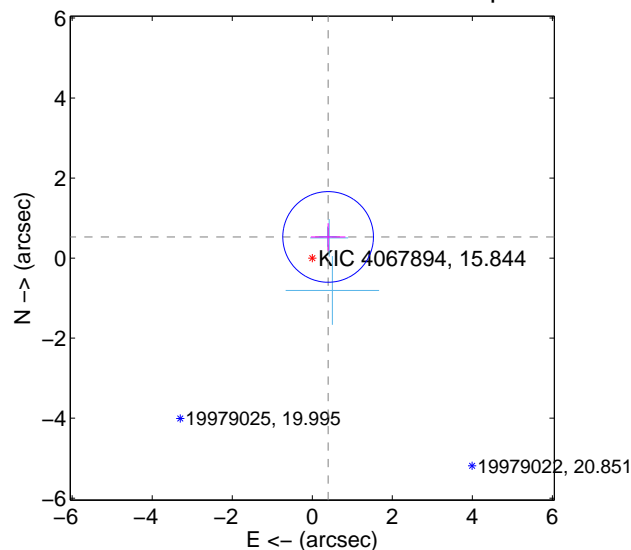
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.936 ± 0.508	1.84	-0.618 ± 0.169	0.704 ± 0.546
PRF-fit source offset from KIC position	0.661 ± 0.377	1.75	-0.396 ± 0.431	0.529 ± 0.344
photometric centroid source offset	1.51 ± 1.18	1.28	0.81 ± 1.34	-1.27 ± 1.11

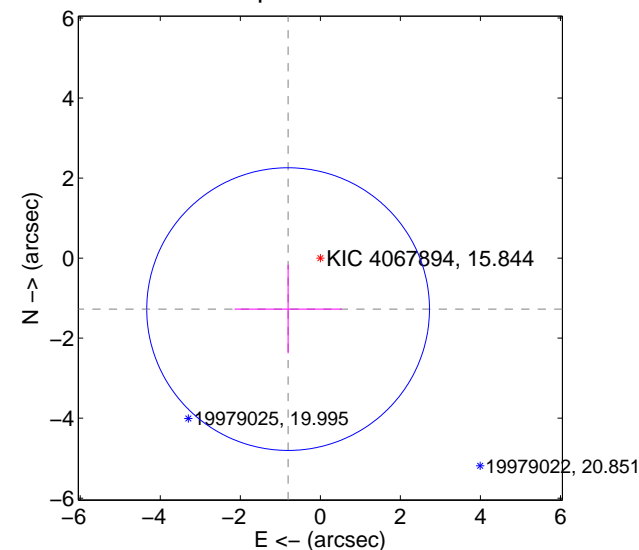
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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



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

Q5 no difference image



Q5 no OOT image



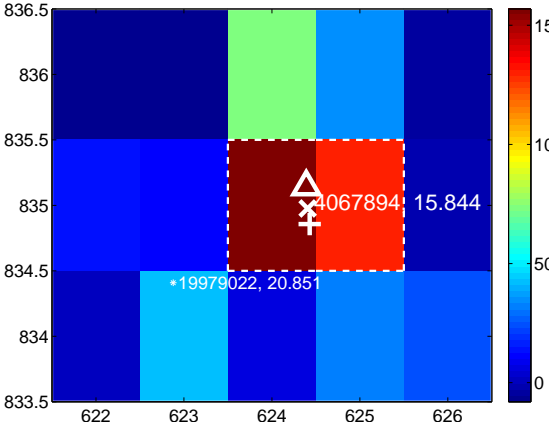
Q6 no difference image



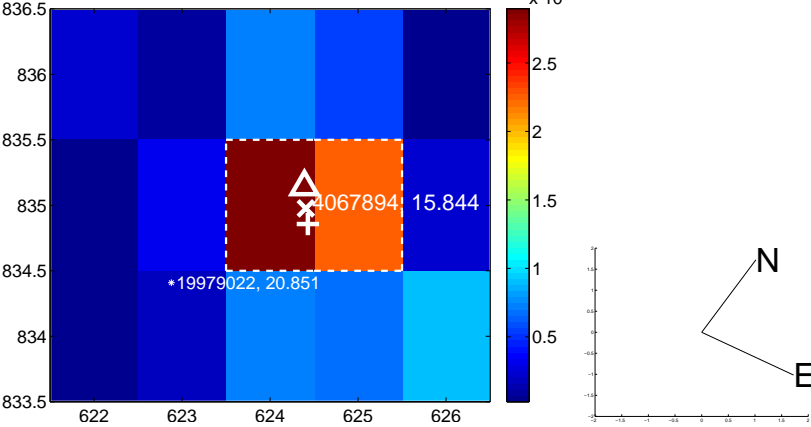
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



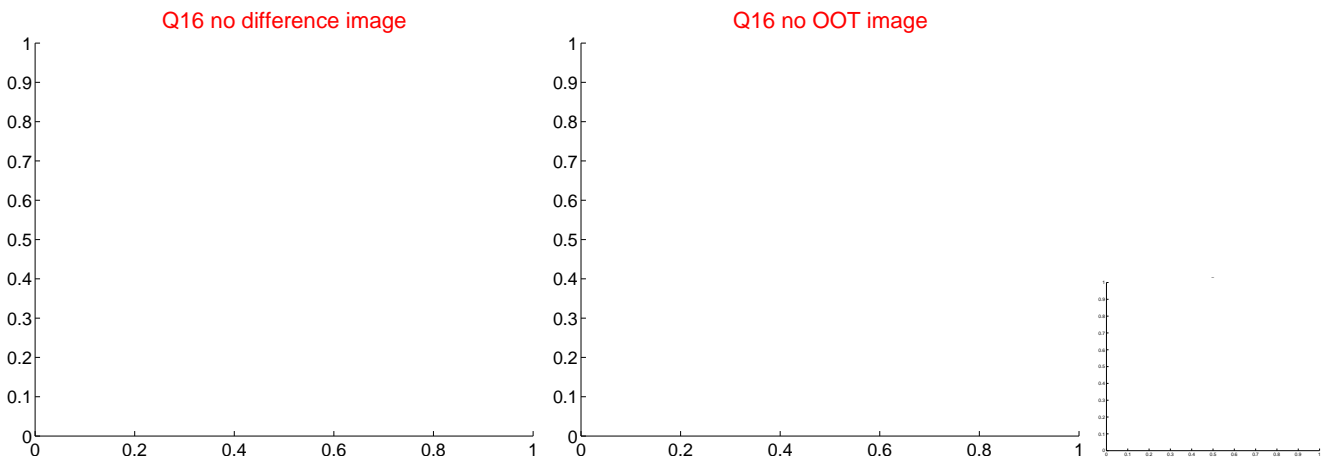
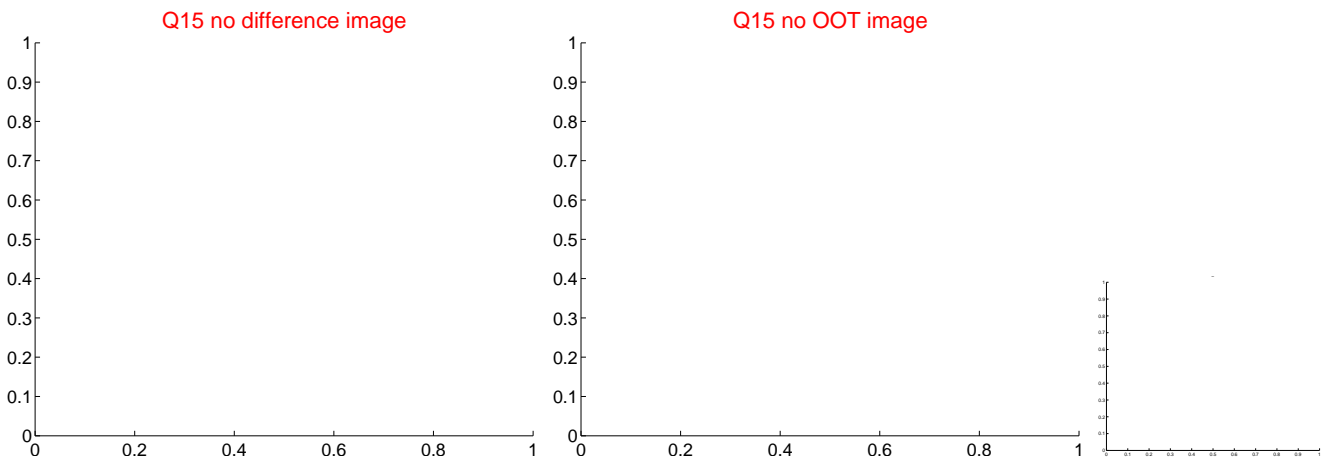
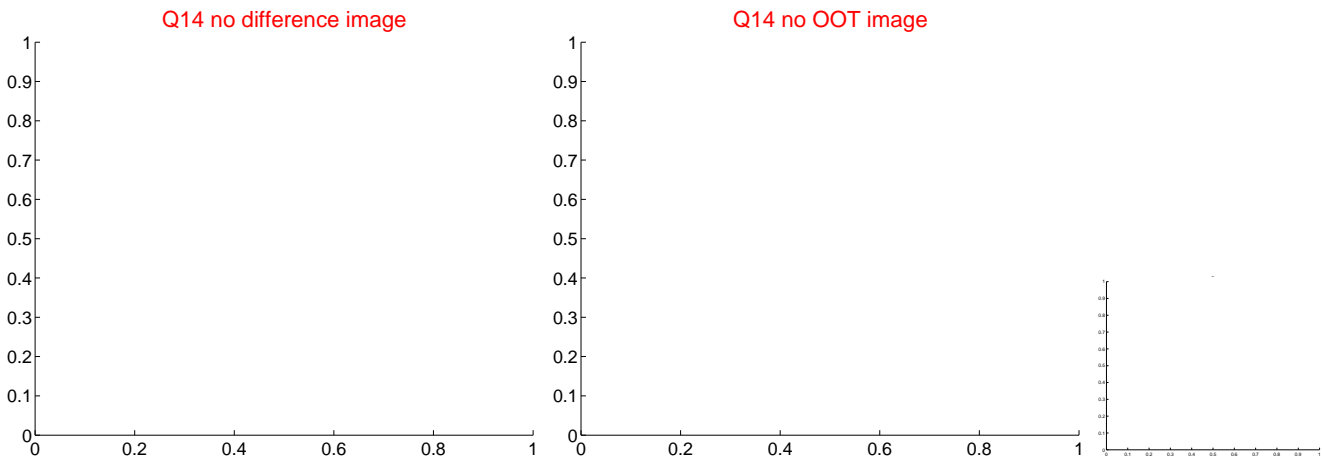
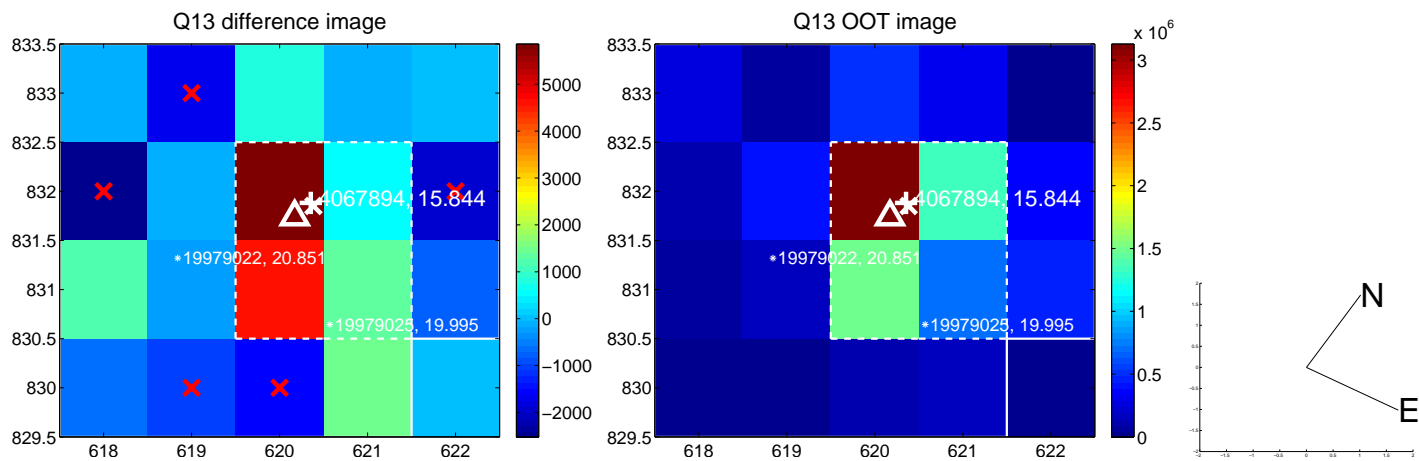
Q8 no OOT image



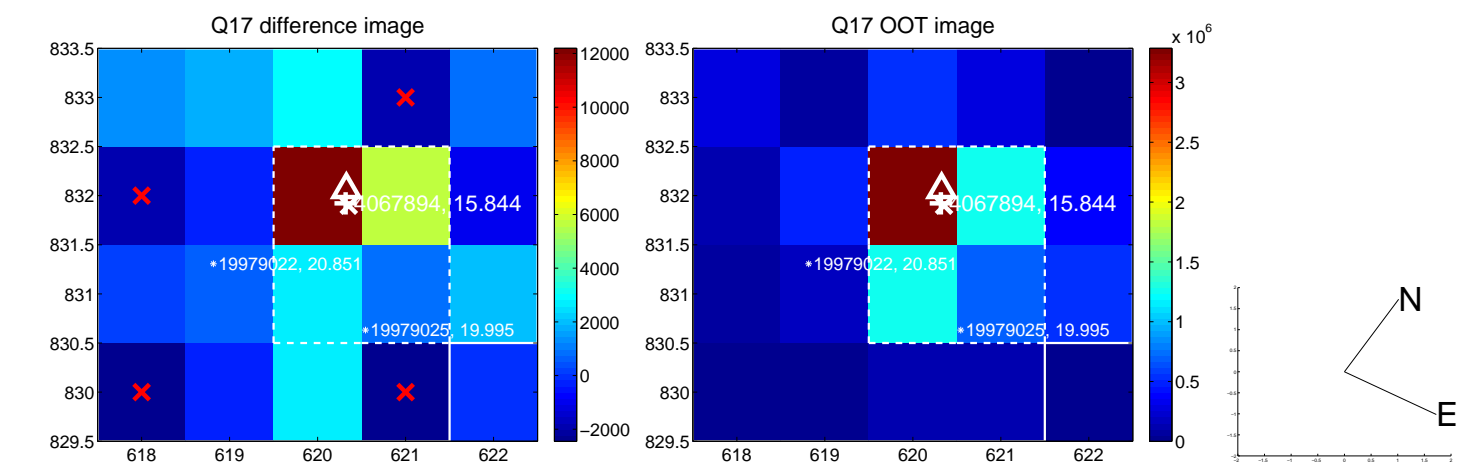
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



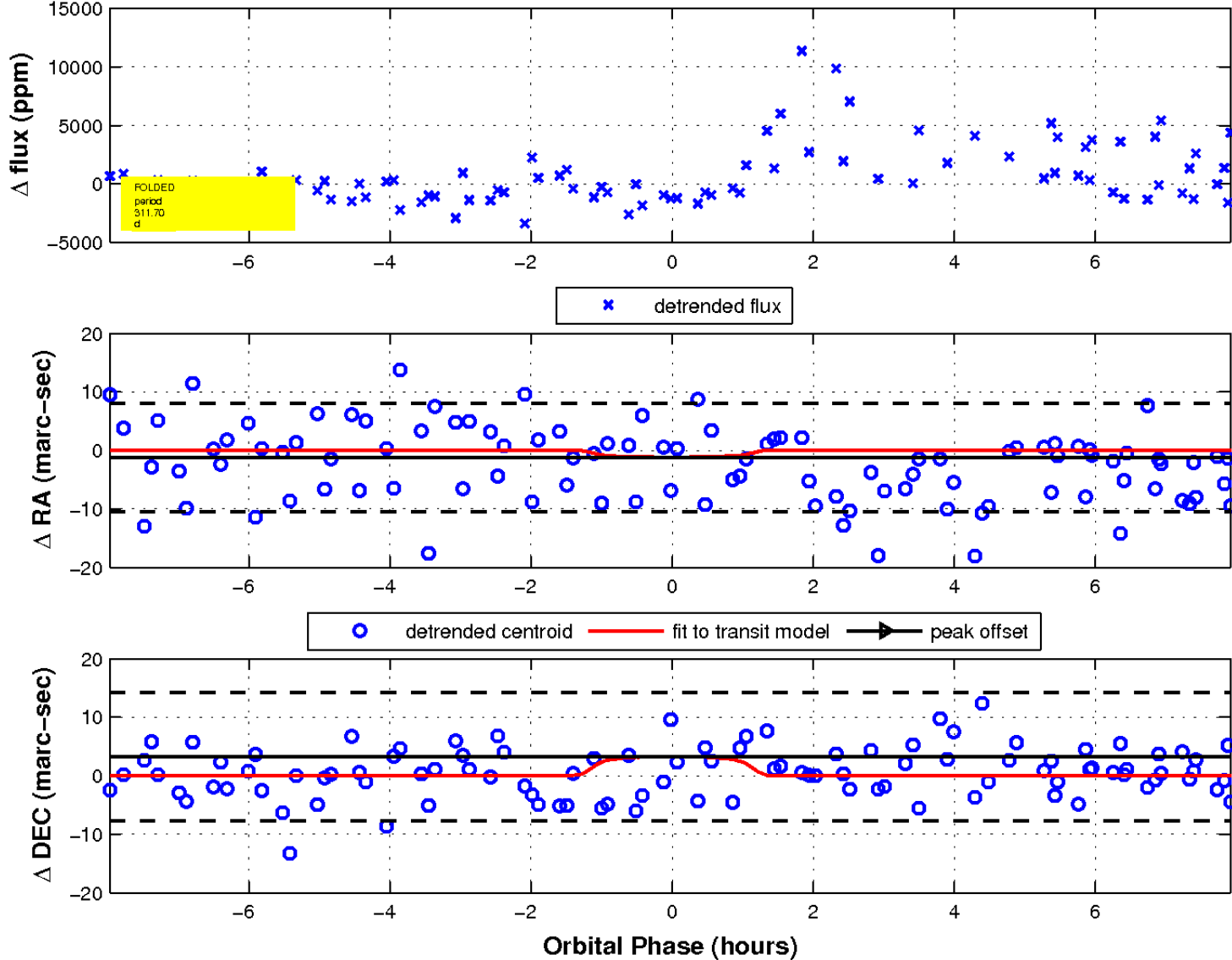
white \times : KIC target position; +: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



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

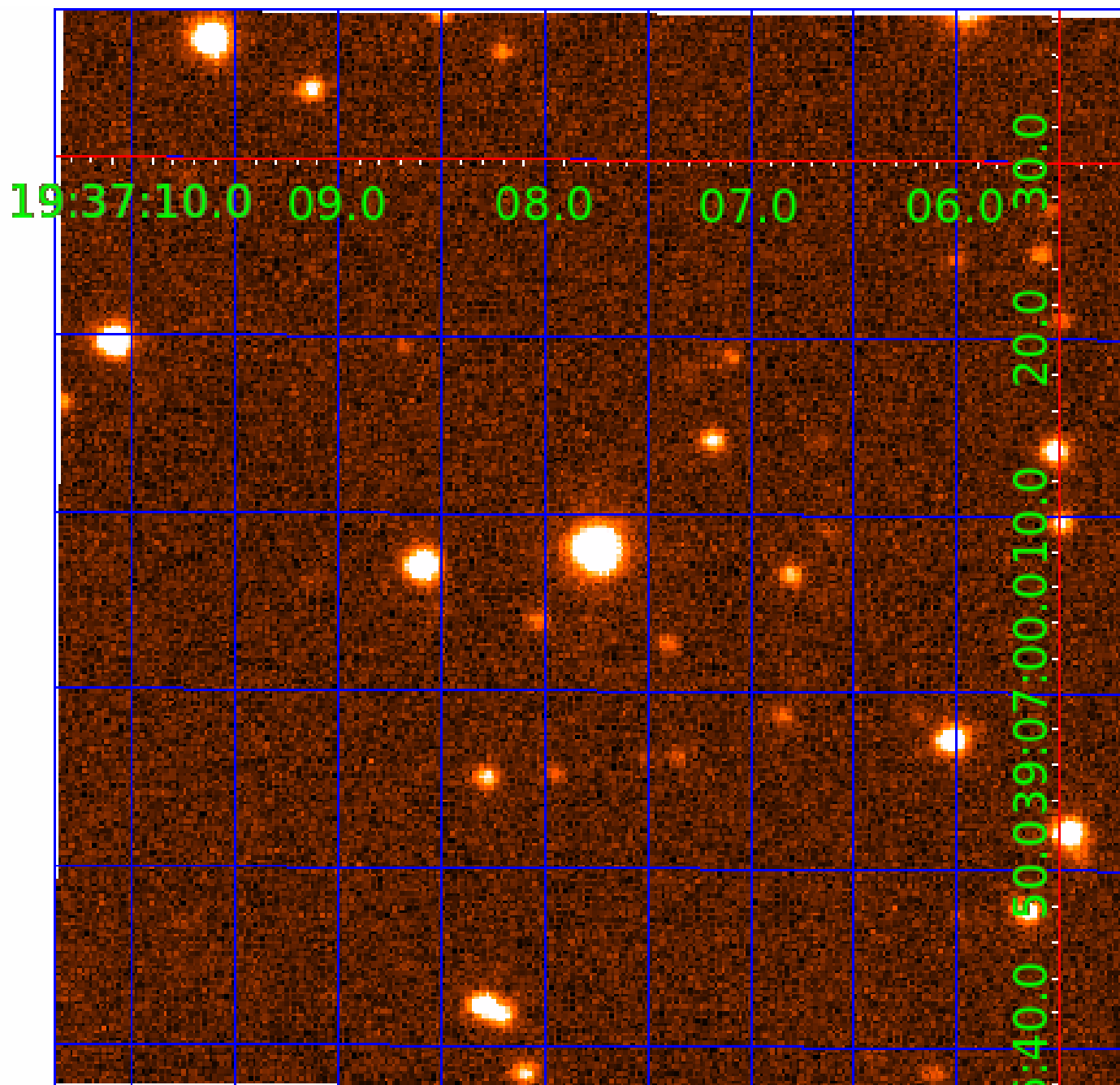


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 004067894

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})
004067894-01	OBS	No	389.695718	312.777131	4737.0	14.588	11.1	10.5	0.29	3360	2.00	0.02
004067894-02	OBS	No	256.424130	325.851712	3055.1	10.443	12.5	8.0	0.29	3360	1.81	0.04
004067894-03	OBS	No	311.695528	323.319786	3501.1	2.680	9.5	7.5	0.29	3360	1.87	0.03
004067894-04	OBS	No	211.733703	151.226575	2653.8	5.142	13.5	6.7	0.29	3360	1.74	0.05
004067894-05	OBS	No	601.049795	177.351041	2941.3	5.791	11.5	6.2	0.29	3360	1.97	0.01
004067894-06	OBS	No	465.931432	247.261542	2435.3	14.542	9.5	5.1	0.29	3360	1.40	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004067894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
004067894-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004067894-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004067894-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-06	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

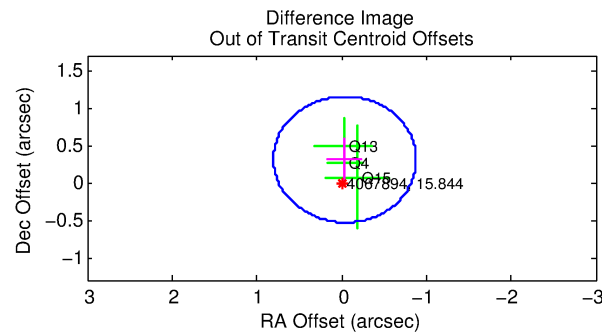
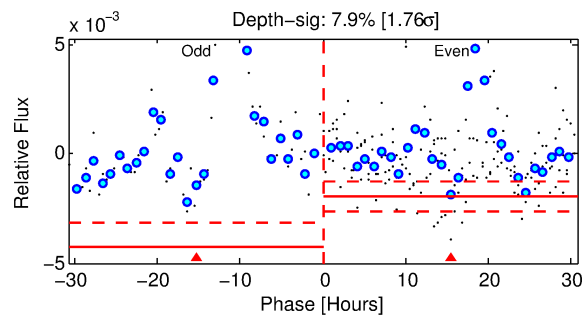
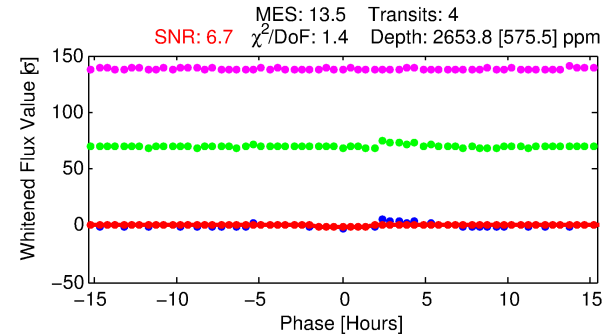
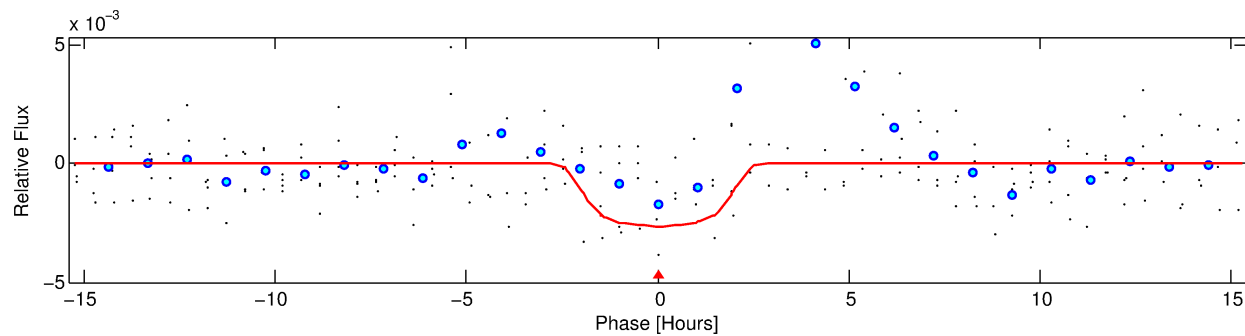
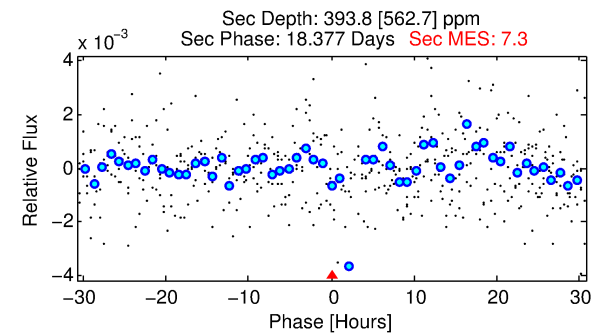
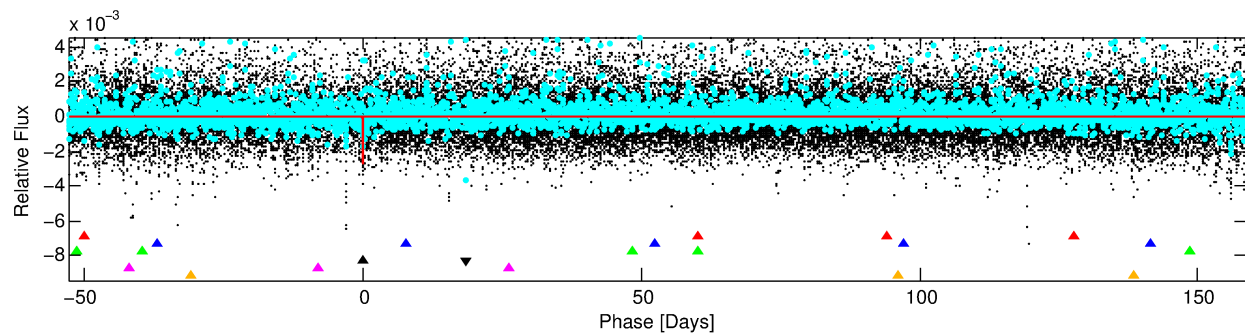
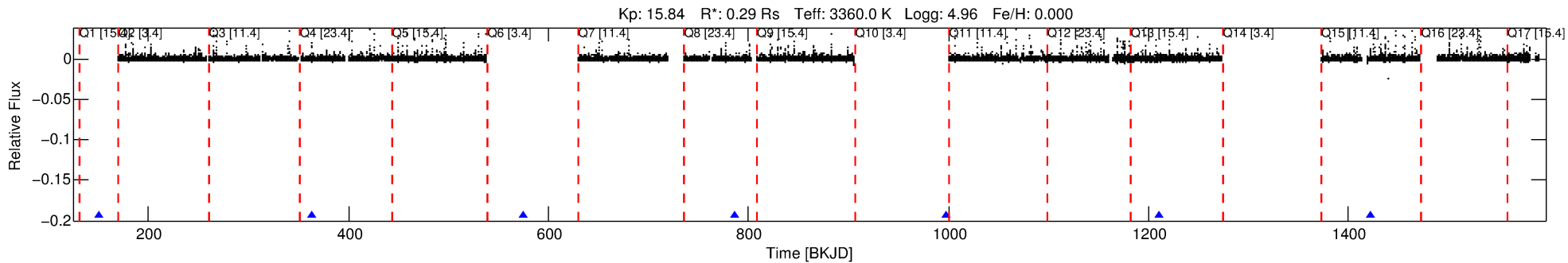
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004067894-04

No Significant Match Found

DV One-Page Summary

KIC: 4067894 Candidate: 4 of 6 Period: 211.734 d



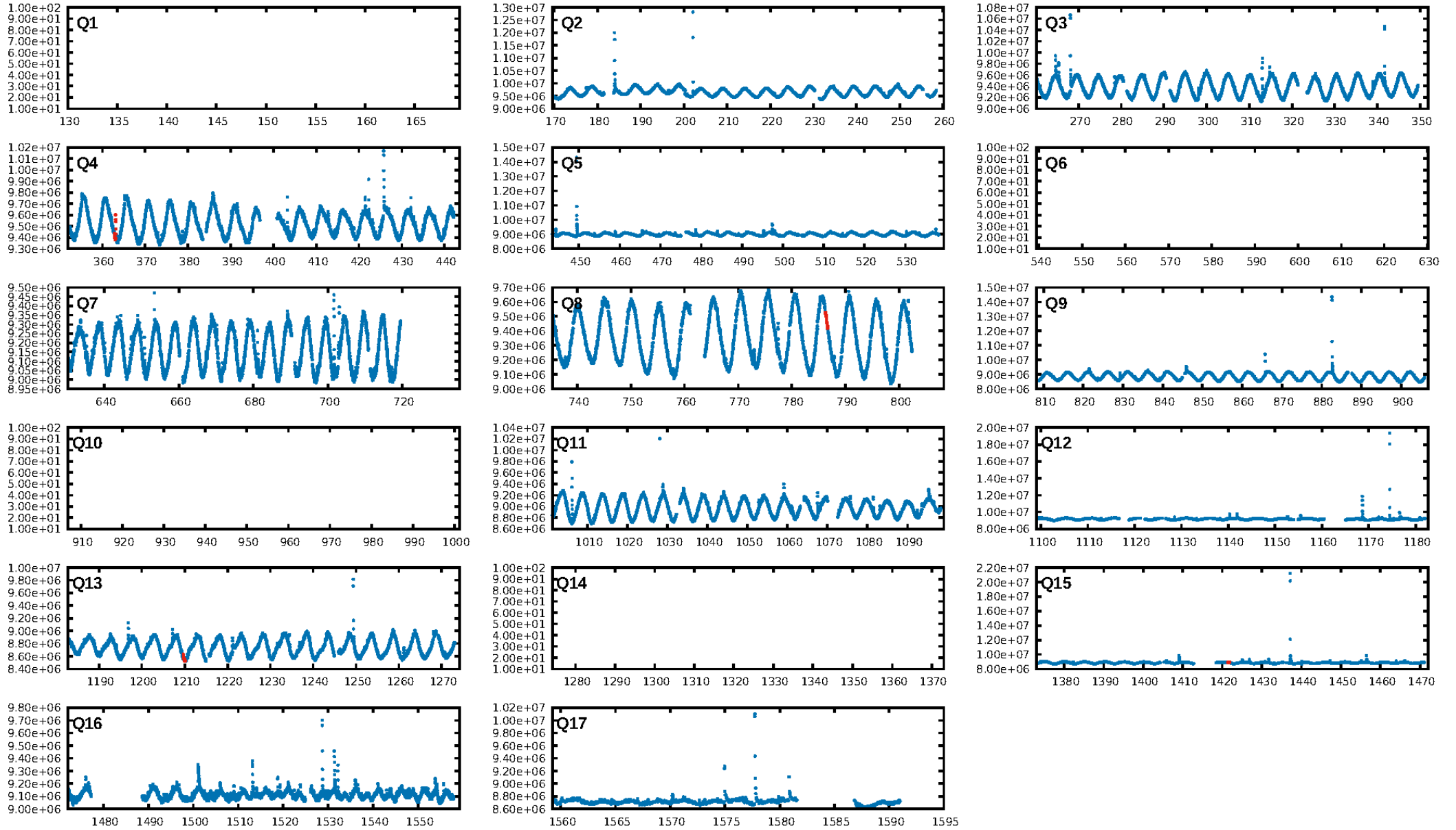
DV Fit Results:

Period = 211.73370 [0.00436] d
Epoch = 151.2266 [0.0181] BKJD
Rp/R* = 0.0554 [0.0106]
a/R* = 182.76 [94.06]
b = 0.88 [0.13]
Seff = 0.05 [0.01]
Teq = 118 [5] K
Rp = 1.74 [0.44] Re
a = 0.4520 [0.0529] AU
Ag = 14700.29 [21834.77] [0.67σ]
Teffp = 2011 [744] K [2.54σ]

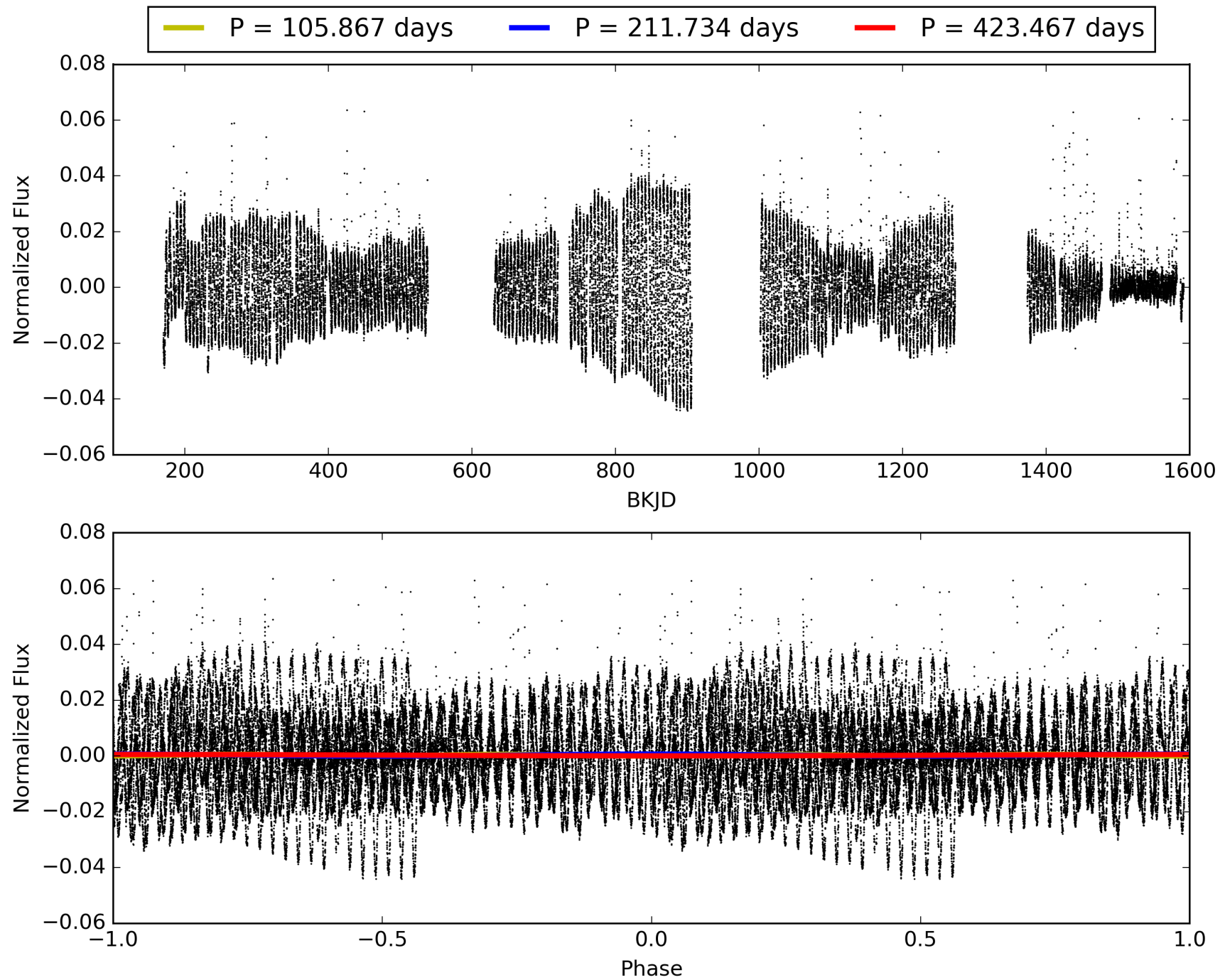
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [92.14σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 63.0%
Bootstrap-pfa: 1.30e-16
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.222
Centroid-sig: 64.9%
Centroid-so: 0.913 arcsec [0.92σ]
OotOffset-rm: 0.311 arcsec [1.11σ]
KicOffset-rm: 0.115 arcsec [0.37σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 004067894-04, PDC Light Curves

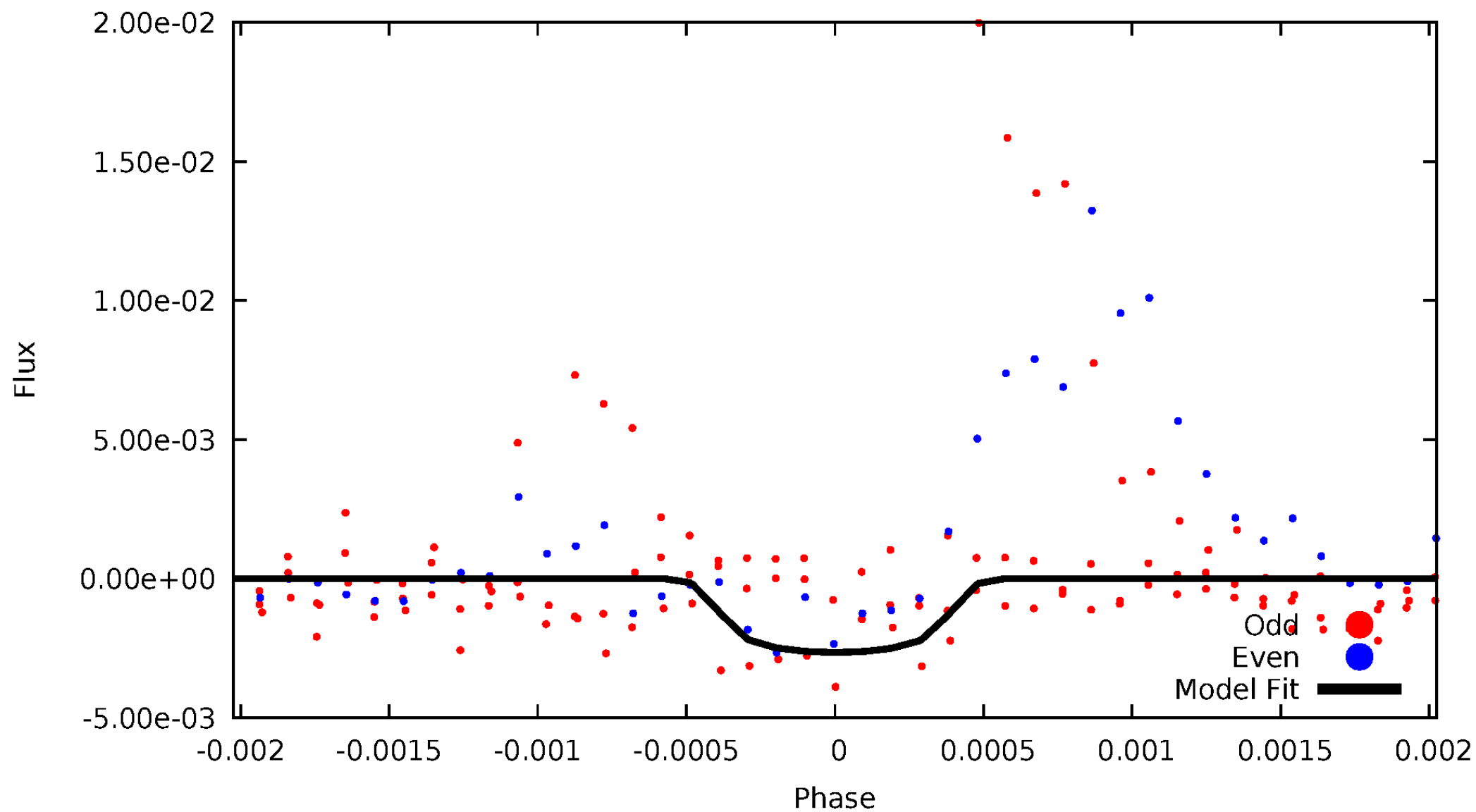


TCE 004067894-04



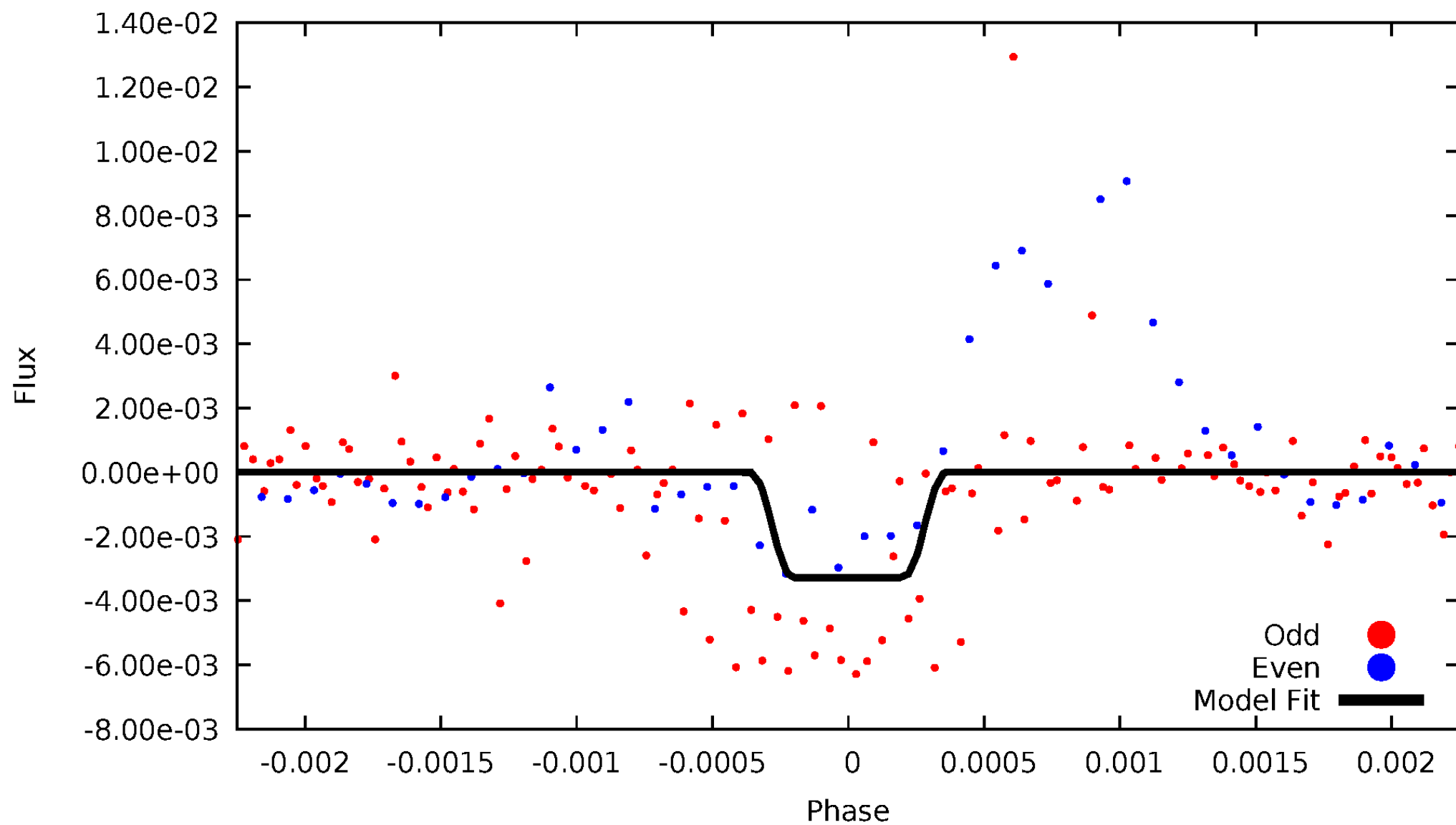
DV Odd/Even

TCE 004067894-04



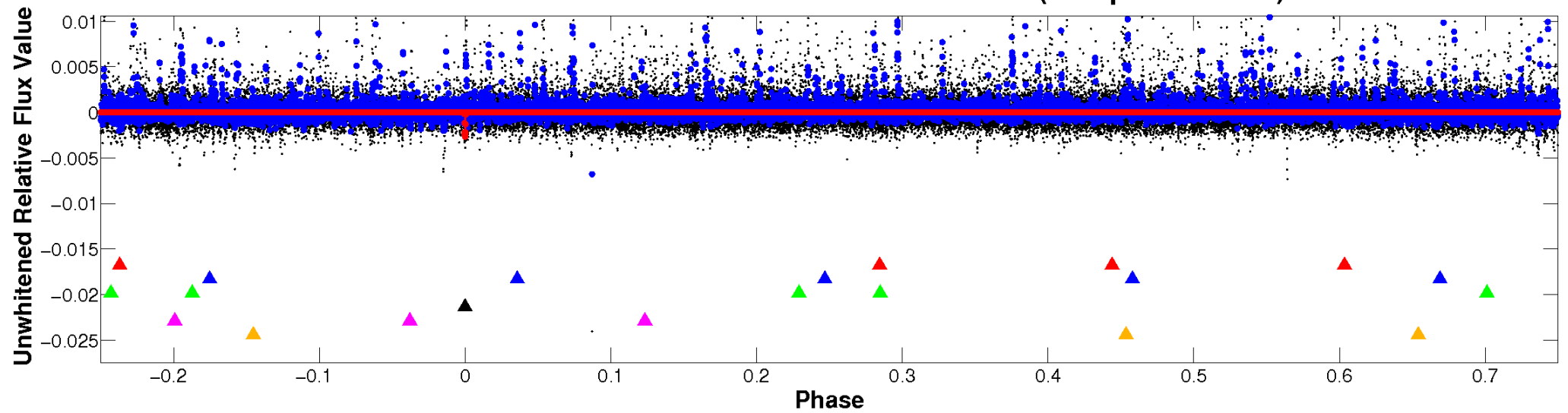
ALT Odd/Even

TCE 004067894-04

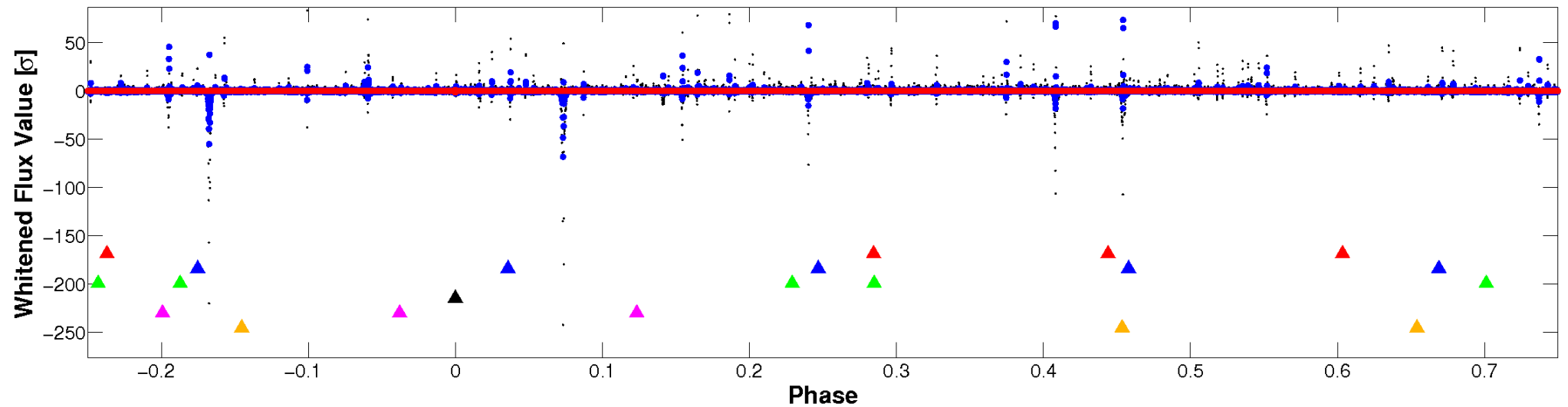


Non-Whitened Vs. Whitened Light Curve

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

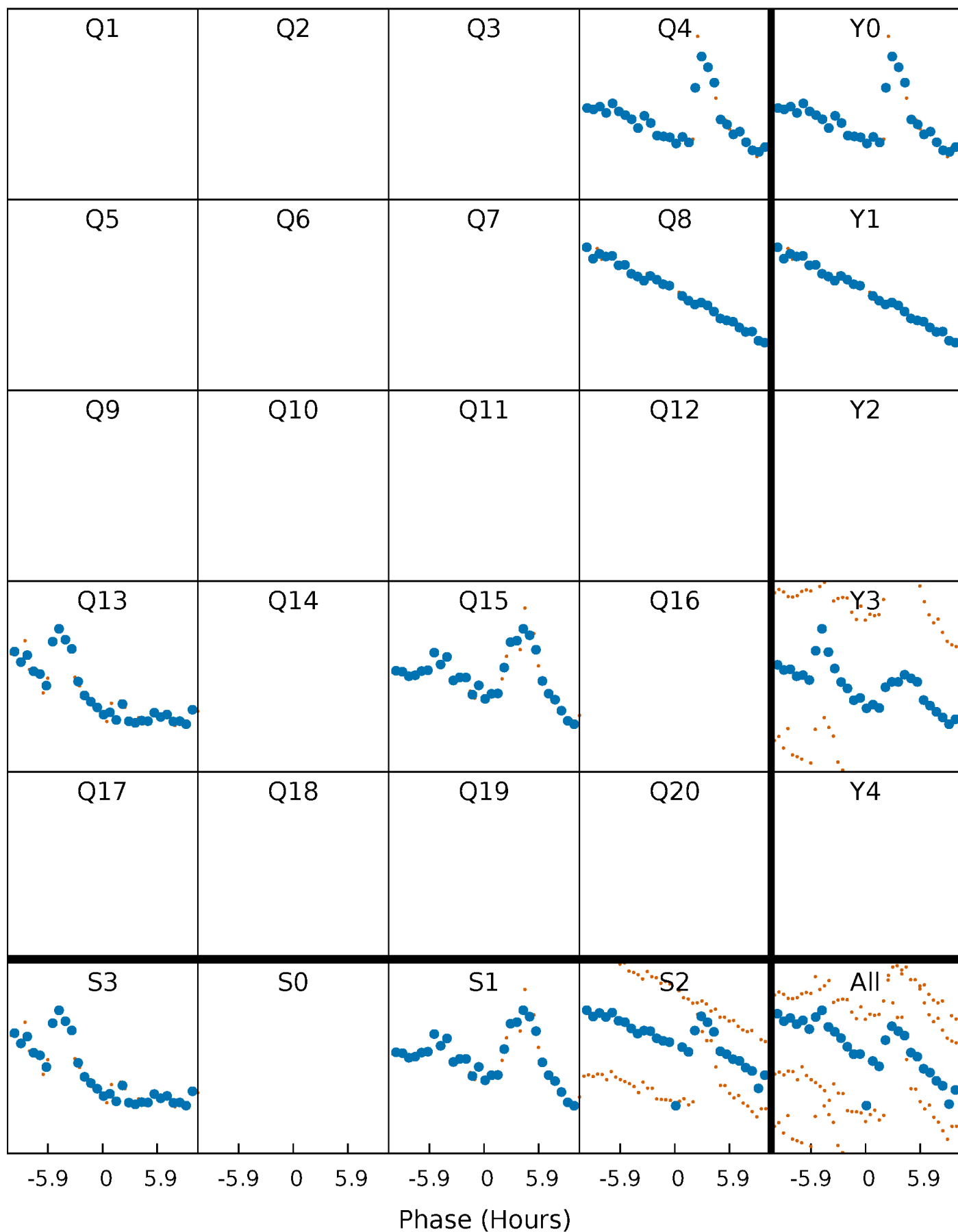


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



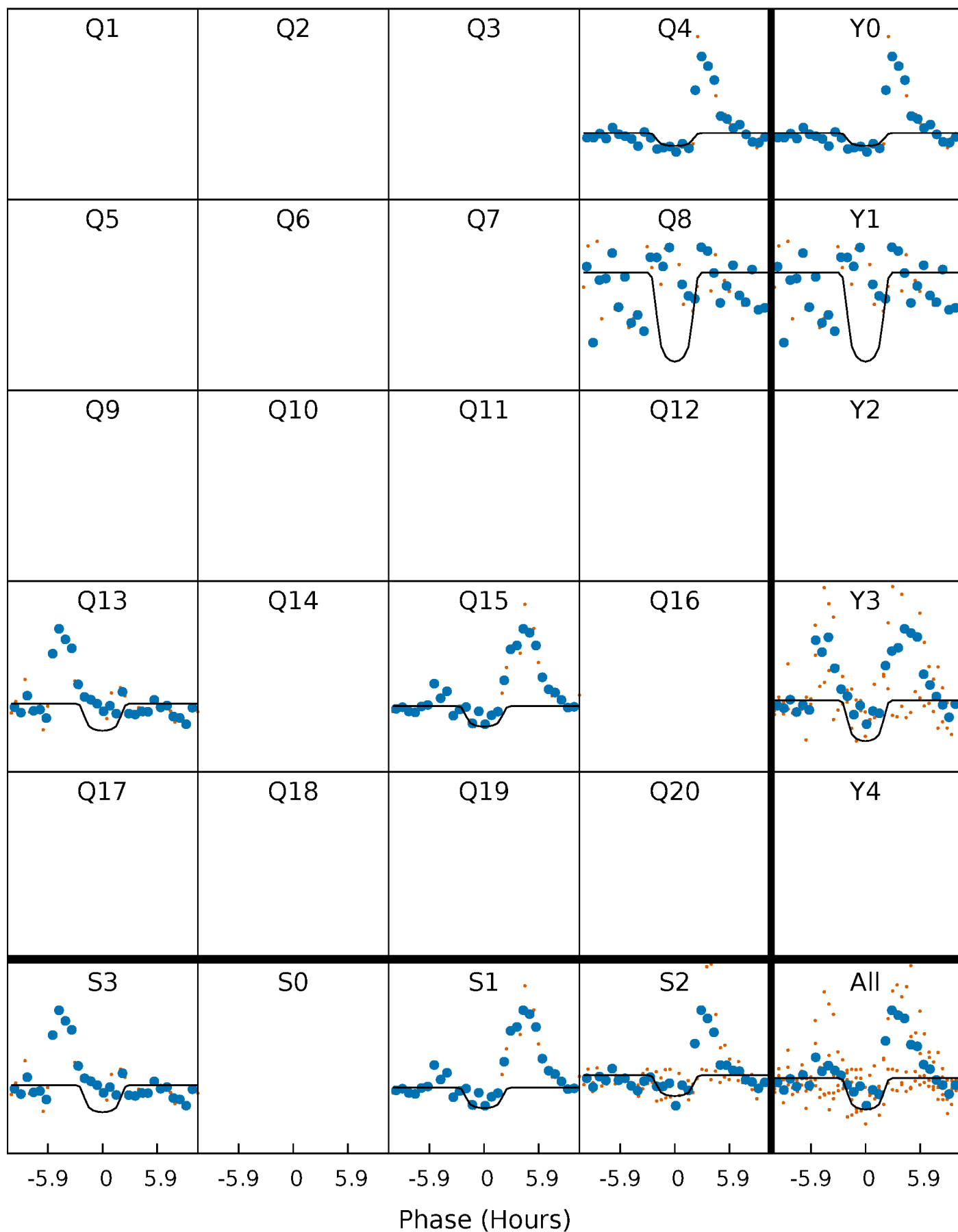
PDC Quarter-Phased Transit Curves

TCE 004067894-04 $P=211.733703$ Days $T_0=151.226575$ (BKJD)



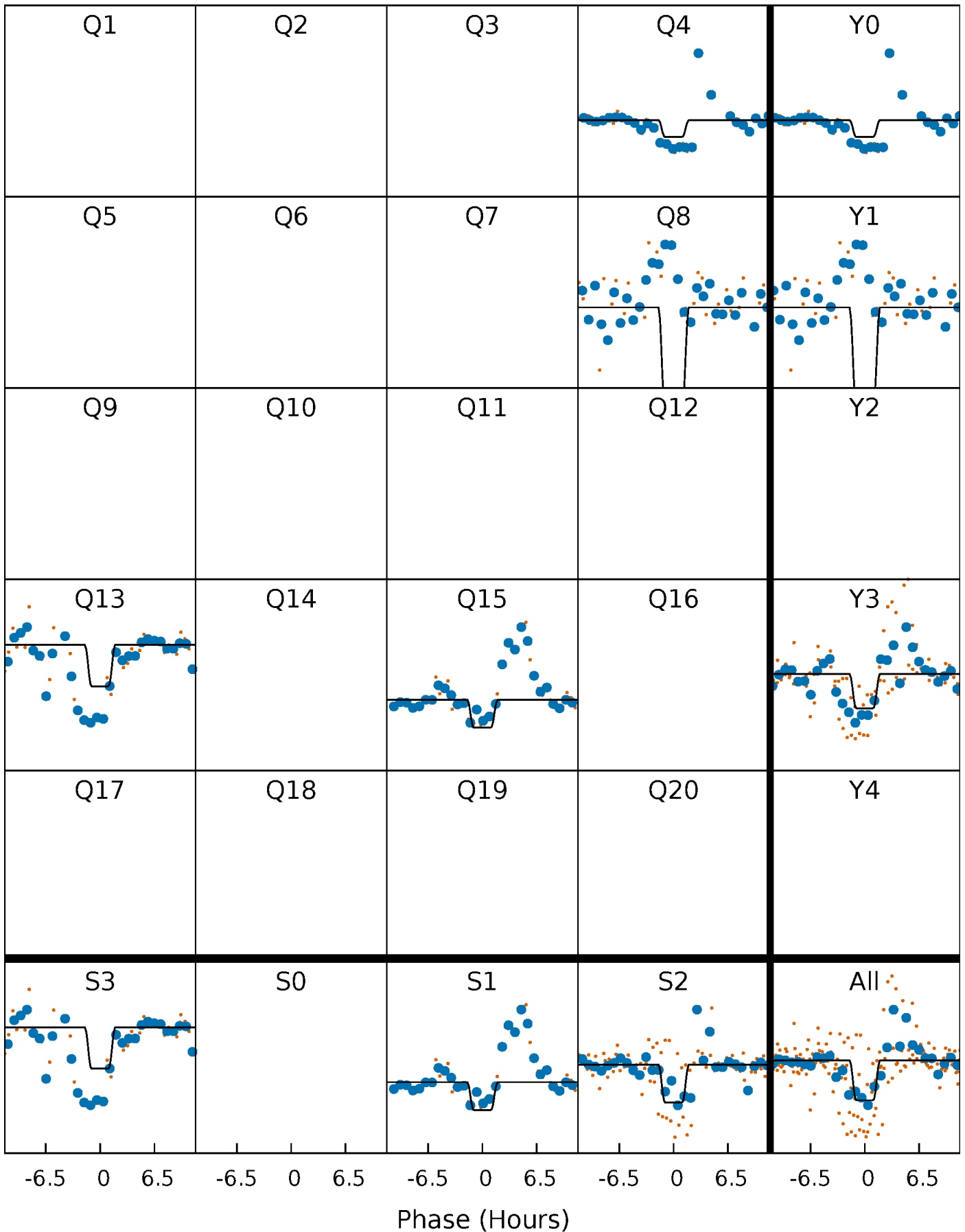
DV Quarter-Phased Transit Curves

TCE 004067894-04 $P=211.733703$ Days $T_0=151.226575$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

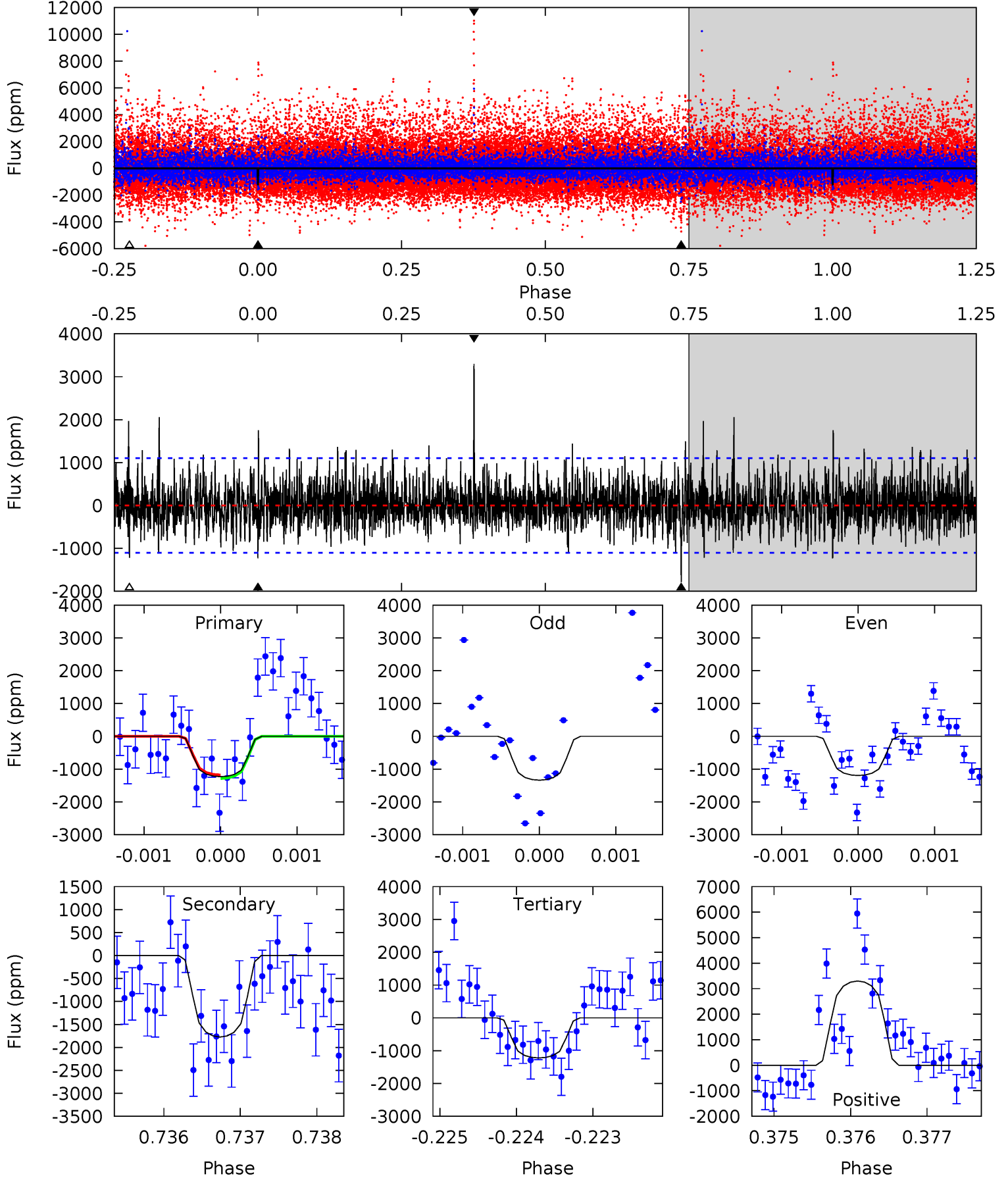
TCE 004067894-04 $P=211.736215$ Days $T_0=151.218482$ (BKJD)



DV Model-Shift Uniqueness Test

004067894-04, P = 211.733703 Days, E = 151.226575 Days

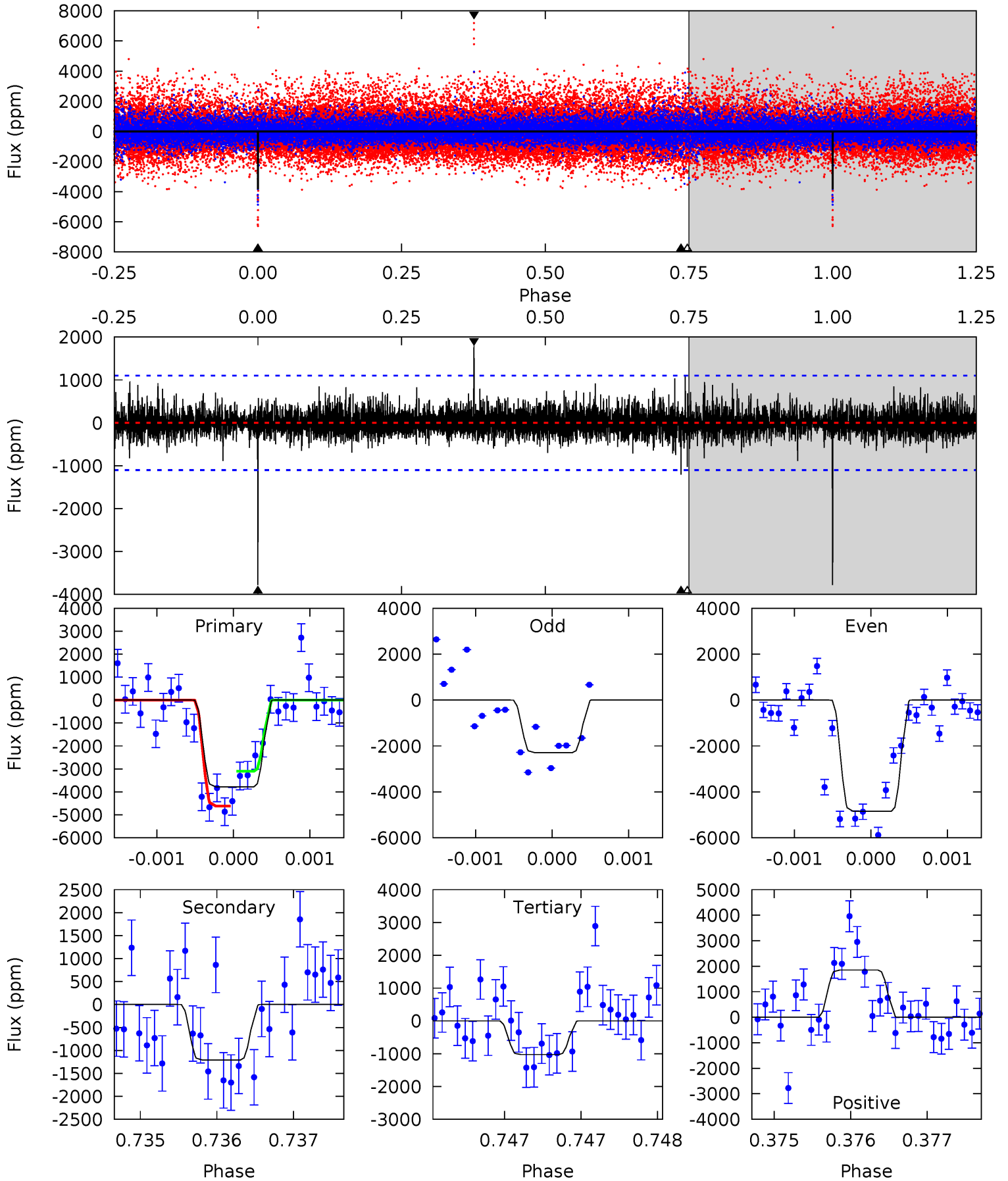
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.08	8.75	6.02	16.3	5.44	3.27	1.89	0.06	-10.2	2.73	-7.54	0.22	1.59	0.65	0.26



Alt Model-Shift Uniqueness Test

004067894-04, P = 211.736215 Days, E = 151.218482 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	6.05	5.14	9.27	5.51	3.39	1.10	13.8	9.68	0.91	-3.22	5.37	0.78	0.33	3.71



Stellar Parameters For KIC 004067894

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3360^{+55}_{-50}	$4.961^{+0.055}_{-0.050}$	$0.000^{+0.100}_{-0.100}$	$0.287^{+0.047}_{-0.038}$	$0.274^{+0.057}_{-0.041}$	$16.380^{+4.916}_{-3.772}$
	+2%/-1%	+1%/-1%	+inf%/-inf%	+16%/-13%	+21%/-15%	+30%/-23%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 004067894-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1773 ± 203	$1.72^{+0.40}_{-0.37}$	165^{+5}_{-5}	3101^{+230}_{-169}	68170^{+42545}_{-22820}
Alt.	-1208 ± 199	$1.79^{+0.38}_{-0.33}$	165^{+5}_{-5}	2905^{+187}_{-156}	42089^{+23263}_{-14360}

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

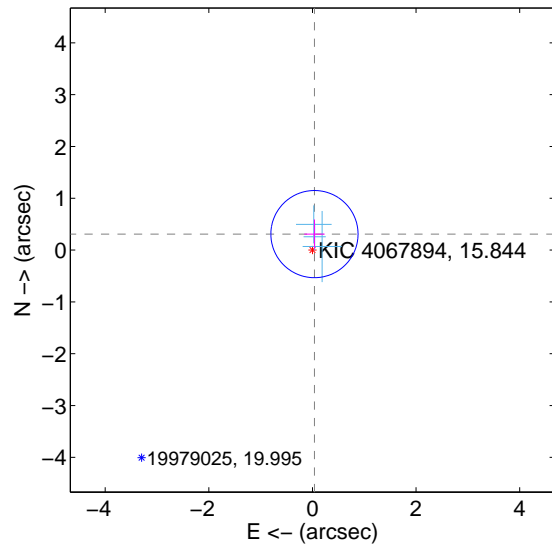
Supplemental centroid analysis for 004067894-04. Kepler magnitude: 15.84. Transit SNR 6.71

There are 3 quarters with good PRF difference image offsets

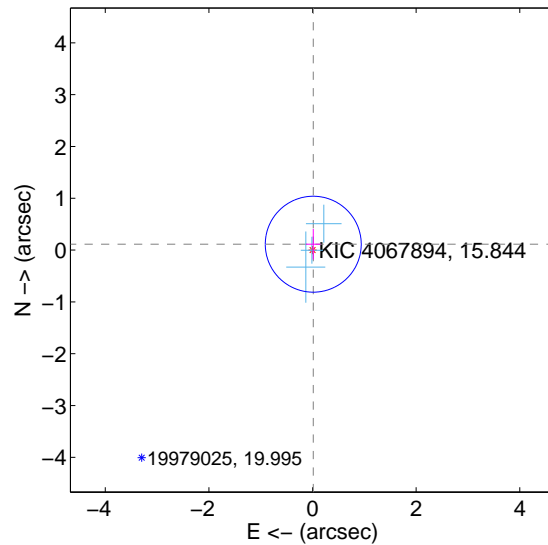
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.311 ± 0.280	1.11	-0.039 ± 0.196	0.309 ± 0.282
PRF-fit source offset from KIC position	0.115 ± 0.309	0.37	-0.014 ± 0.139	0.114 ± 0.296
photometric centroid source offset	0.91 ± 0.99	0.92	0.37 ± 1.12	-0.83 ± 0.97

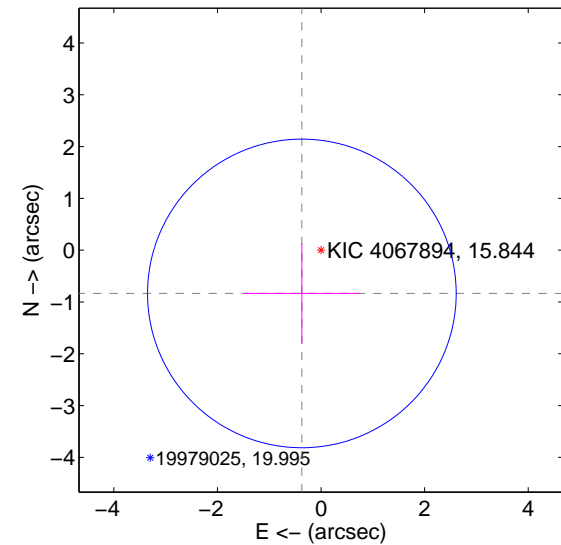
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

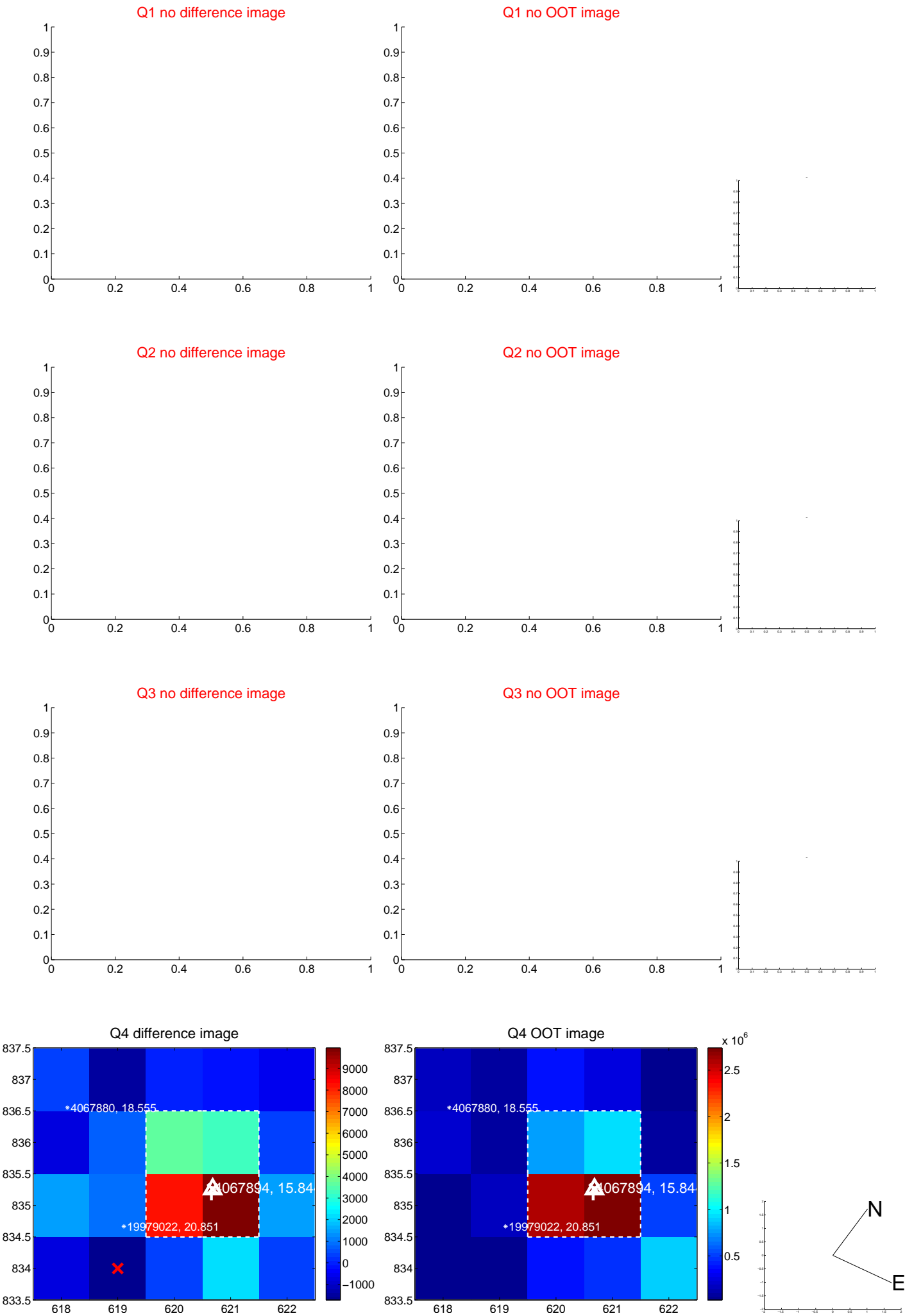


offset from photometric centroids

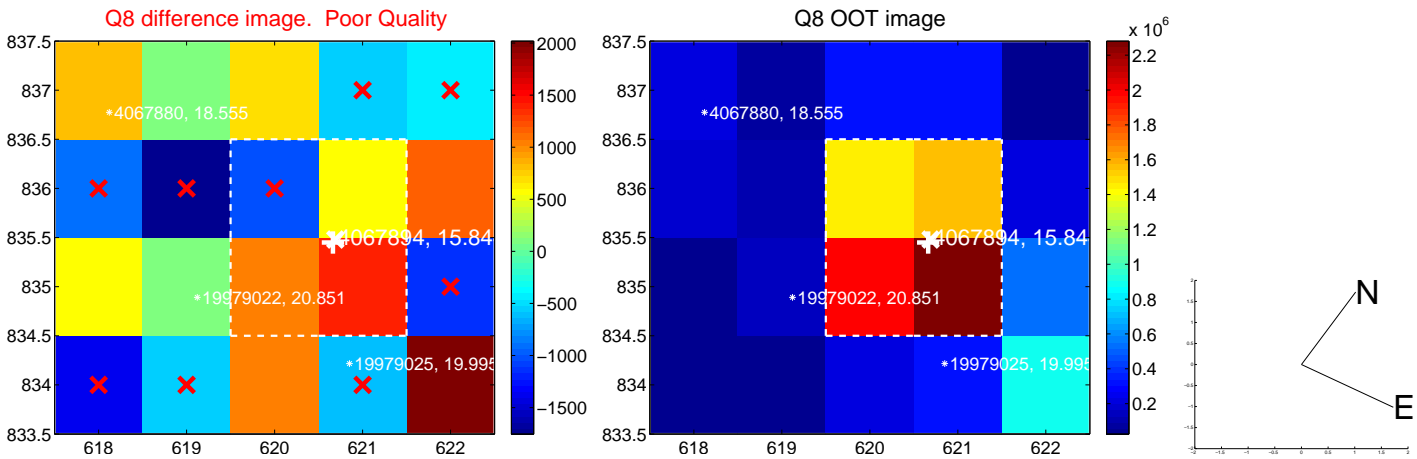
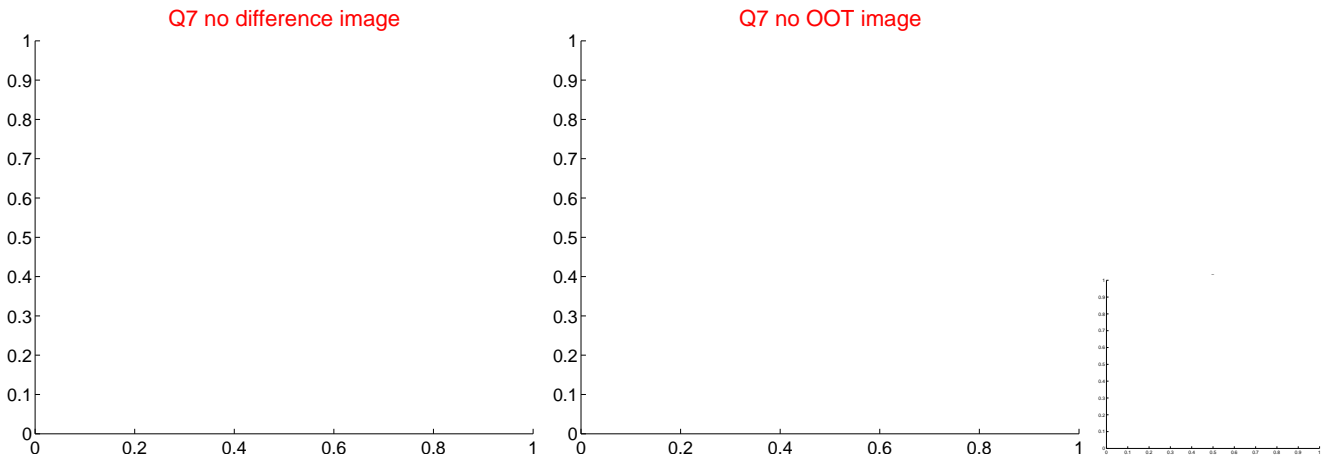
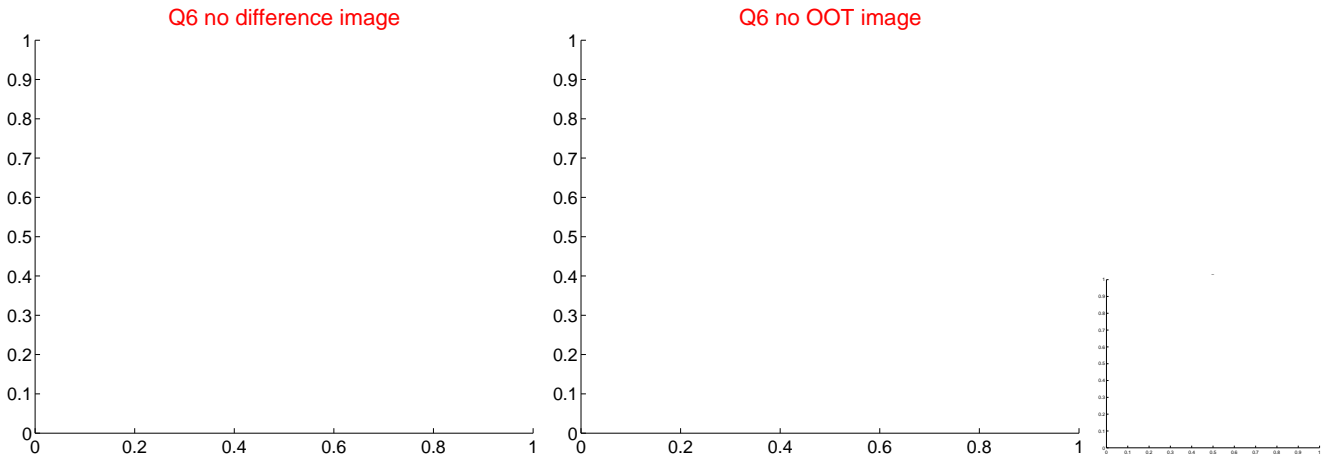
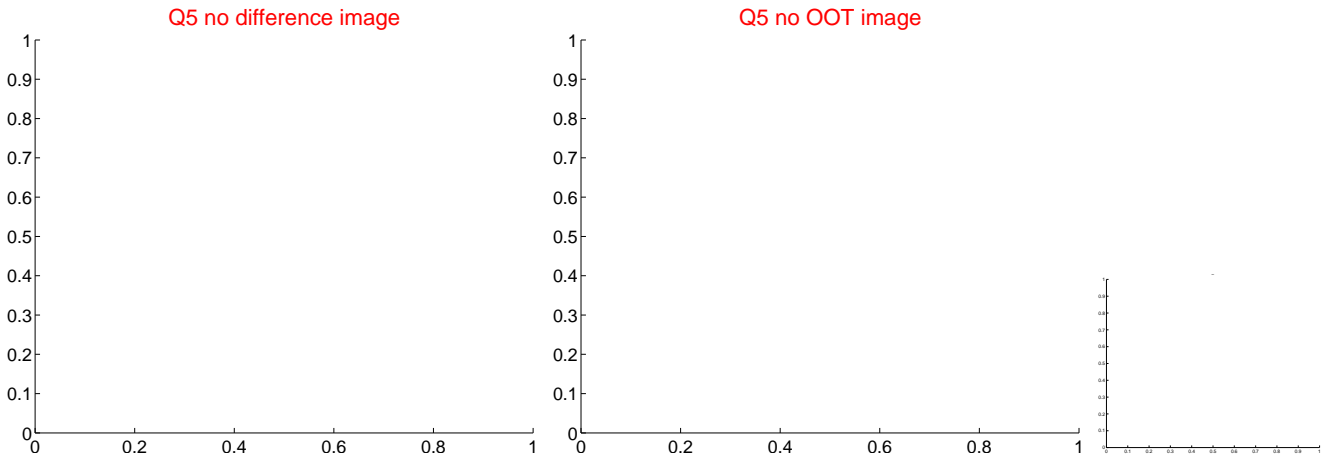


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



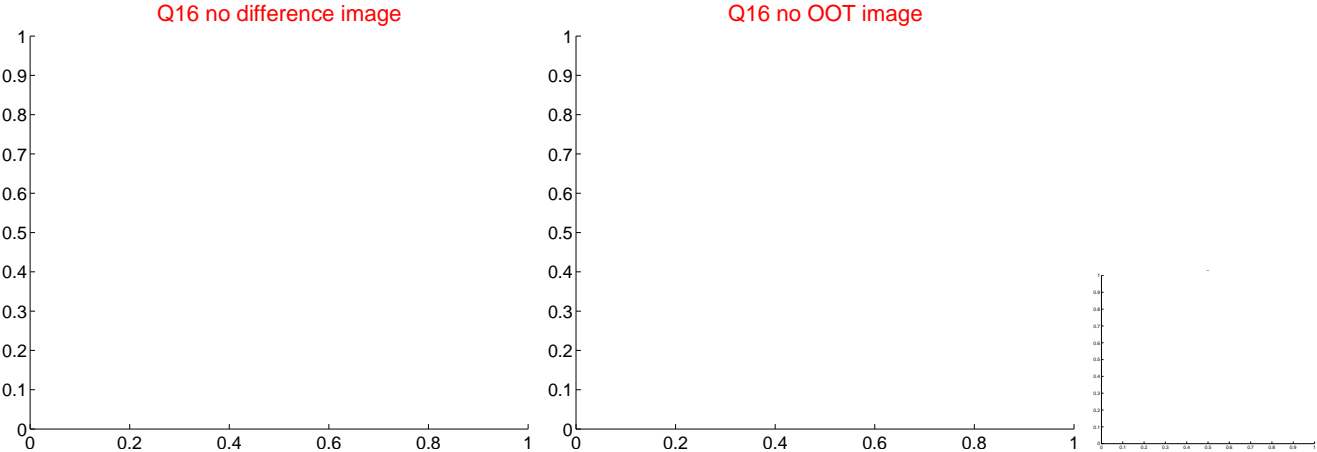
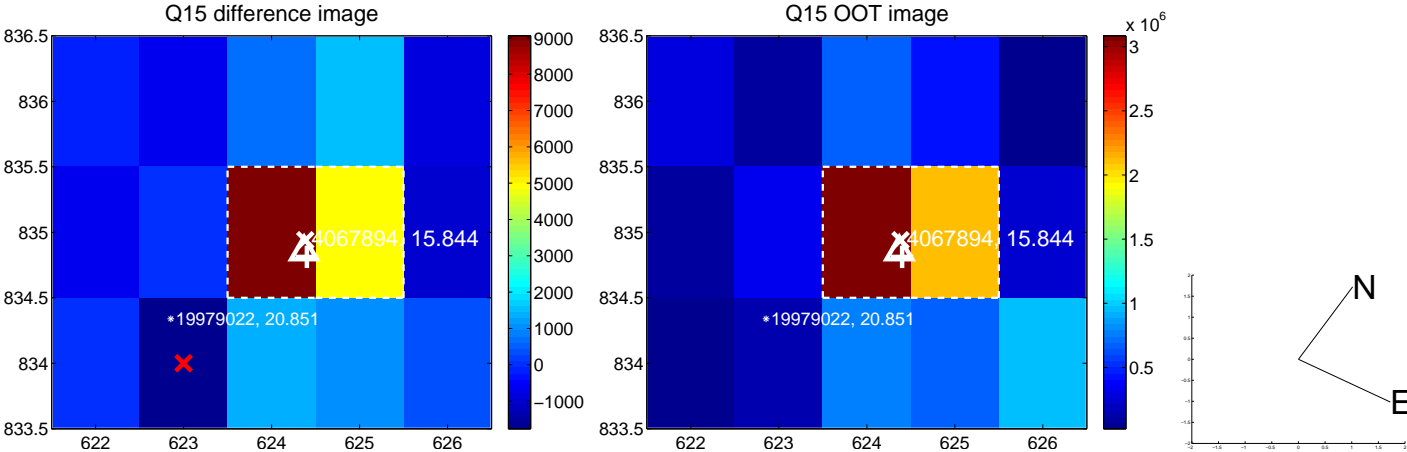
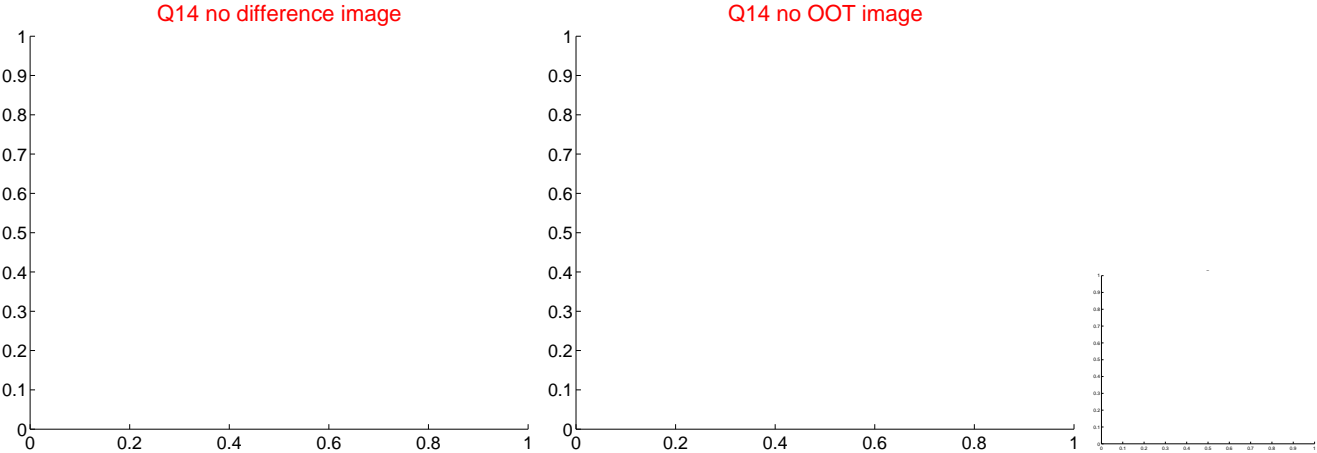
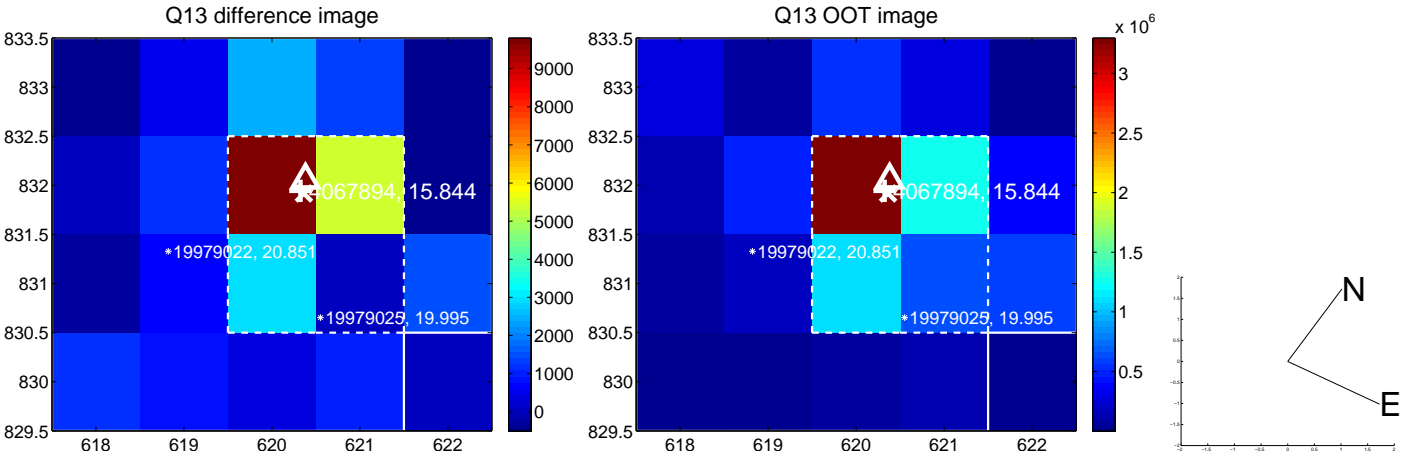
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



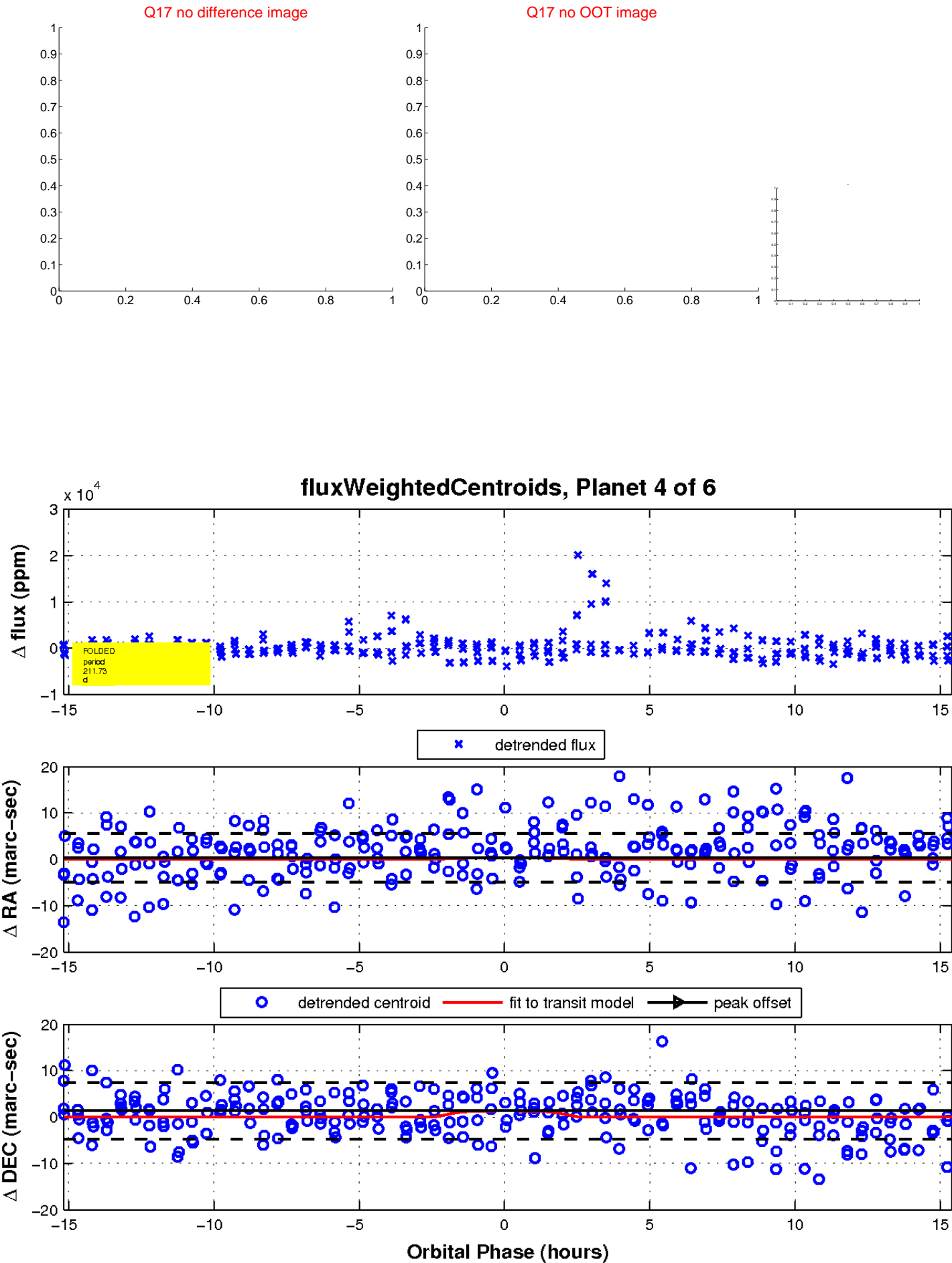
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

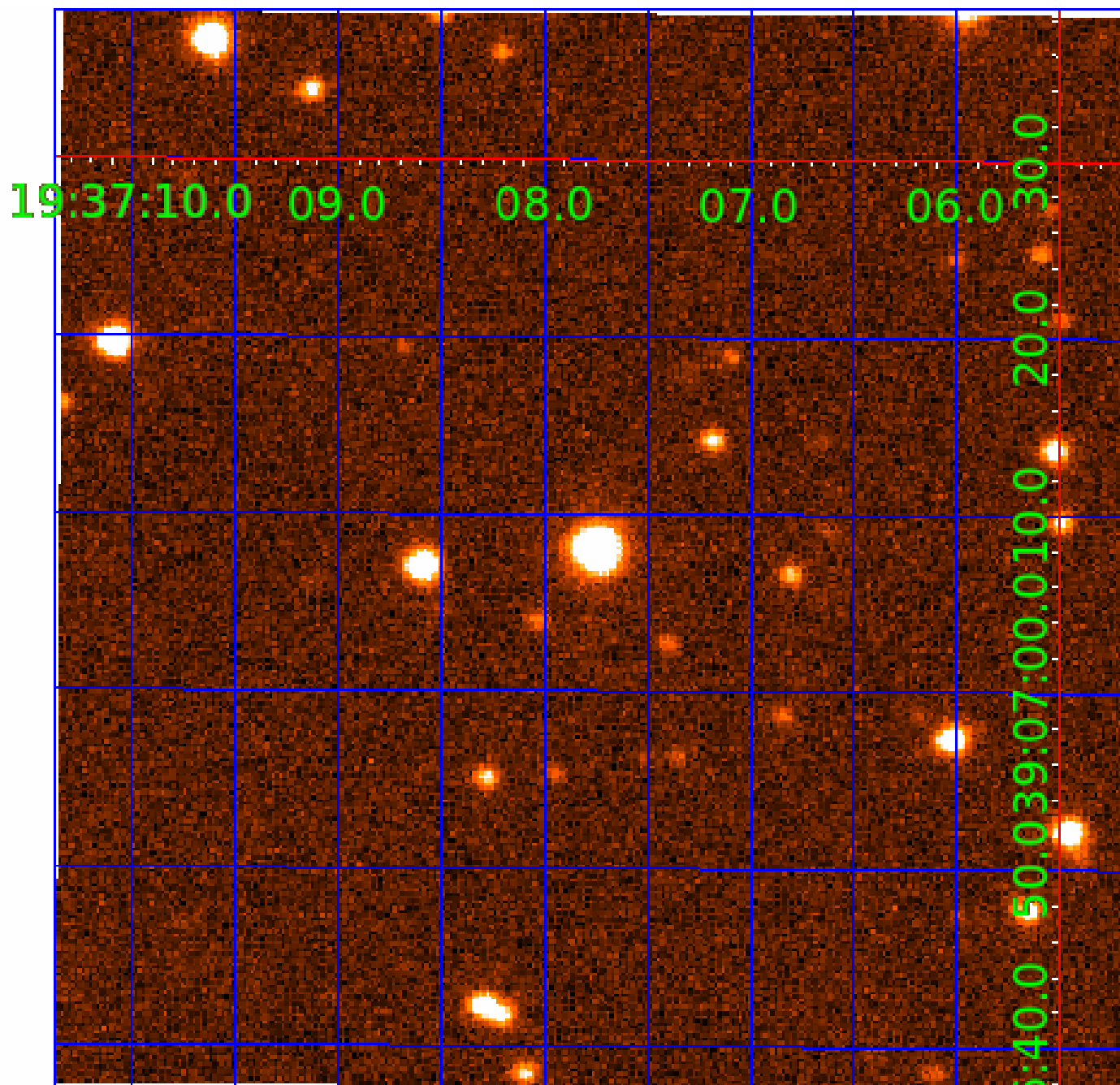


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004067894

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})
004067894-01	OBS	No	389.695718	312.777131	4737.0	14.588	11.1	10.5	0.29	3360	2.00	0.02
004067894-02	OBS	No	256.424130	325.851712	3055.1	10.443	12.5	8.0	0.29	3360	1.81	0.04
004067894-03	OBS	No	311.695528	323.319786	3501.1	2.680	9.5	7.5	0.29	3360	1.87	0.03
004067894-04	OBS	No	211.733703	151.226575	2653.8	5.142	13.5	6.7	0.29	3360	1.74	0.05
004067894-05	OBS	No	601.049795	177.351041	2941.3	5.791	11.5	6.2	0.29	3360	1.97	0.01
004067894-06	OBS	No	465.931432	247.261542	2435.3	14.542	9.5	5.1	0.29	3360	1.40	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004067894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
004067894-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004067894-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004067894-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-06	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

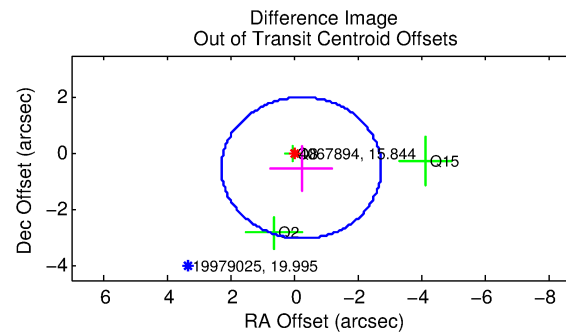
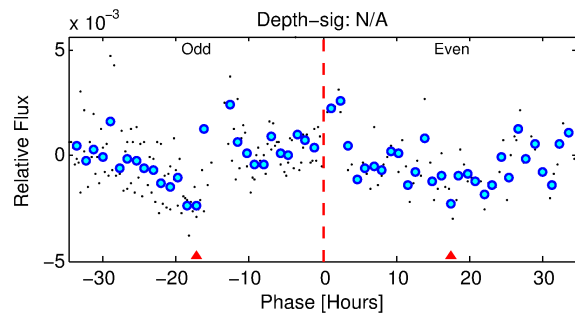
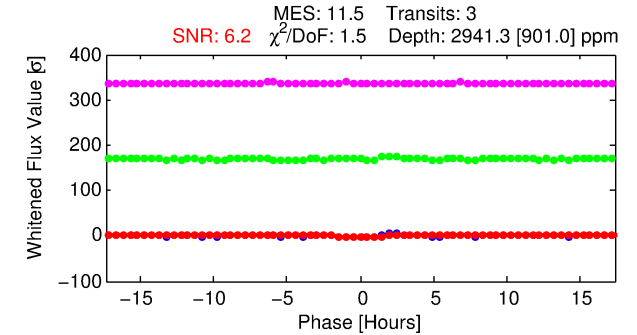
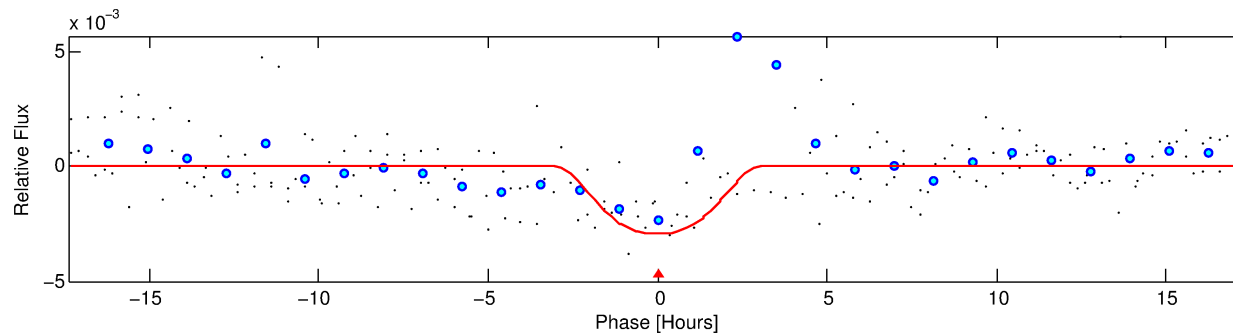
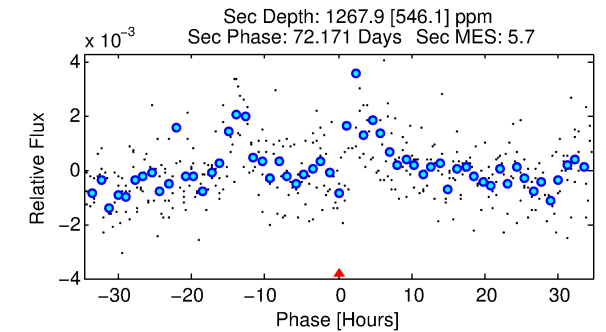
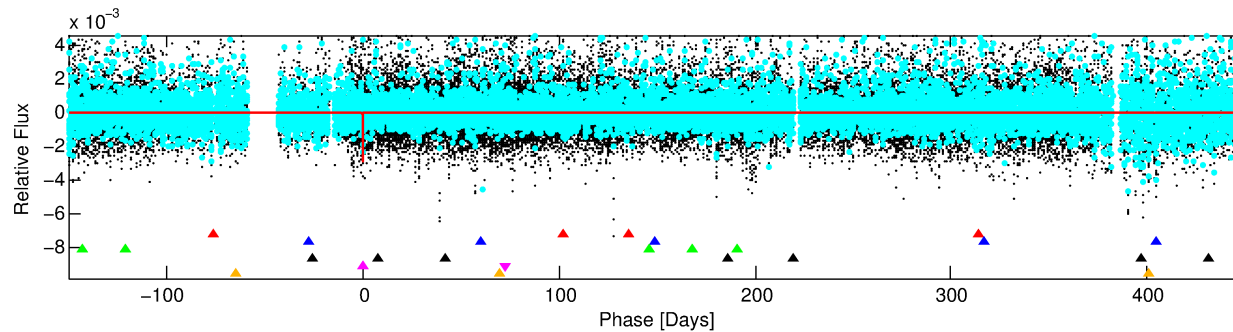
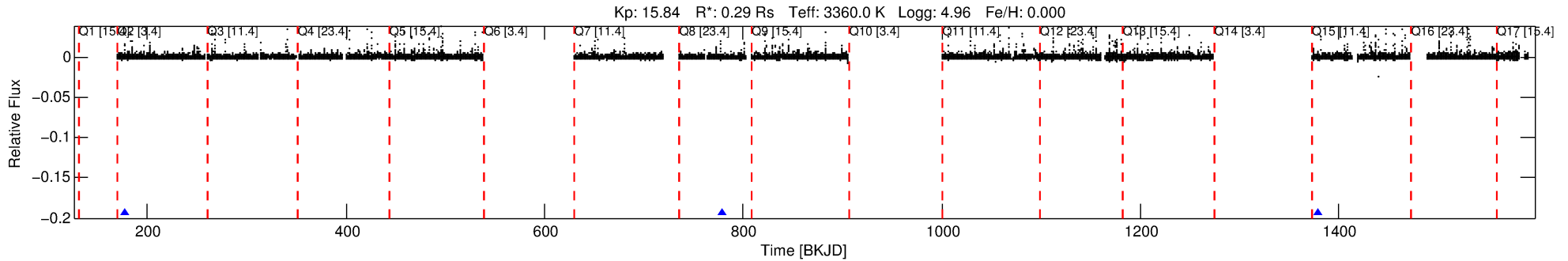
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004067894-05

No Significant Match Found

DV One-Page Summary

KIC: 4067894 Candidate: 5 of 6 Period: 601.050 d



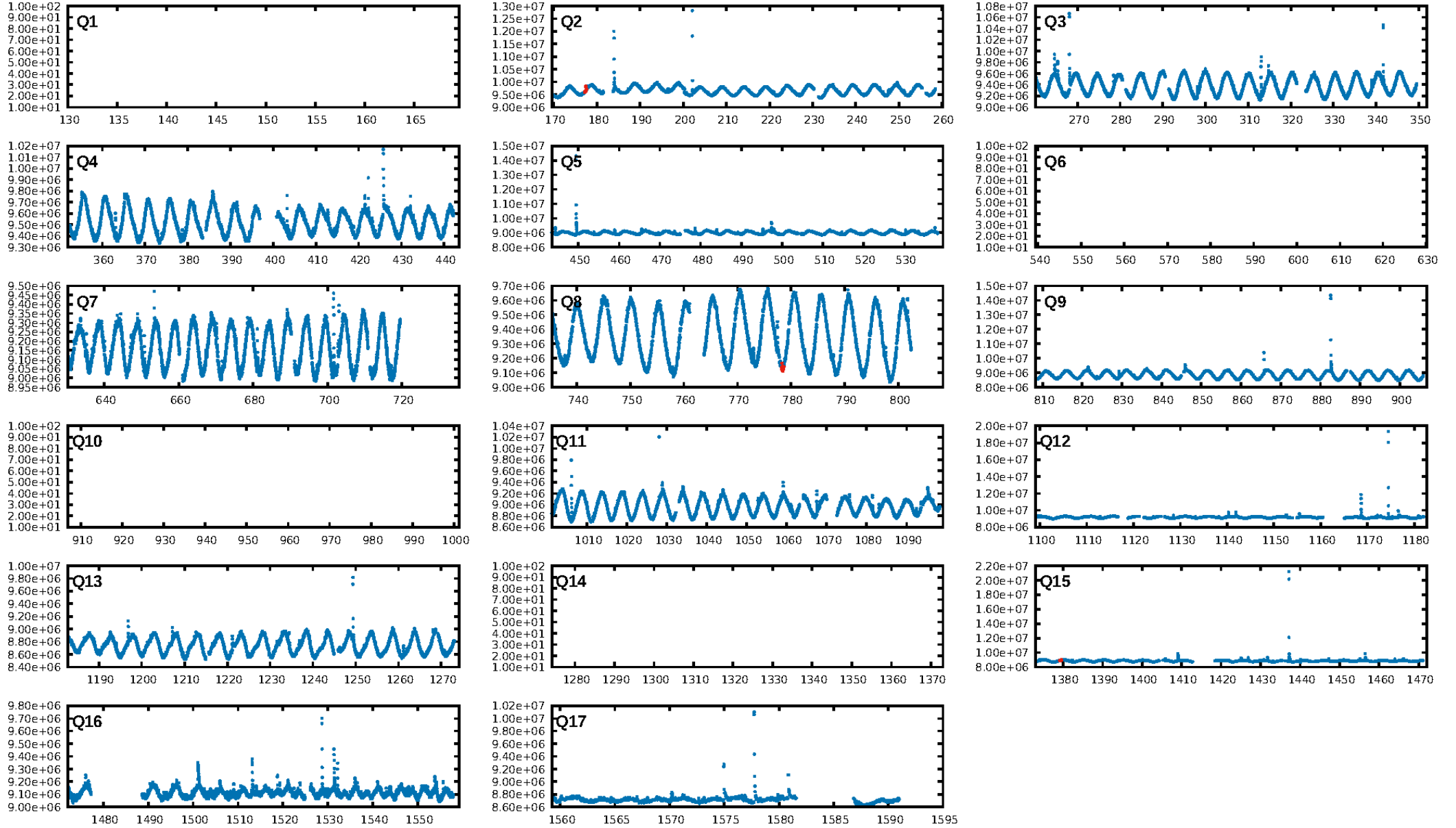
DV Fit Results:

Period = 601.04979 [0.01329] d
Epoch = 177.3510 [0.0180] BKJD
Rp/R* = 0.0630 [0.0158]
a/R* = 399.97 [117.37]
b = 0.94 [0.06]
Seff = 0.01 [0.00]
Teq = 83 [3] K
Rp = 1.97 [0.59] Re
a = 0.9062 [0.1061] AU
Ag = 147241.35 [99526.27] [1.48 σ]
Teffp = 2526 [420] K [5.82 σ]

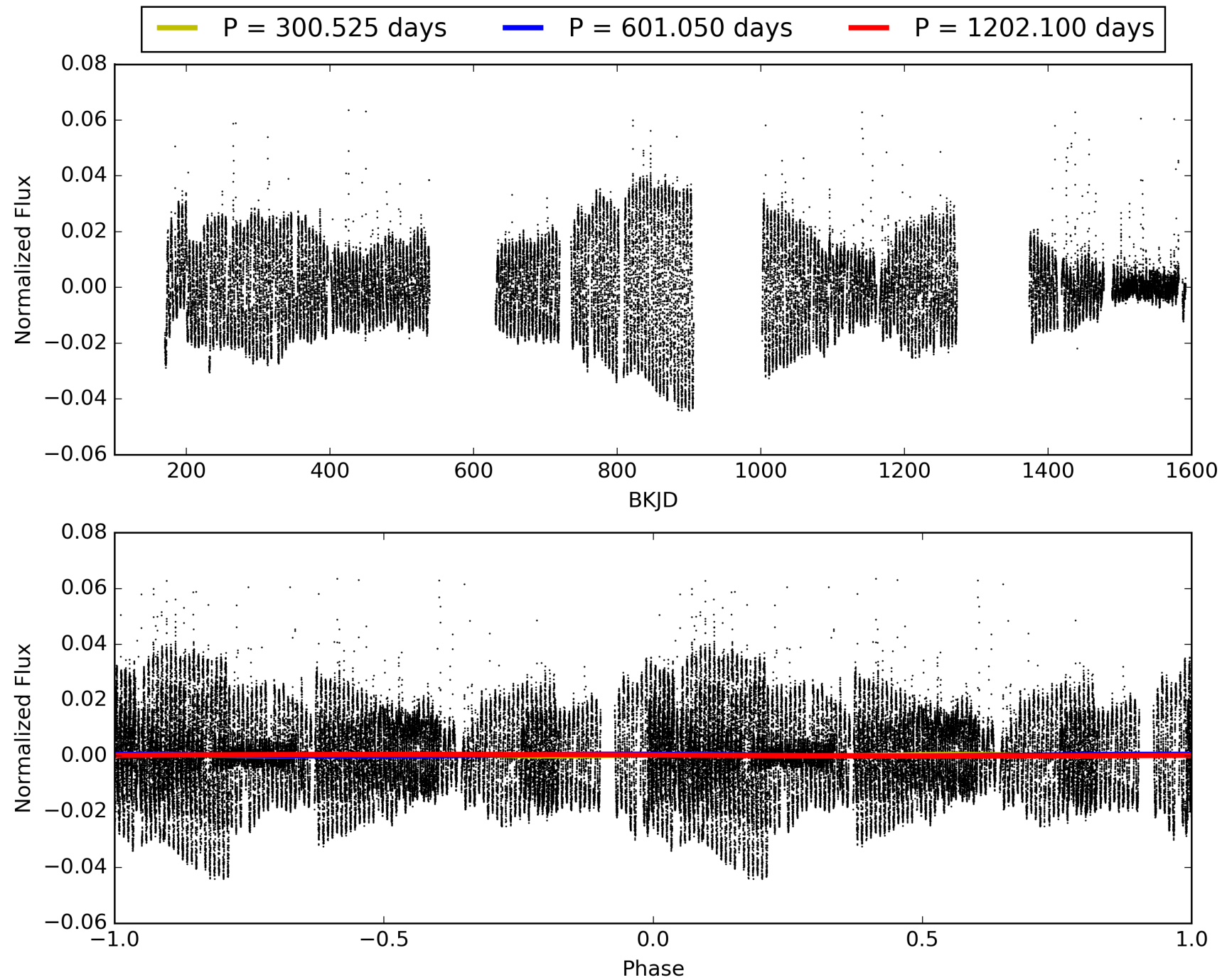
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [207.18 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 87.1%
Bootstrap-pfa: 1.68e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.1733
Centroid-sig: 60.9%
Centroid-so: 0.357 arcsec [0.38 σ]
OotOffset-rm: 0.566 arcsec [0.68 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.720 arcsec [0.92 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 004067894-05, PDC Light Curves

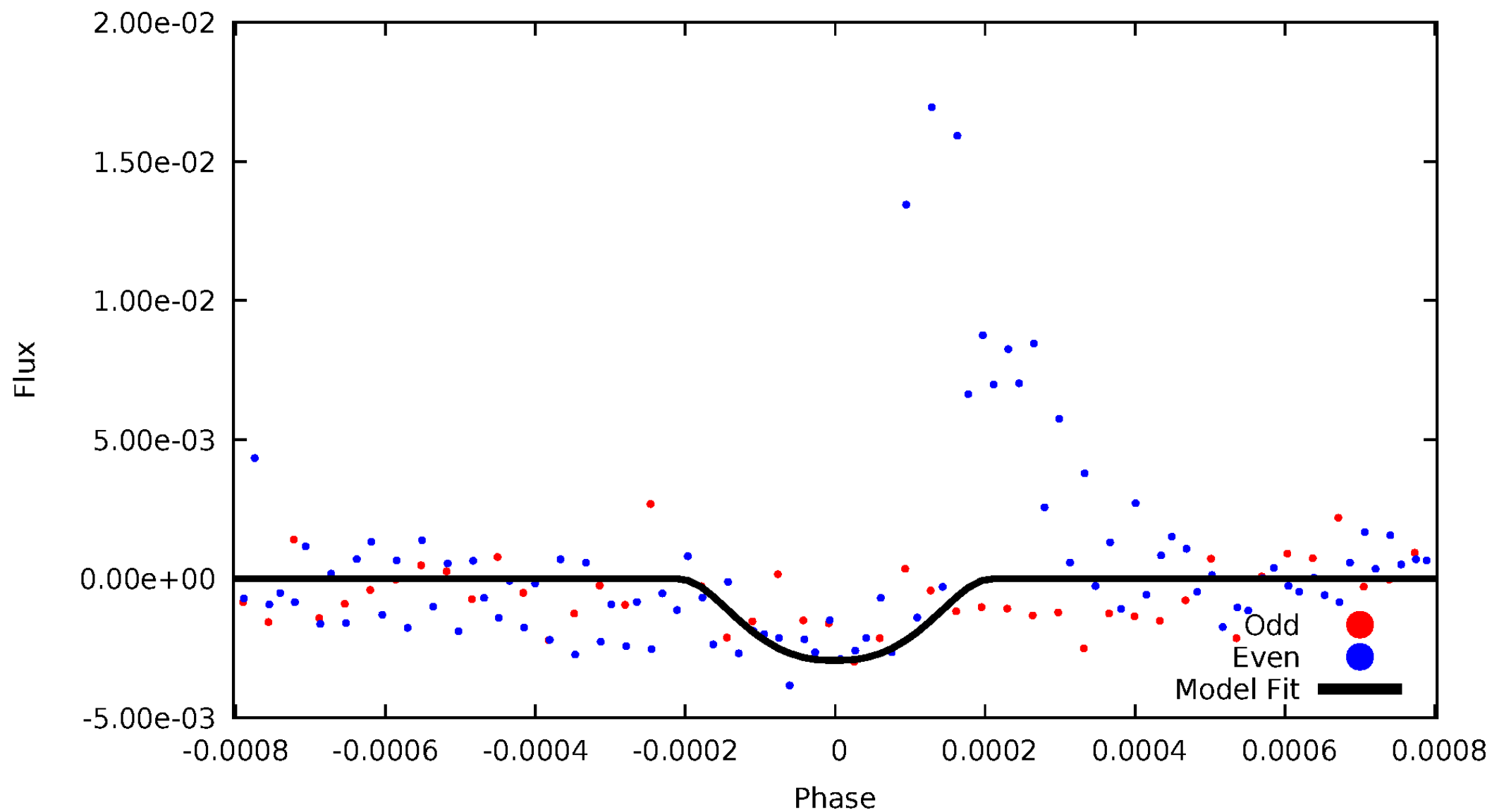


TCE 004067894-05



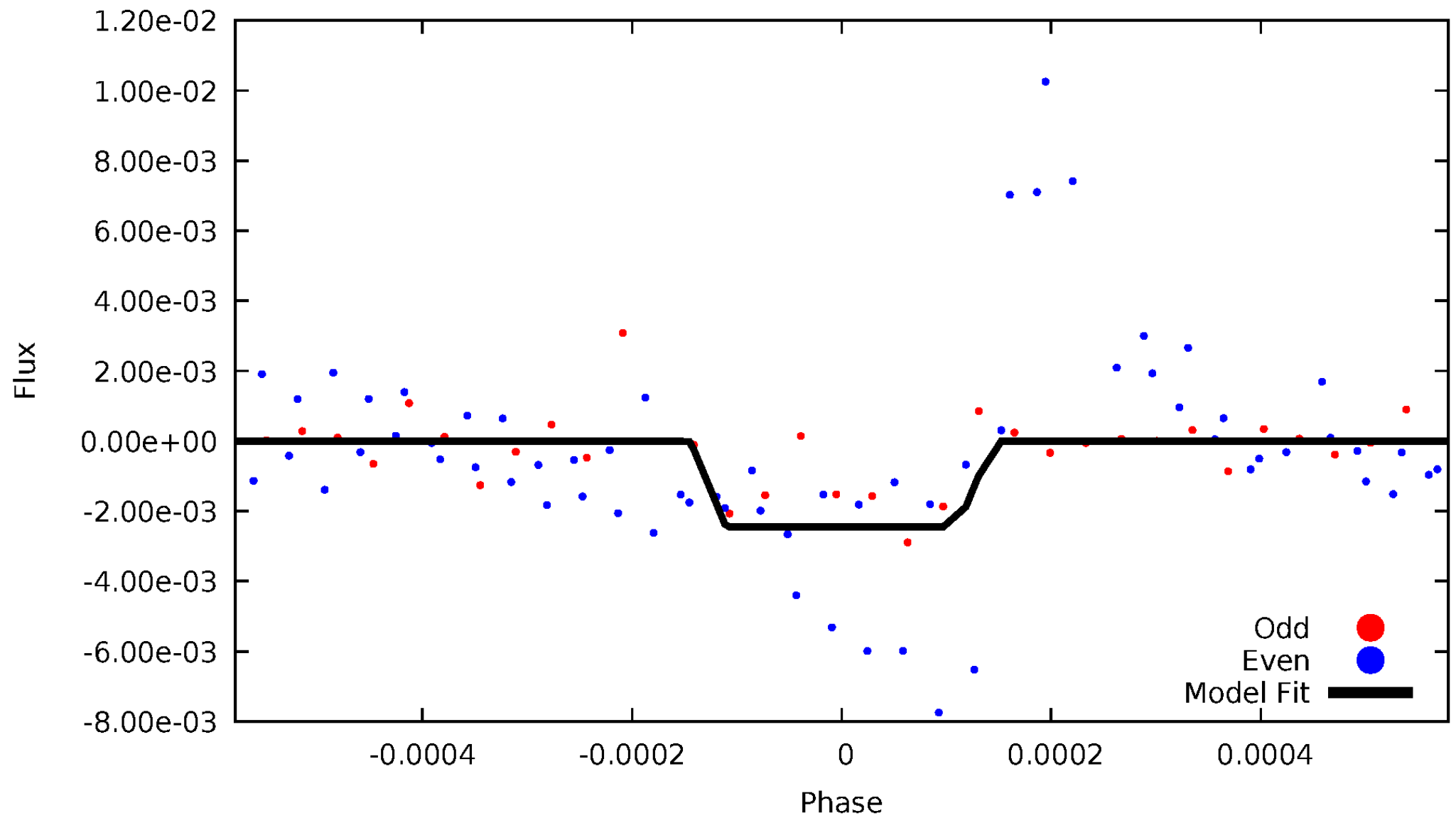
DV Odd/Even

TCE 004067894-05



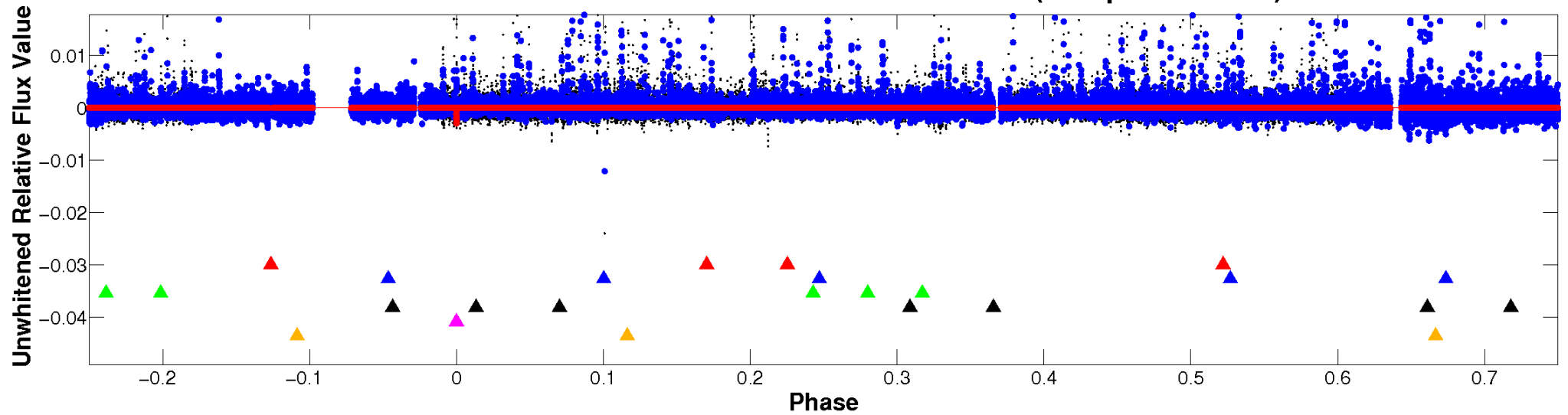
ALT Odd/Even

TCE 004067894-05

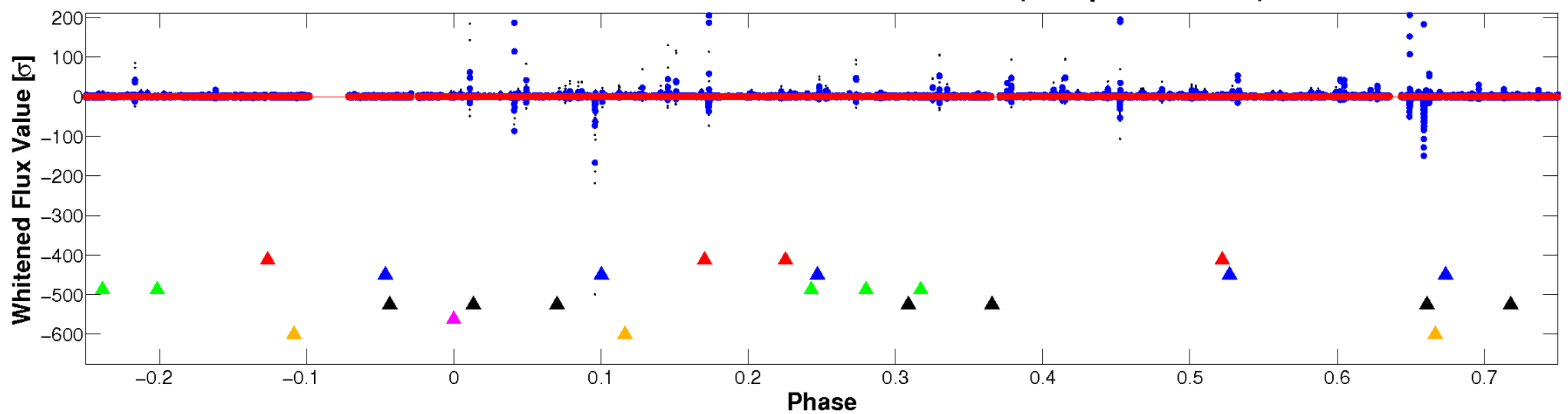


Non-Whitened Vs. Whitened Light Curve

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

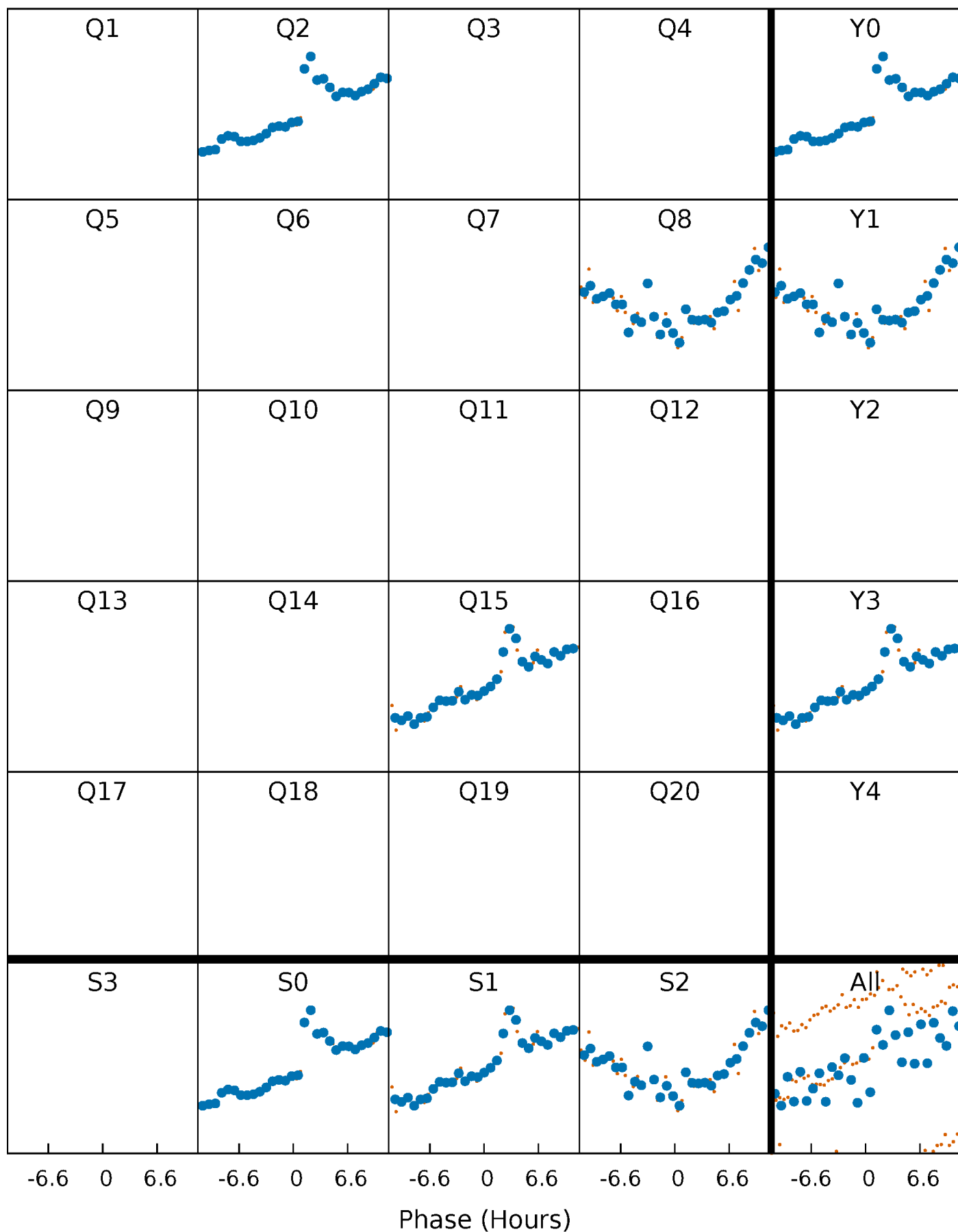


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



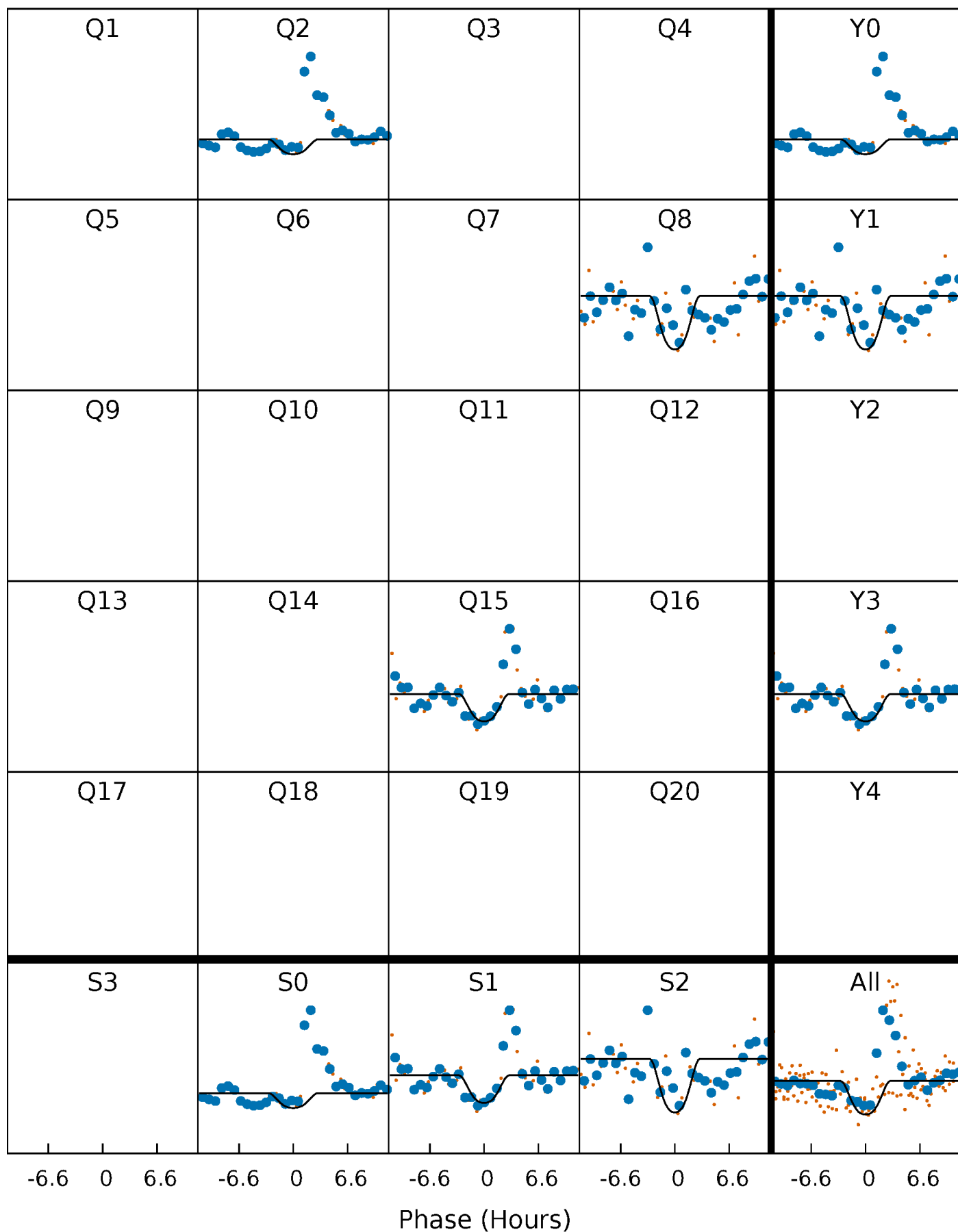
PDC Quarter-Phased Transit Curves

TCE 004067894-05 $P=601.049795$ Days $T_0=177.351041$ (BKJD)



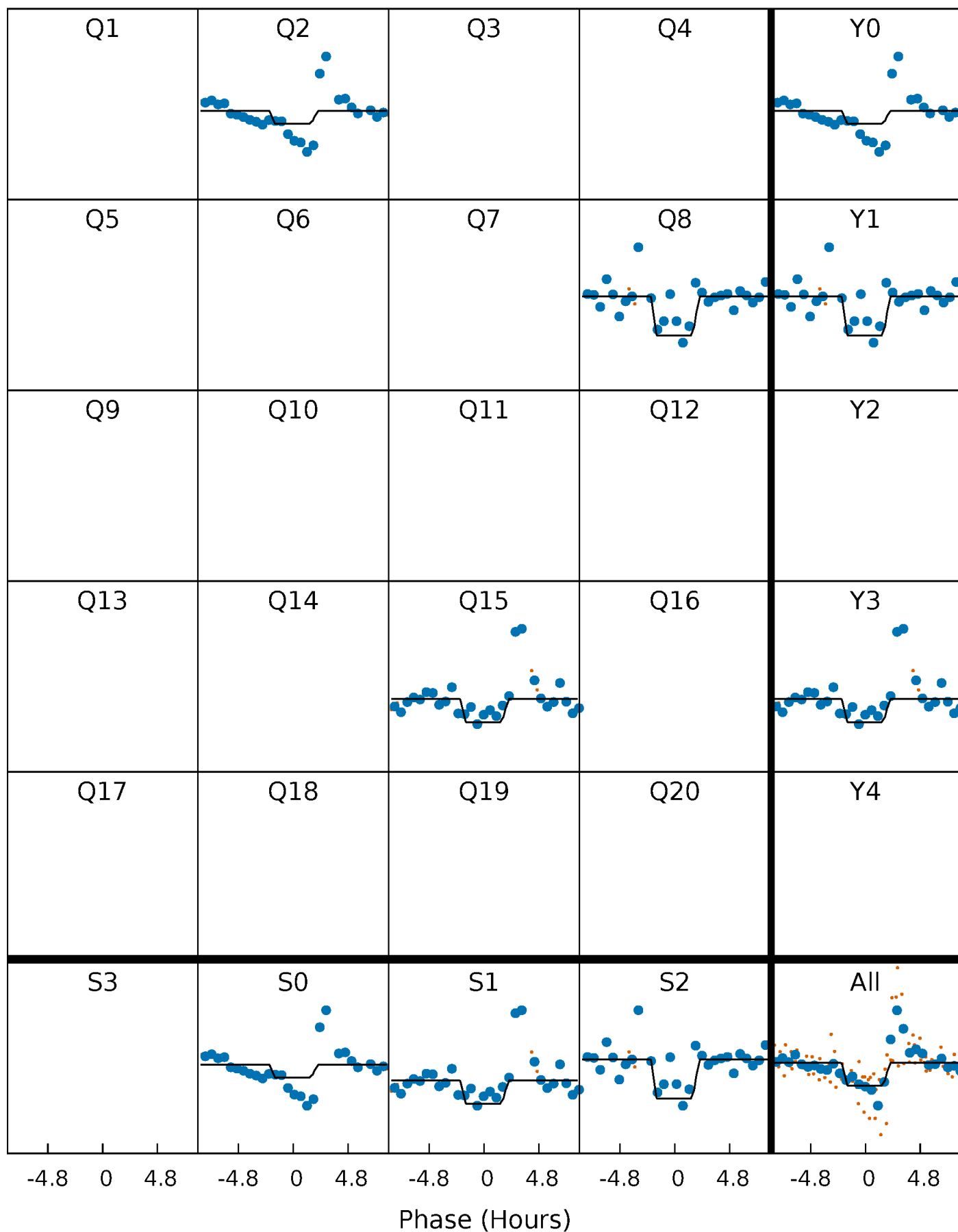
DV Quarter-Phased Transit Curves

TCE 004067894-05 $P=601.049795$ Days $T_0=177.351041$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

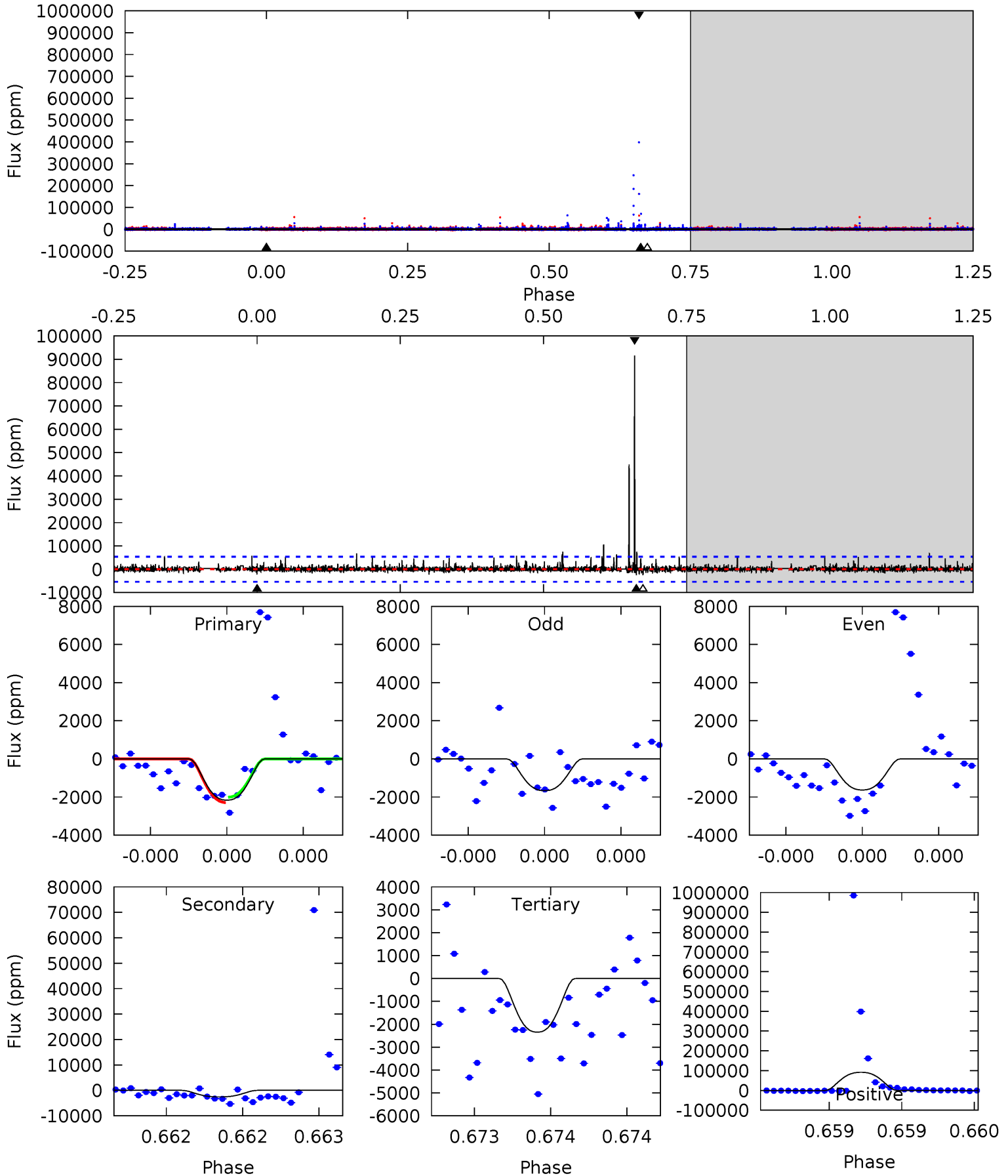
TCE 004067894-05 $P=601.066790$ Days $T_0=177.311569$ (BKJD)



DV Model-Shift Uniqueness Test

004067894-05, P = 601.049795 Days, E = 177.351041 Days

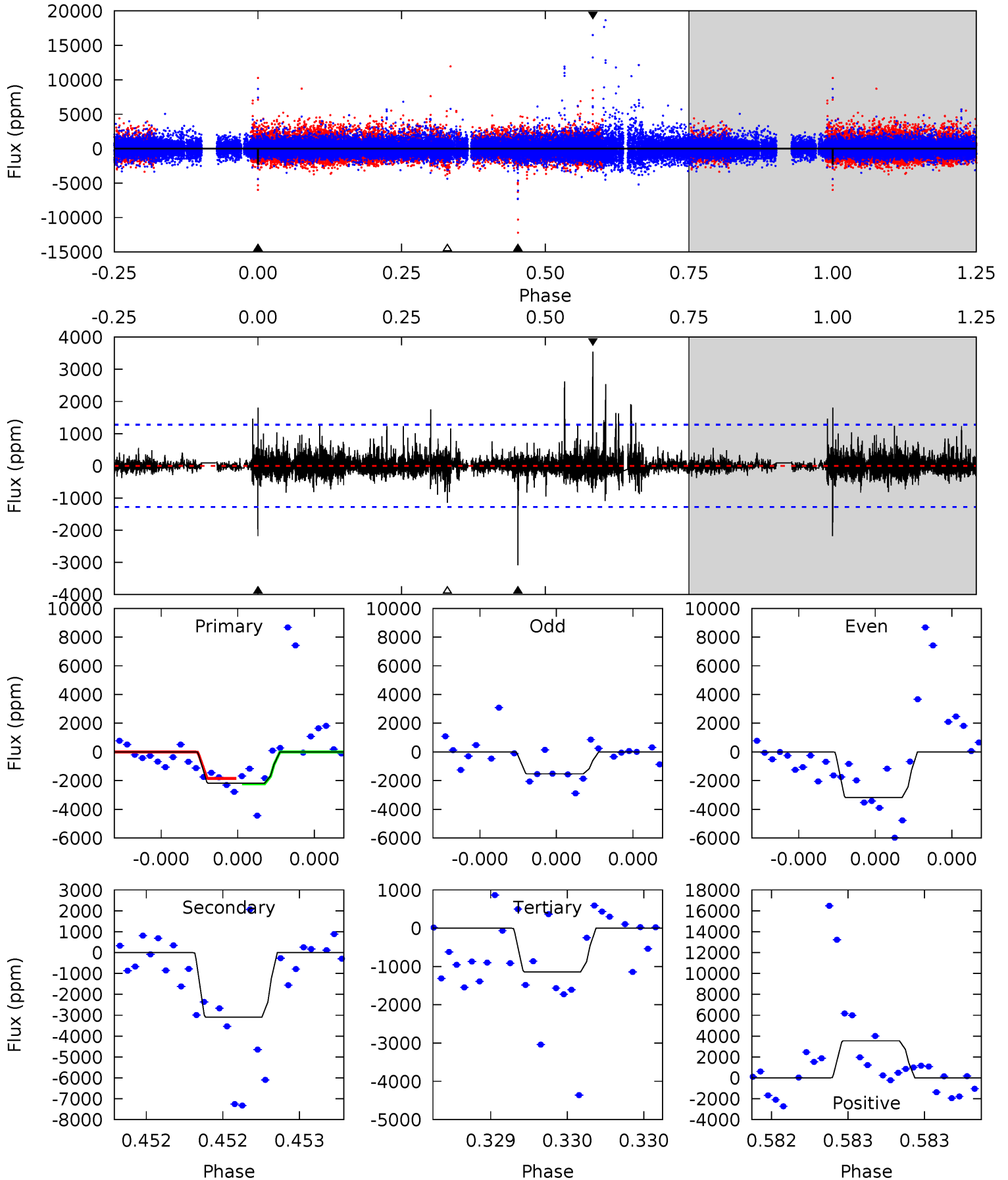
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.26	2.69	2.45	95.5	5.60	3.52	2.12	-0.19	-93.2	0.24	-92.8	0.02	0.49	0.97	0.13



Alt Model-Shift Uniqueness Test

004067894-05, P = 601.066790 Days, E = 177.311569 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.72	13.8	5.07	15.8	5.68	3.64	1.04	4.65	-6.06	8.68	-2.03	3.61	1.70	0.53	0.80



Stellar Parameters For KIC 004067894

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3360^{+55}_{-50}	$4.961^{+0.055}_{-0.050}$	$0.000^{+0.100}_{-0.100}$	$0.287^{+0.047}_{-0.038}$	$0.274^{+0.057}_{-0.041}$	$16.380^{+4.916}_{-3.772}$
	+2%/-1%	+1%/-1%	+inf%/-inf%	+16%/-13%	+21%/-15%	+30%/-23%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 004067894-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2582 ± 959	$1.98^{+0.54}_{-0.51}$	117^{+3}_{-3}	3125^{+387}_{-290}	$287820^{+311067}_{-144184}$
Alt.	-3091 ± 225	$1.55^{+0.54}_{-0.49}$	117^{+3}_{-3}	3492^{+482}_{-301}	$589449^{+679985}_{-264483}$

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 $A_{obs} \gg 1.0$

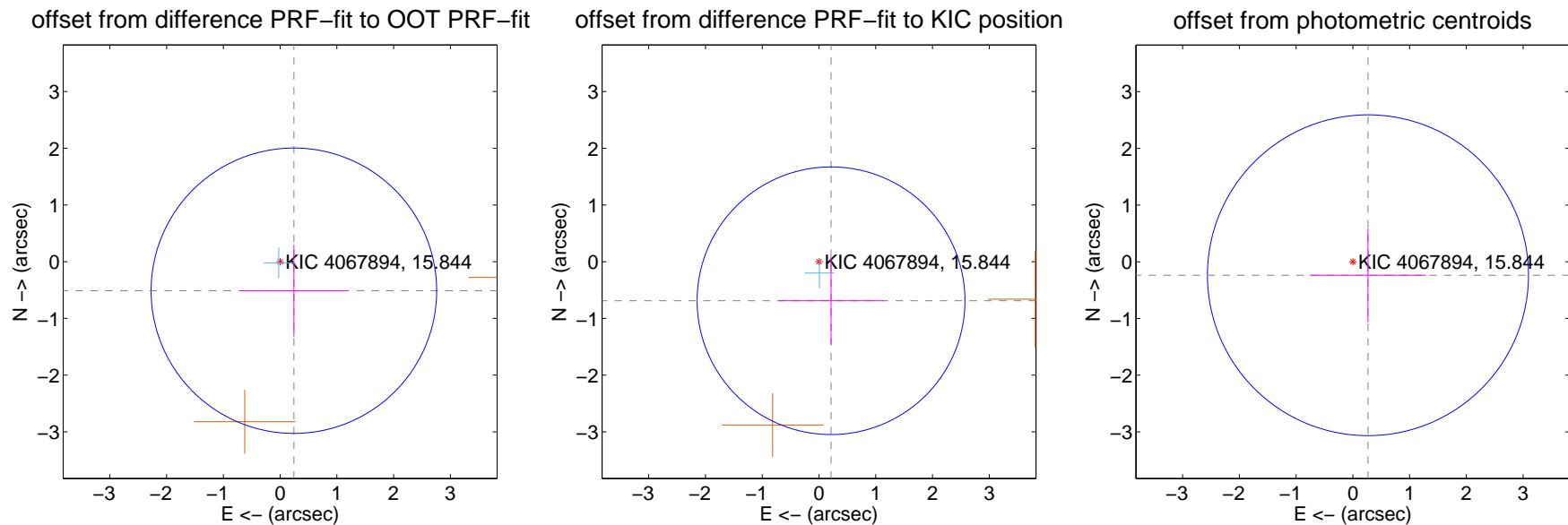
DV Centroid Data

Supplemental centroid analysis for 004067894-05. Kepler magnitude: 15.84. Transit SNR 6.19

There are 1 quarters with good PRF difference image offsets

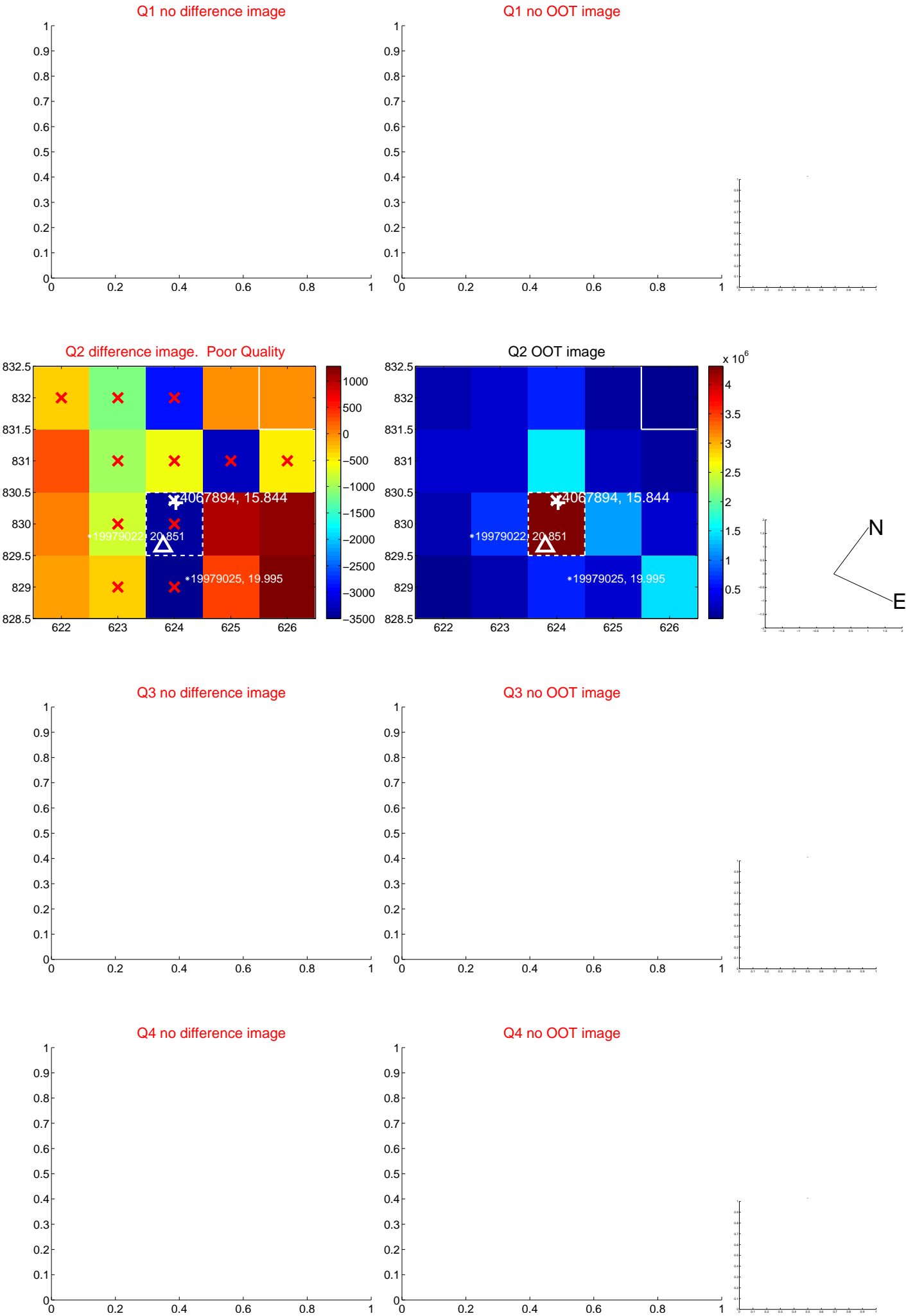
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.566 ± 0.838	0.68	-0.243 ± 0.952	-0.512 ± 0.811
PRF-fit source offset from KIC position	0.720 ± 0.786	0.92	-0.213 ± 0.928	-0.688 ± 0.771
photometric centroid source offset	0.36 ± 0.94	0.38	-0.27 ± 1.02	-0.24 ± 0.83

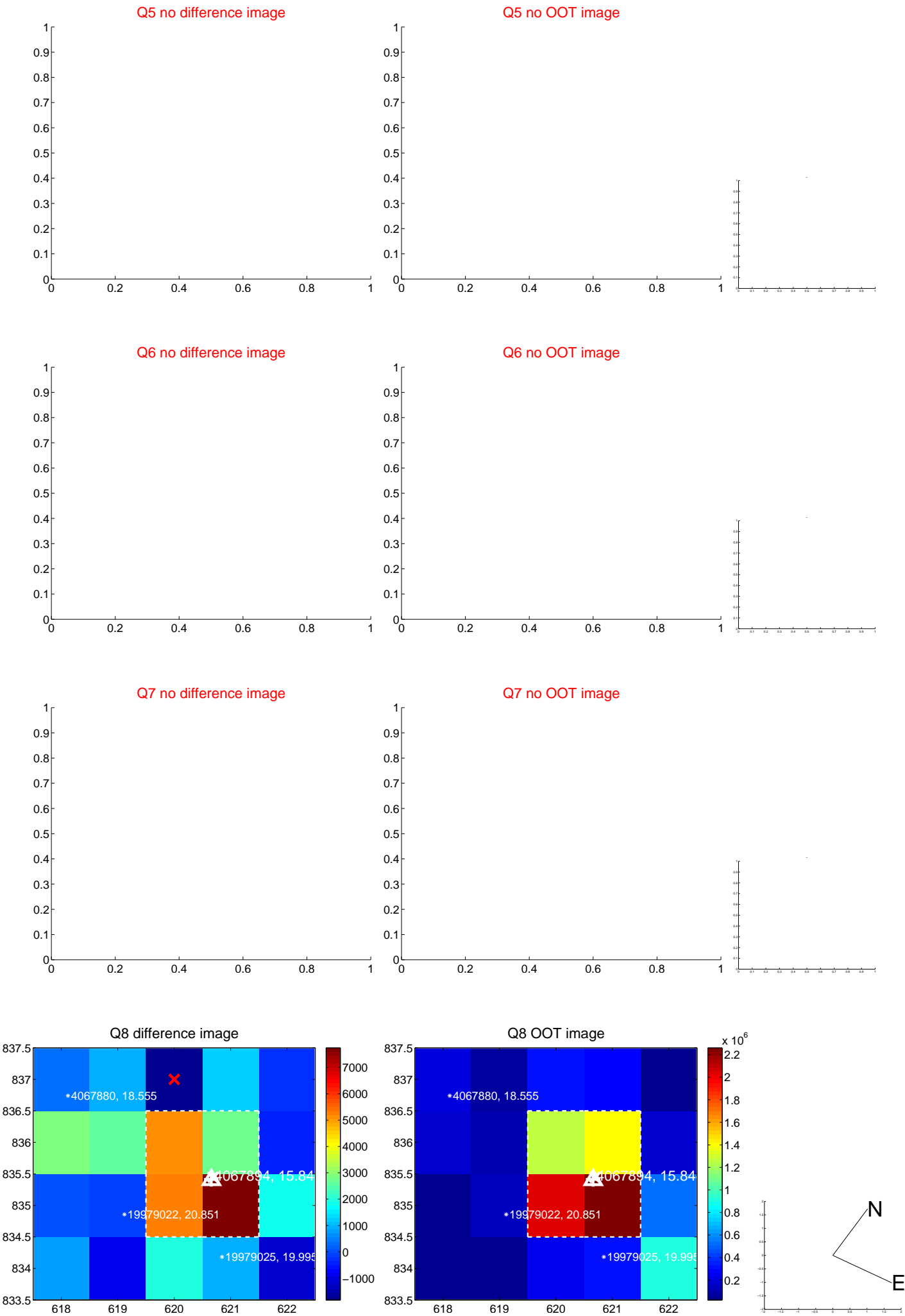


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



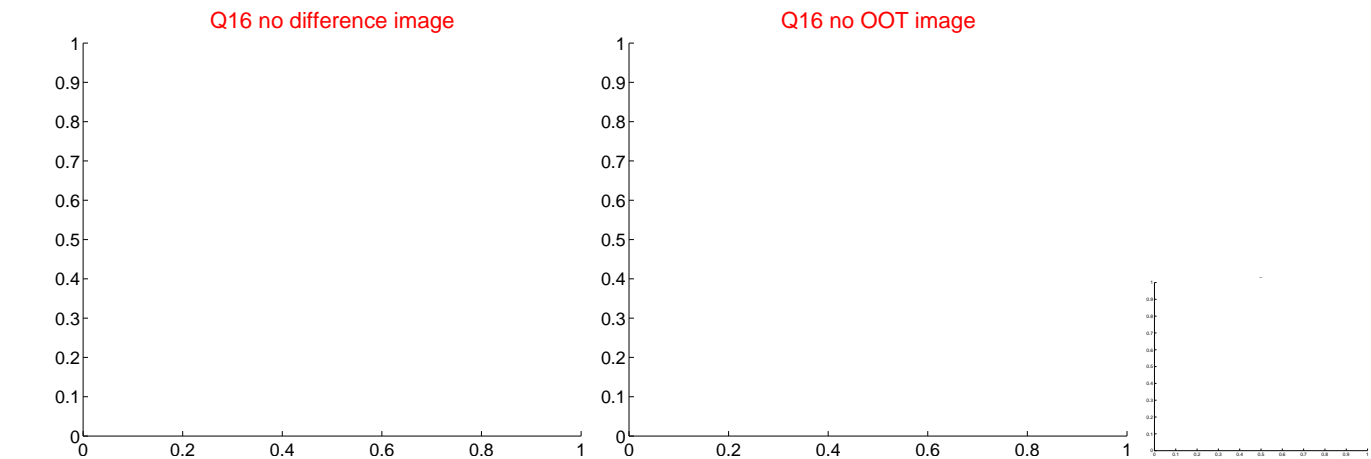
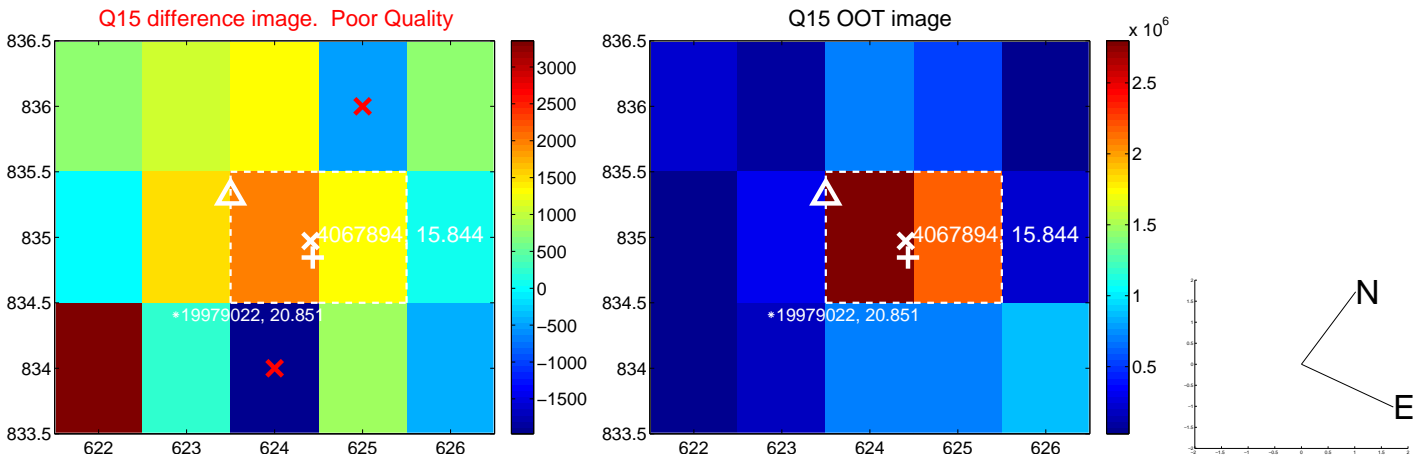
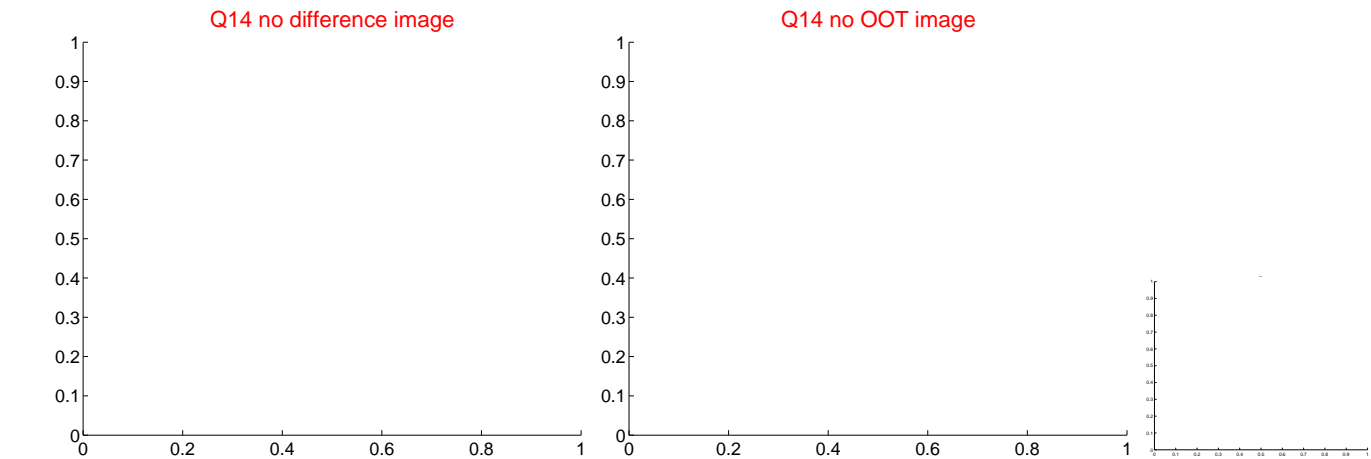
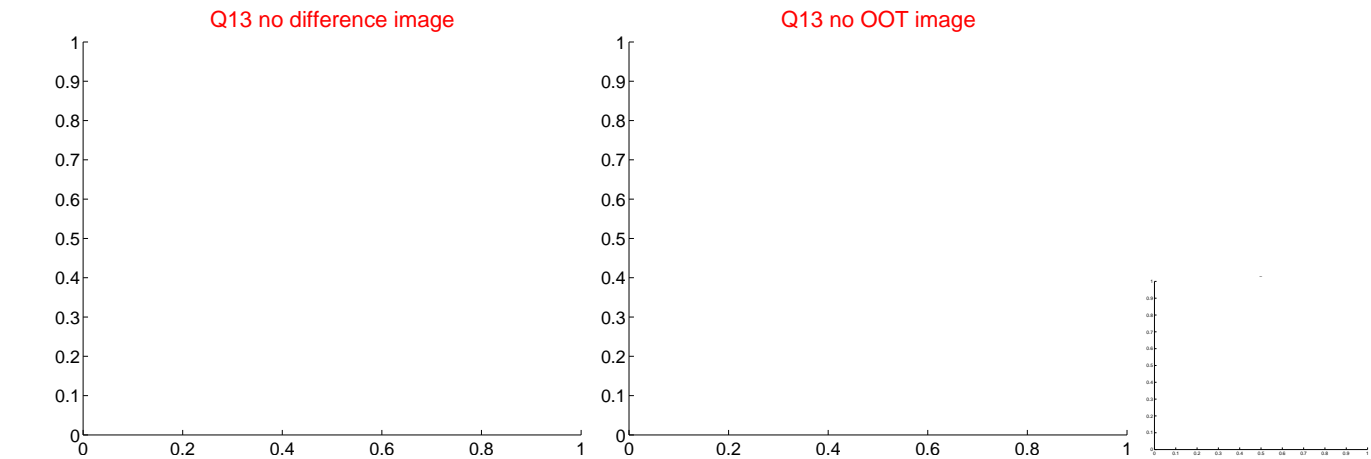
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



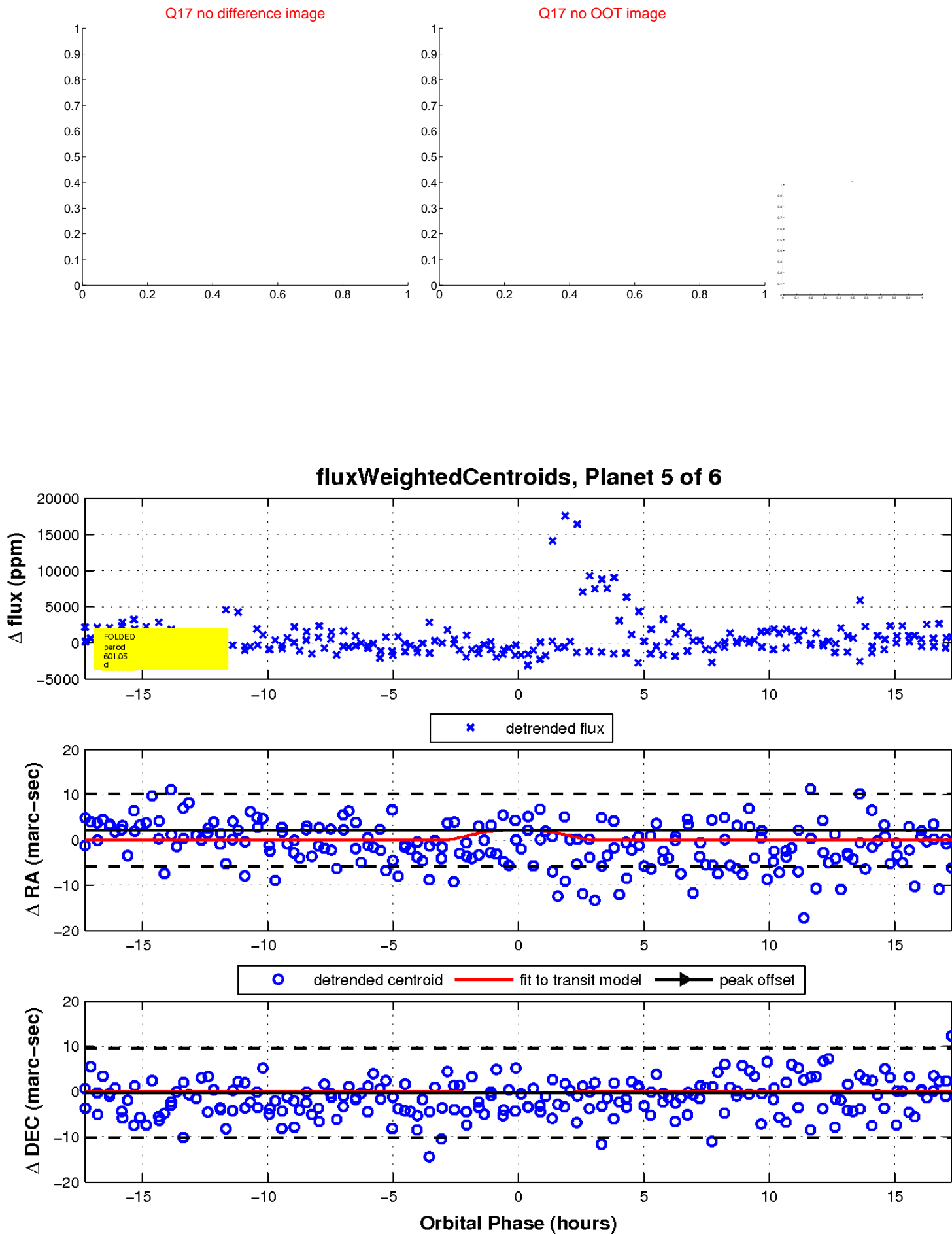
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

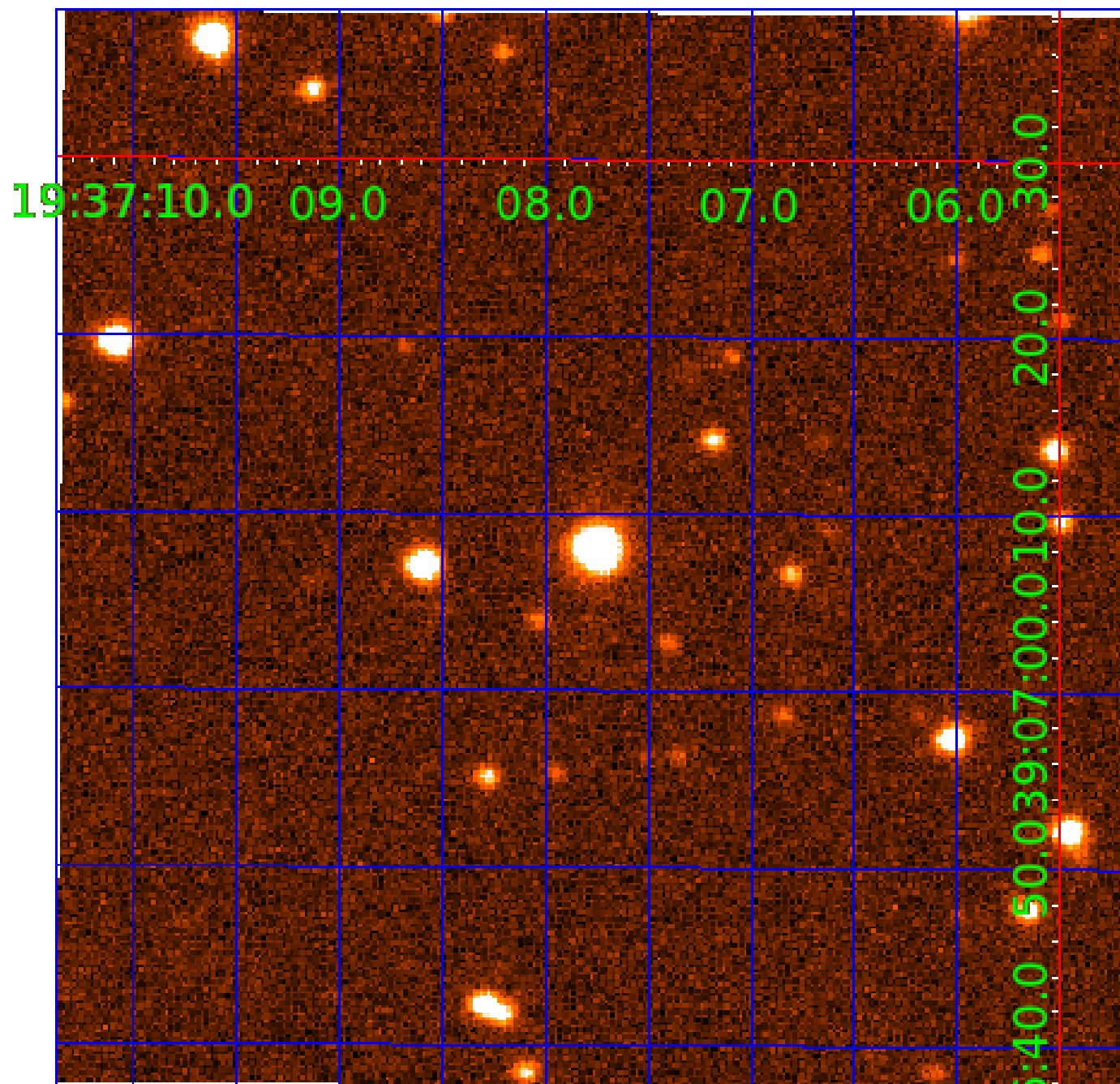


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004067894

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})
004067894-01	OBS	No	389.695718	312.777131	4737.0	14.588	11.1	10.5	0.29	3360	2.00	0.02
004067894-02	OBS	No	256.424130	325.851712	3055.1	10.443	12.5	8.0	0.29	3360	1.81	0.04
004067894-03	OBS	No	311.695528	323.319786	3501.1	2.680	9.5	7.5	0.29	3360	1.87	0.03
004067894-04	OBS	No	211.733703	151.226575	2653.8	5.142	13.5	6.7	0.29	3360	1.74	0.05
004067894-05	OBS	No	601.049795	177.351041	2941.3	5.791	11.5	6.2	0.29	3360	1.97	0.01
004067894-06	OBS	No	465.931432	247.261542	2435.3	14.542	9.5	5.1	0.29	3360	1.40	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004067894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
004067894-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004067894-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004067894-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004067894-06	OBS	FP	0.00	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

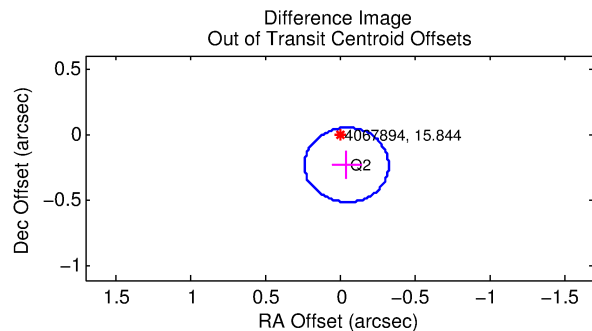
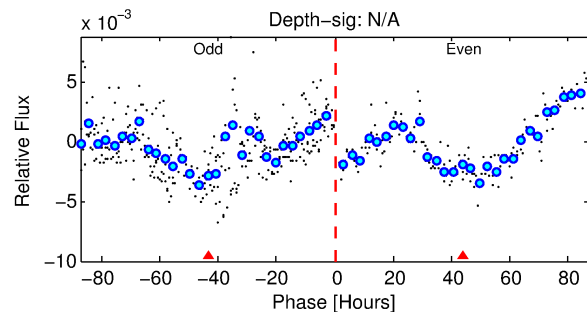
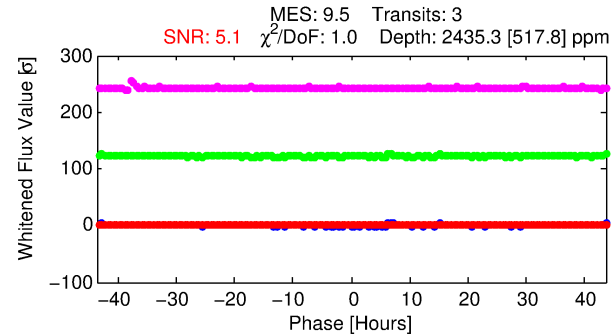
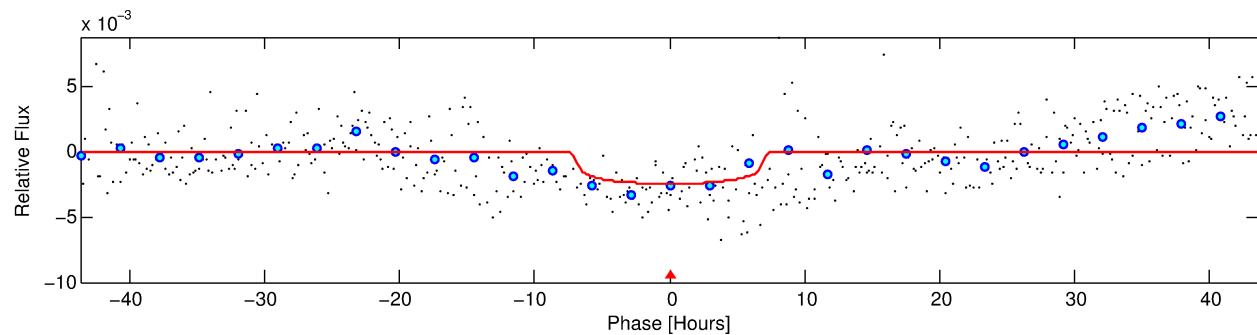
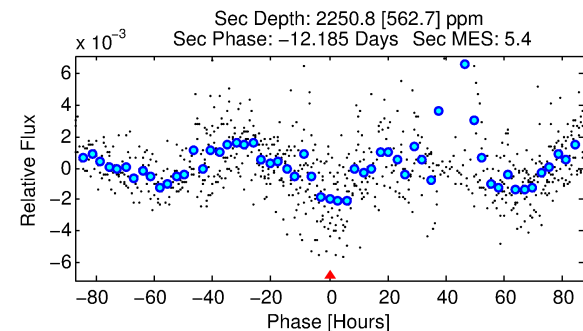
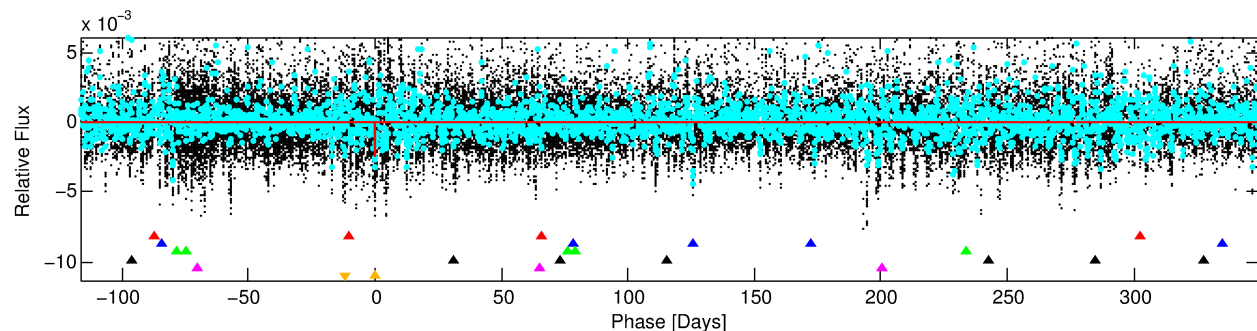
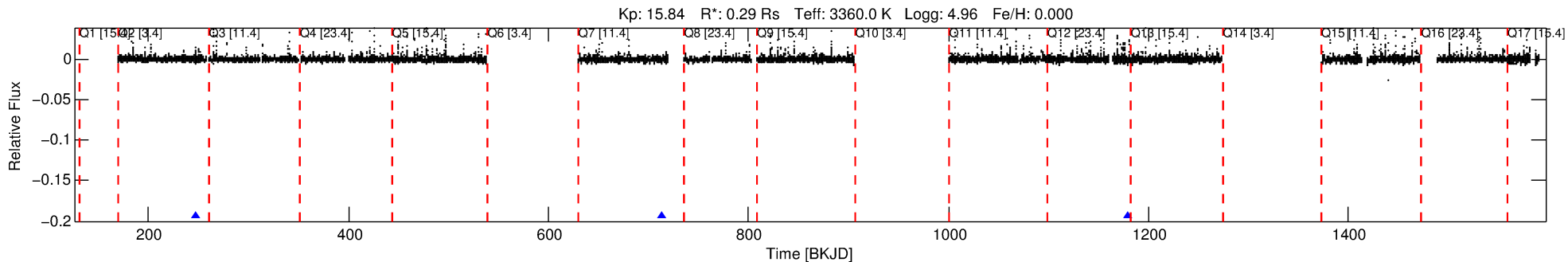
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004067894-06

No Significant Match Found

DV One-Page Summary

KIC: 4067894 Candidate: 6 of 6 Period: 465.931 d



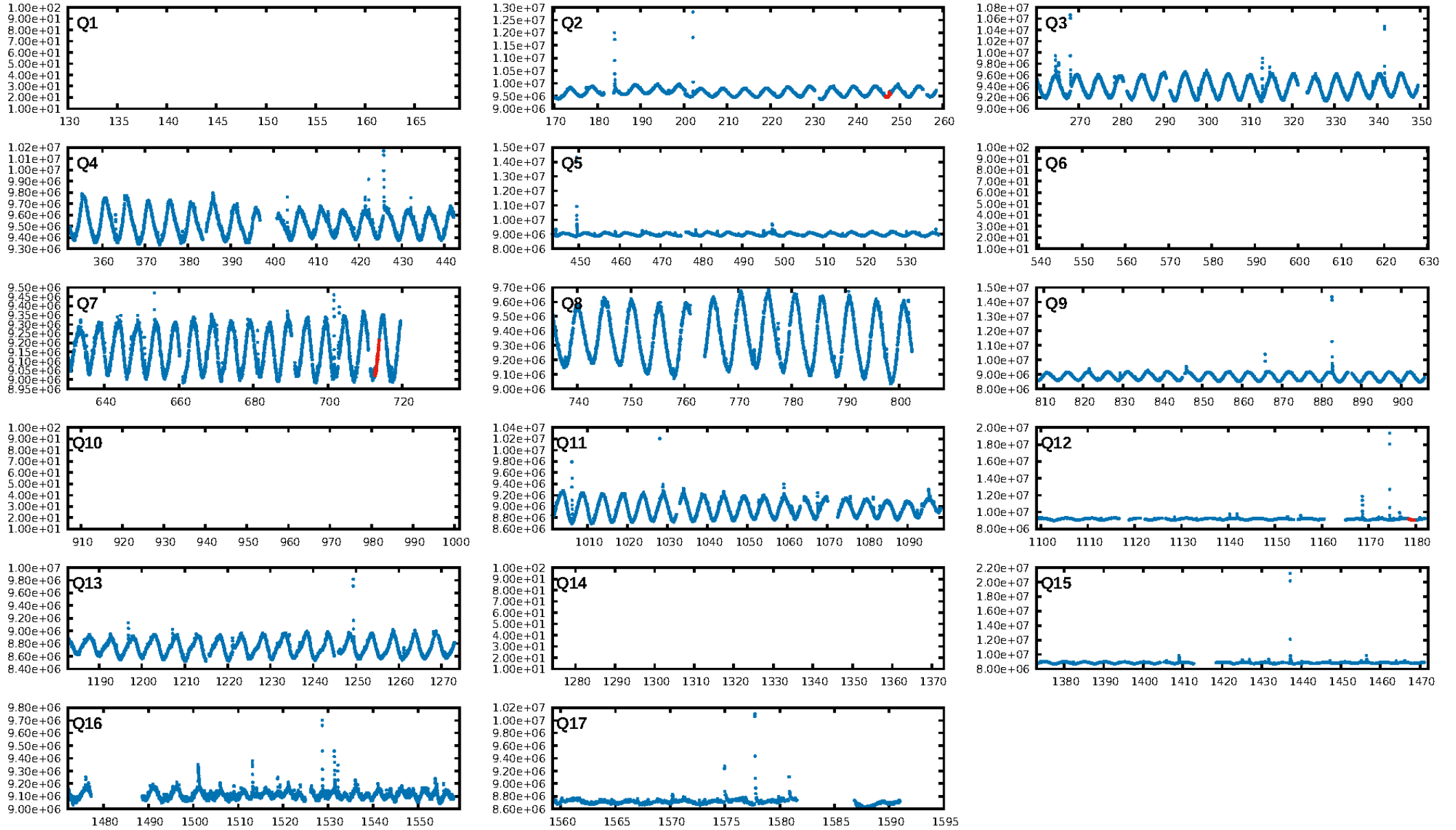
DV Fit Results:

Period = 465.93143 [0.01620] d
Epoch = 247.2615 [0.0149] BKJD
Rp/R* = 0.0446 [0.0167]
a/R* = 255.64 [375.05]
b = 0.02 [74.37]
Seff = 0.02 [0.00]
Teq = 91 [3] K
Rp = 1.40 [0.57] Re
a = 0.7647 [0.0895] AU
Ag = 371582.17 [297376.85] [1.25] σ
Teffp = 3466 [686] K [4.92] σ

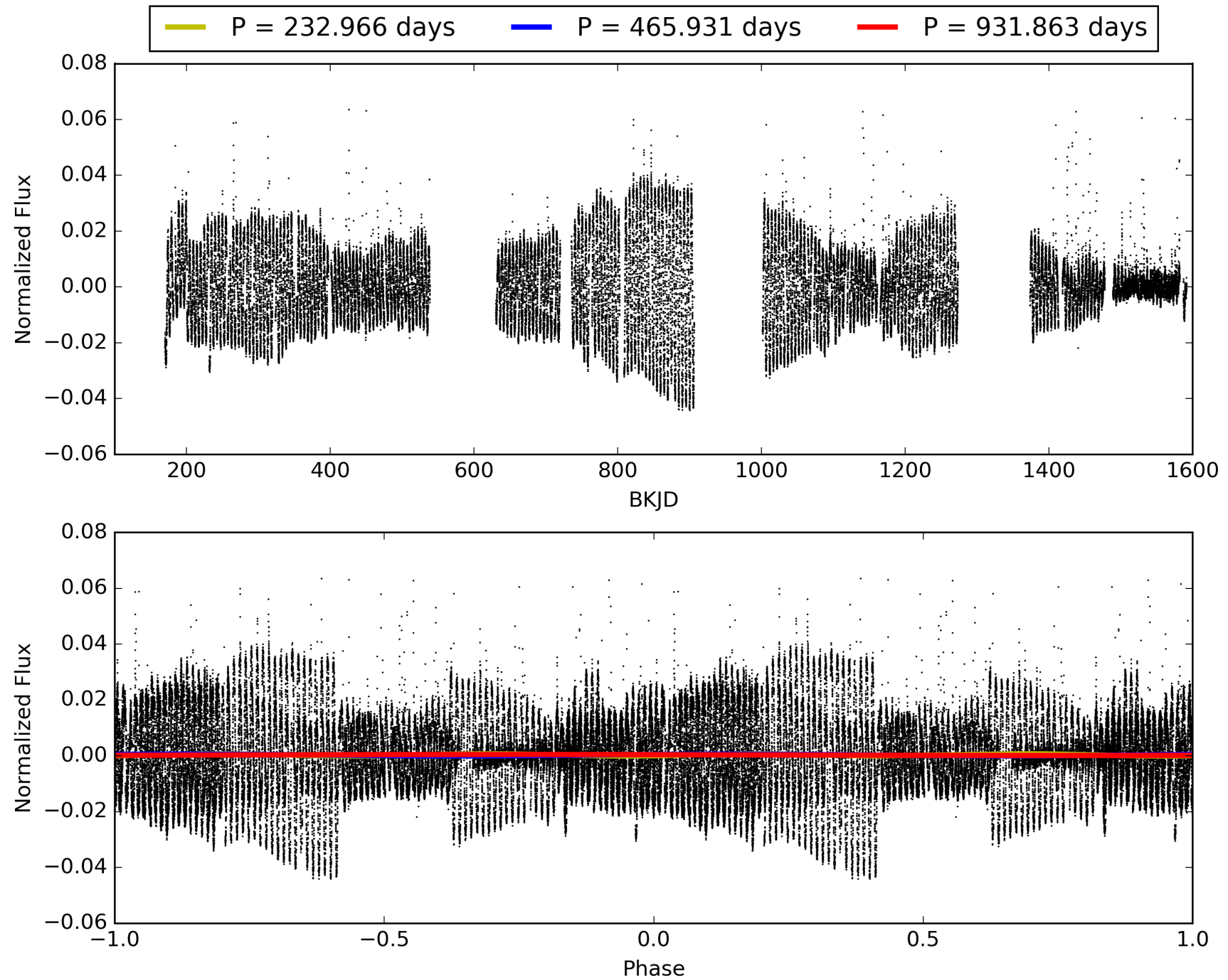
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [88.83 σ]
LongPeriod-sig: 100.0% [207.18 σ]
ModelChiSquare2-sig: 21.9%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.30e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.207
Centroid-sig: 56.0%
Centroid-so: 1.088 arcsec [1.44 σ]
OotOffset-rm: 0.234 arcsec [2.50 σ]
KicOffset-rm: 0.498 arcsec [5.34 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

TCE 004067894-06, PDC Light Curves

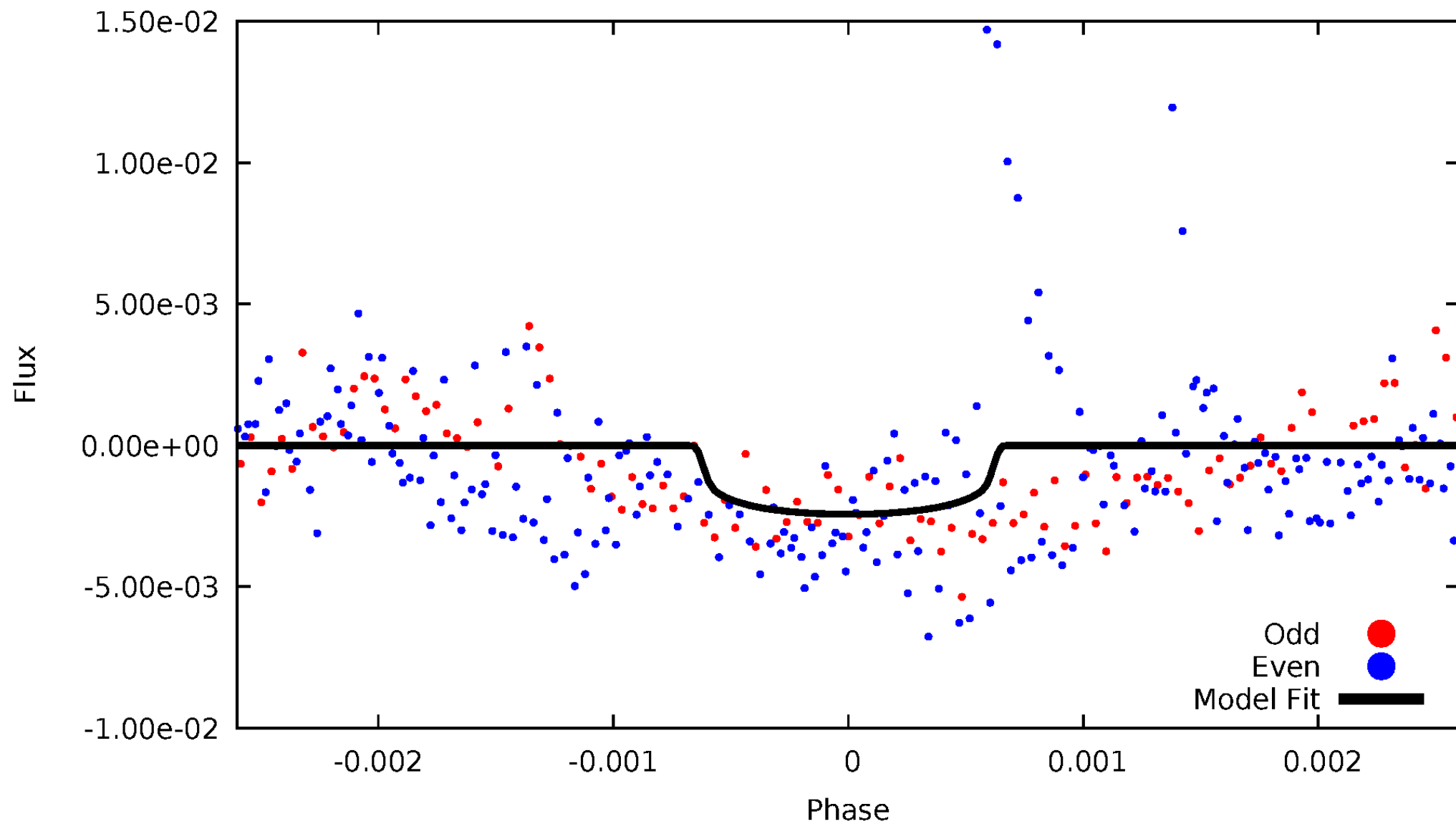


TCE 004067894-06



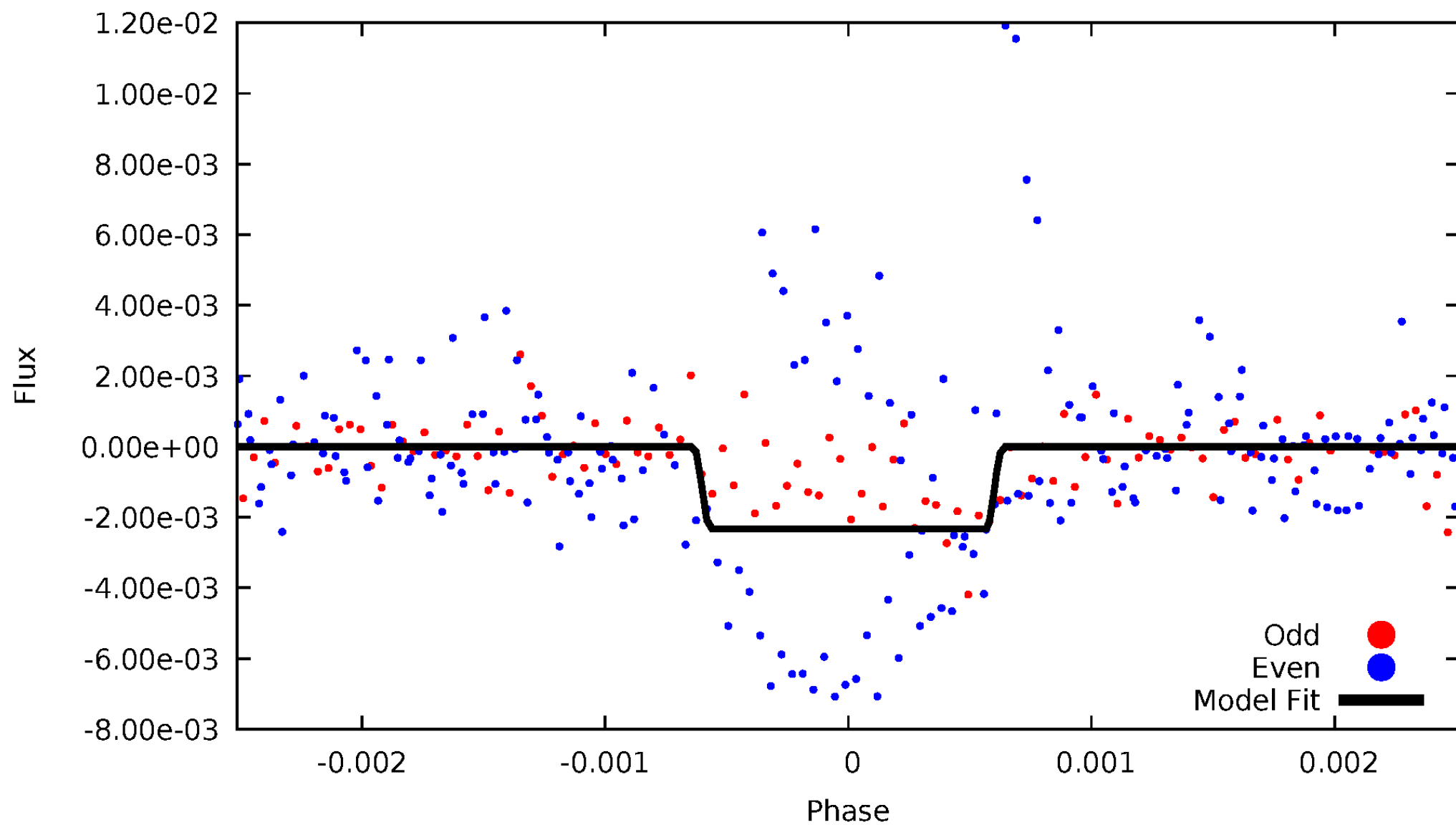
DV Odd/Even

TCE 004067894-06



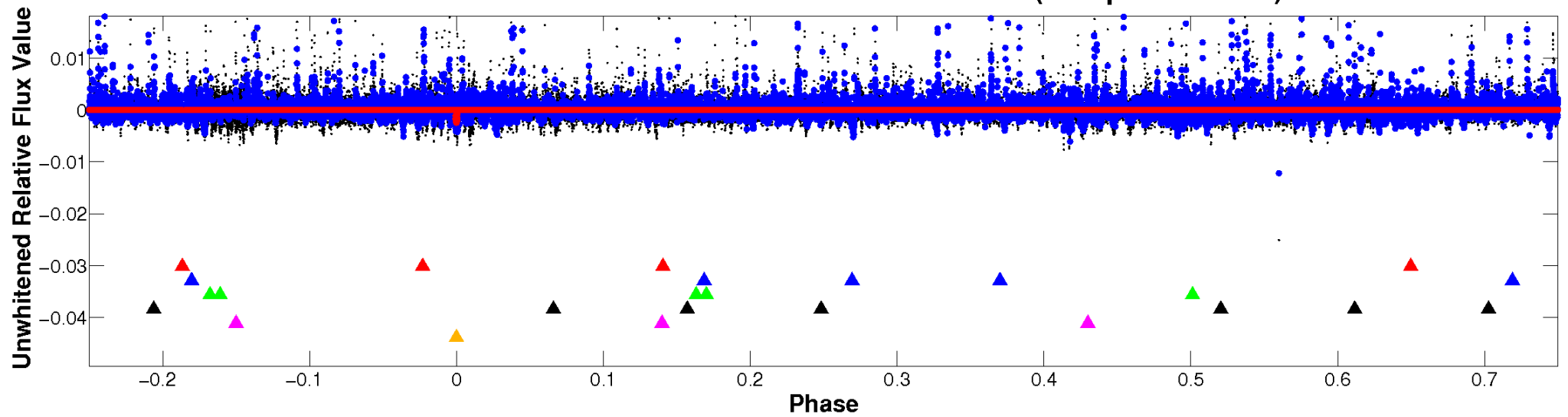
ALT Odd/Even

TCE 004067894-06

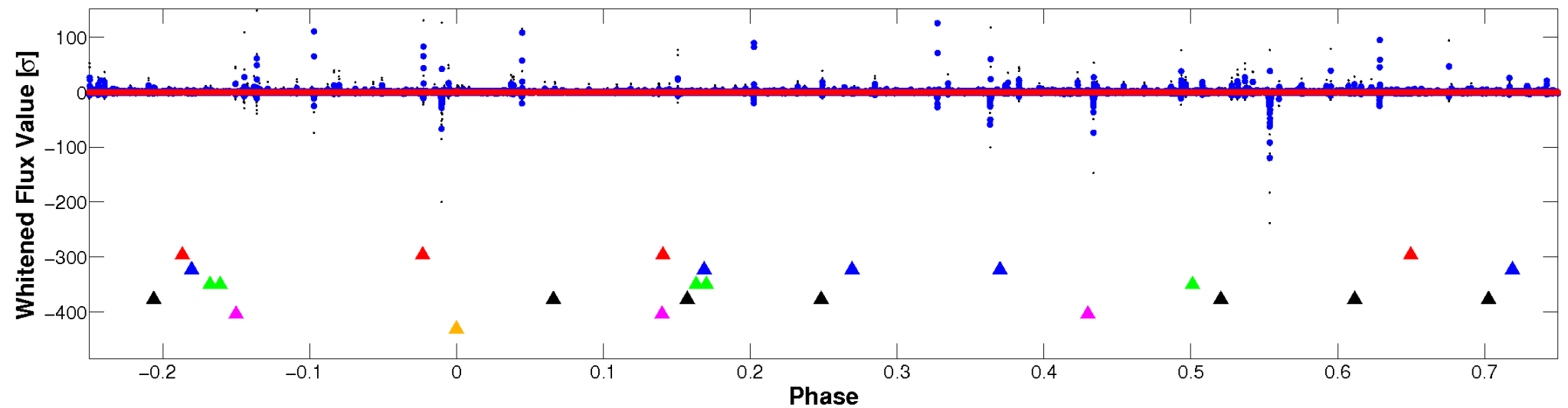


Non-Whitened Vs. Whitened Light Curve

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

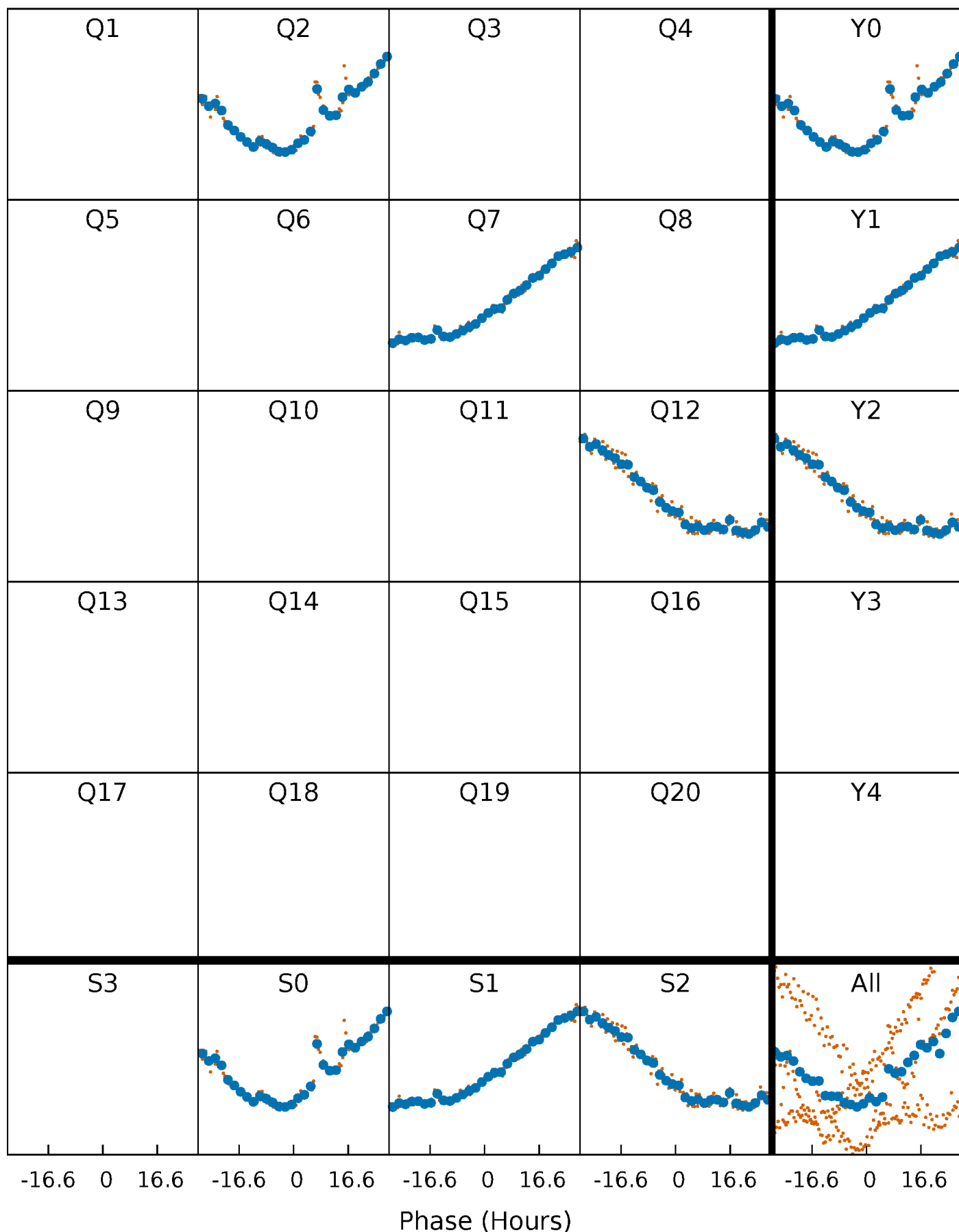


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



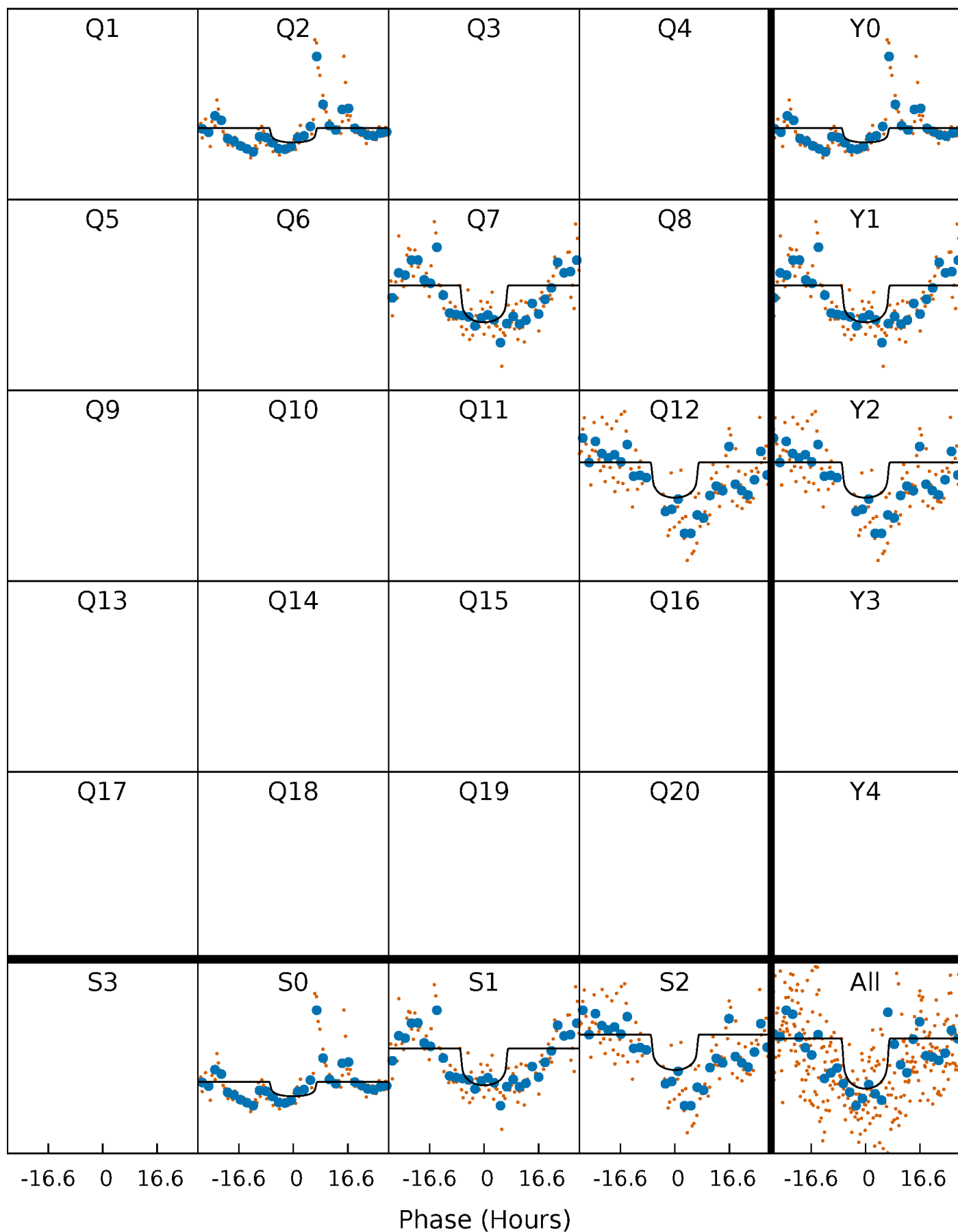
PDC Quarter-Phased Transit Curves

TCE 004067894-06 P=465.931432 Days $T_0=247.261542$ (BKJD)



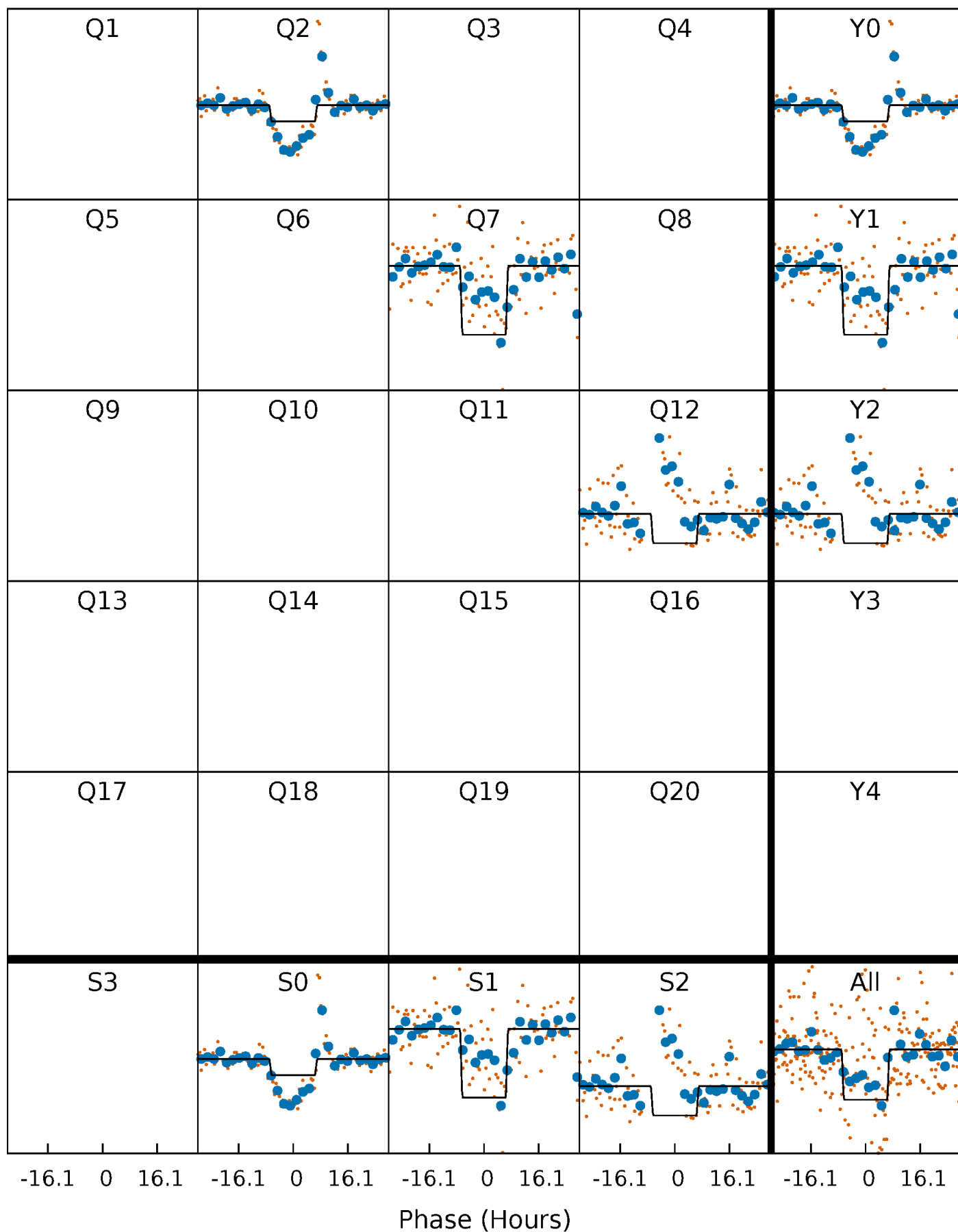
DV Quarter-Phased Transit Curves

TCE 004067894-06 P=465.931432 Days $T_0=247.261542$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

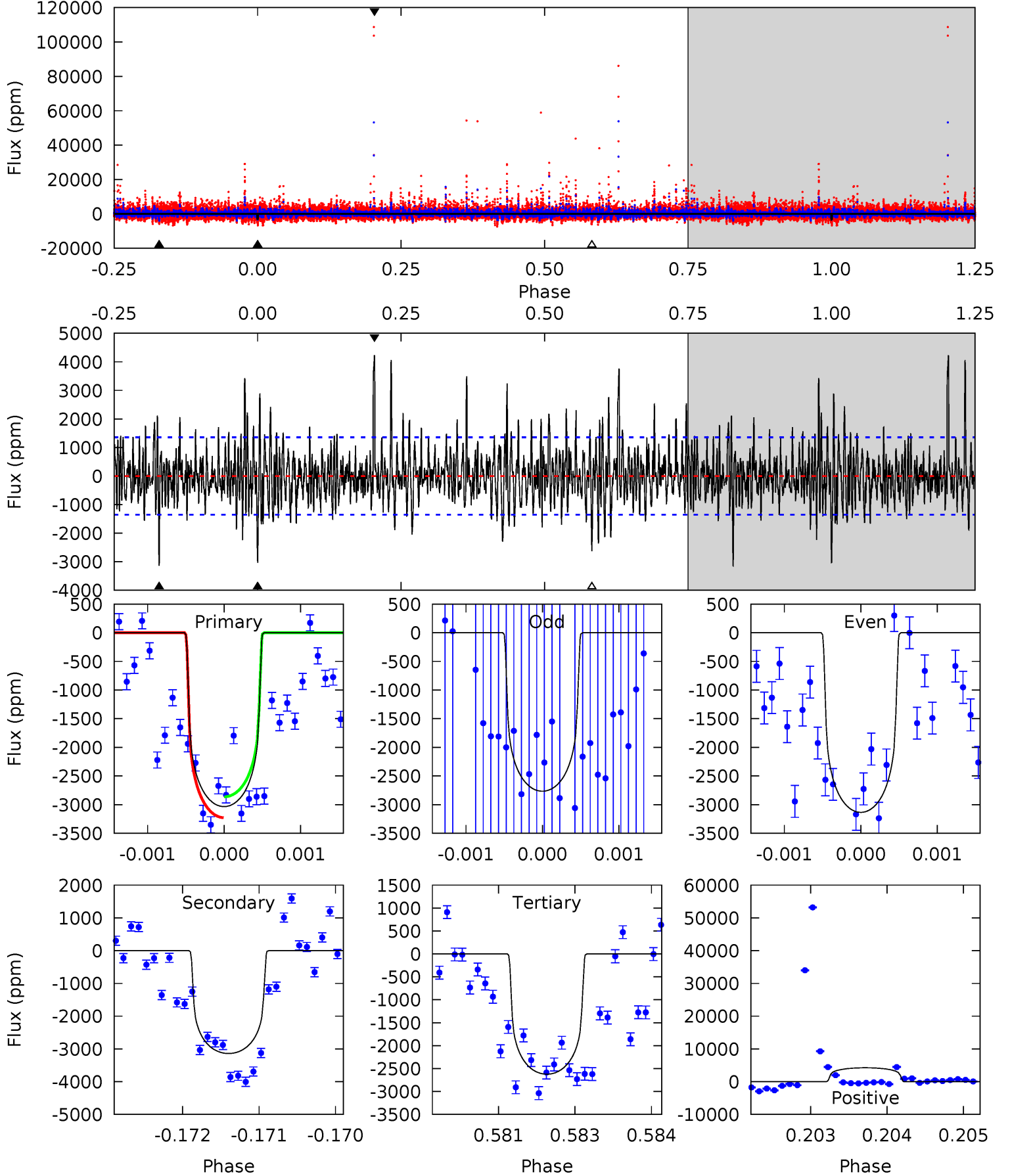
TCE 004067894-06 P=465.953280 Days $T_0=247.235345$ (BKJD)



DV Model-Shift Uniqueness Test

004067894-06, P = 465.931432 Days, E = 247.261542 Days

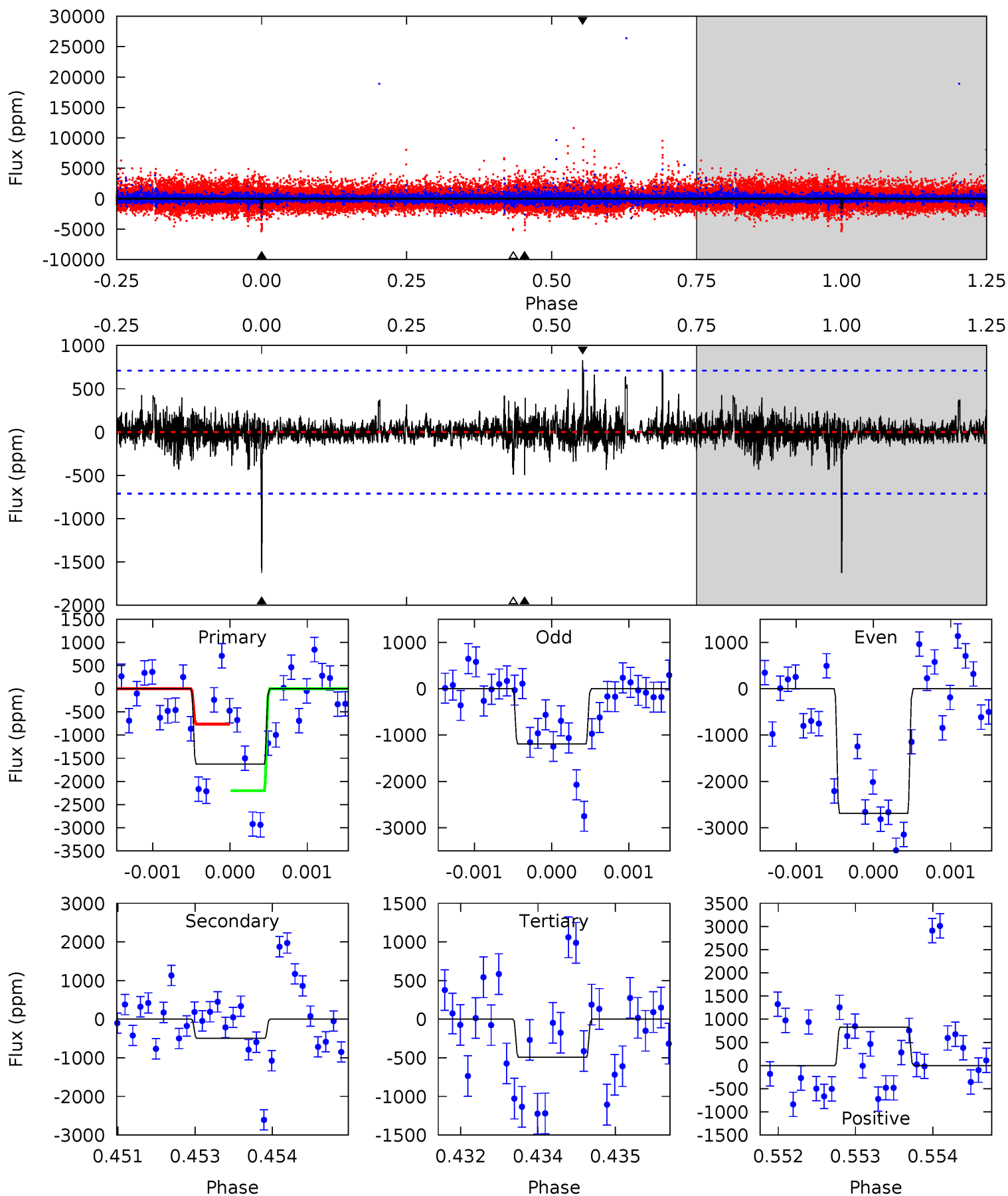
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	12.5	10.5	16.9	5.40	3.21	3.18	1.64	-4.76	2.06	-4.34	0.36	1.06	0.57	0.73



Alt Model-Shift Uniqueness Test

004067894-06, P = 465.953280 Days, E = 247.235345 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	3.77	3.74	6.32	5.41	3.22	0.77	8.63	6.06	0.02	-2.55	6.07	1.27	0.34	5.34



Stellar Parameters For KIC 004067894

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3360^{+55}_{-50}	$4.961^{+0.055}_{-0.050}$	$0.000^{+0.100}_{-0.100}$	$0.287^{+0.047}_{-0.038}$	$0.274^{+0.057}_{-0.041}$	$16.380^{+4.916}_{-3.772}$
	+2%/-1%	+1%/-1%	+inf%/-inf%	+16%/-13%	+21%/-15%	+30%/-23%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 004067894-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3141 ± 251	$1.41^{+0.53}_{-0.54}$	127^{+4}_{-4}	3610^{+630}_{-340}	$516434^{+818613}_{-241499}$
Alt.	-495 ± 131	$1.55^{+0.56}_{-0.46}$	127^{+4}_{-3}	2666^{+299}_{-207}	65173^{+71437}_{-32757}

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

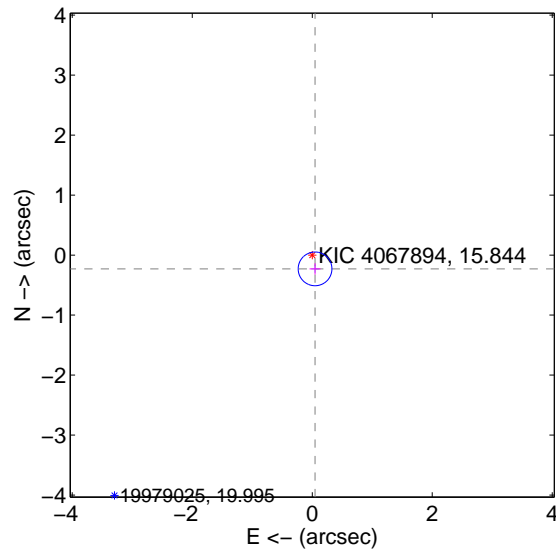
Supplemental centroid analysis for 004067894-06. Kepler magnitude: 15.84. Transit SNR 5.10

There are 1 quarters with good PRF difference image offsets

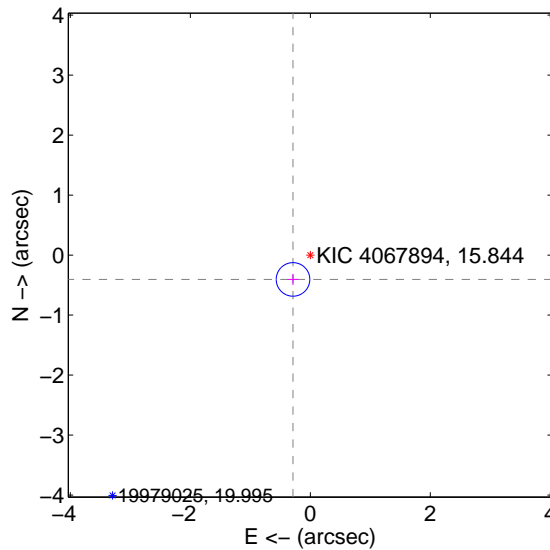
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.234 ± 0.094	2.50	-0.047 ± 0.092	-0.230 ± 0.094
PRF-fit source offset from KIC position	0.498 ± 0.093	5.34	0.289 ± 0.092	-0.405 ± 0.094
photometric centroid source offset	1.09 ± 0.76	1.44	0.92 ± 0.80	-0.58 ± 0.63

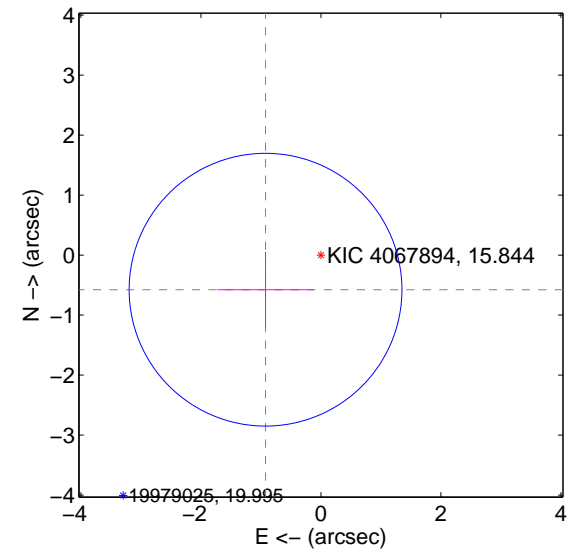
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

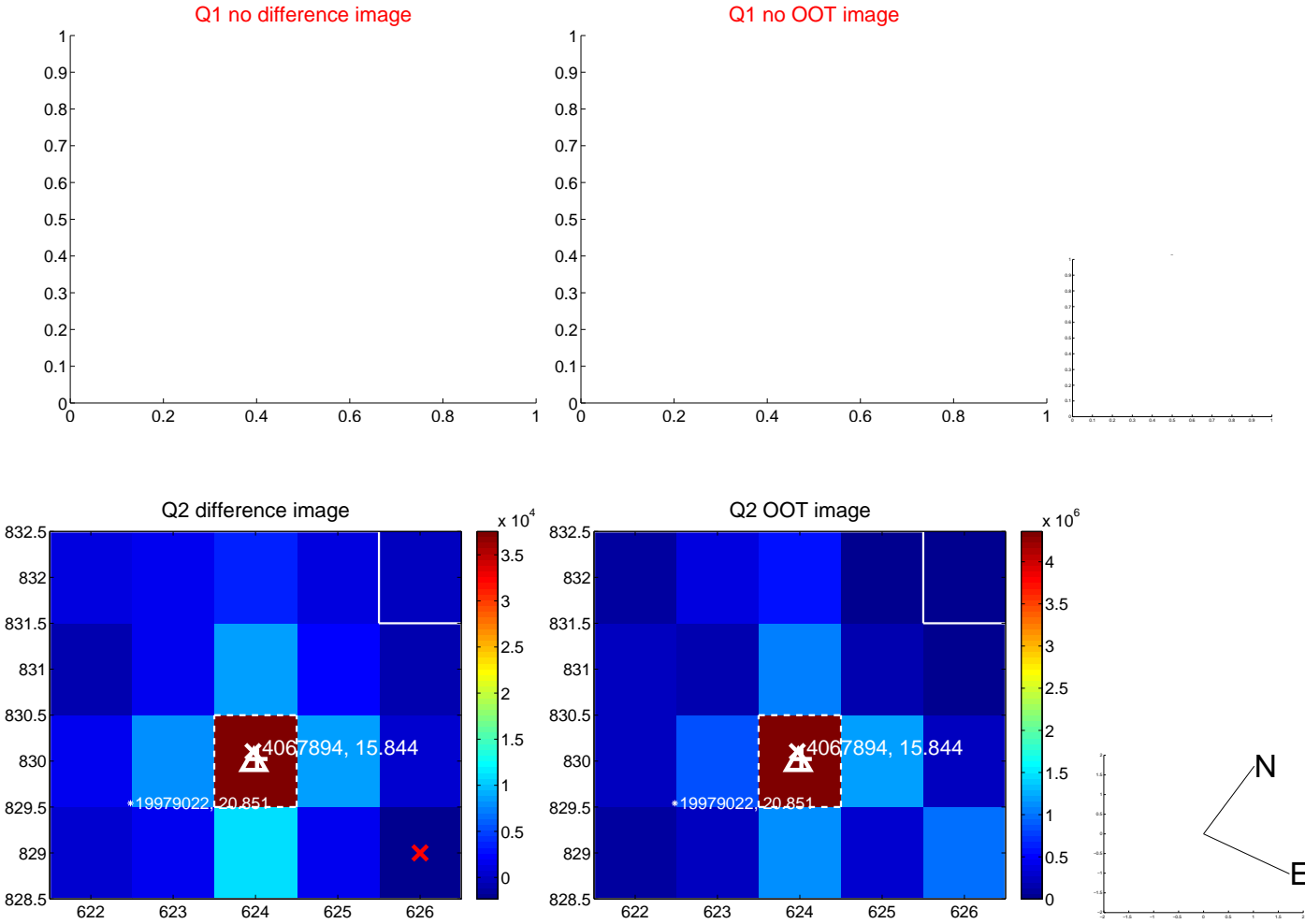


offset from photometric centroids



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.



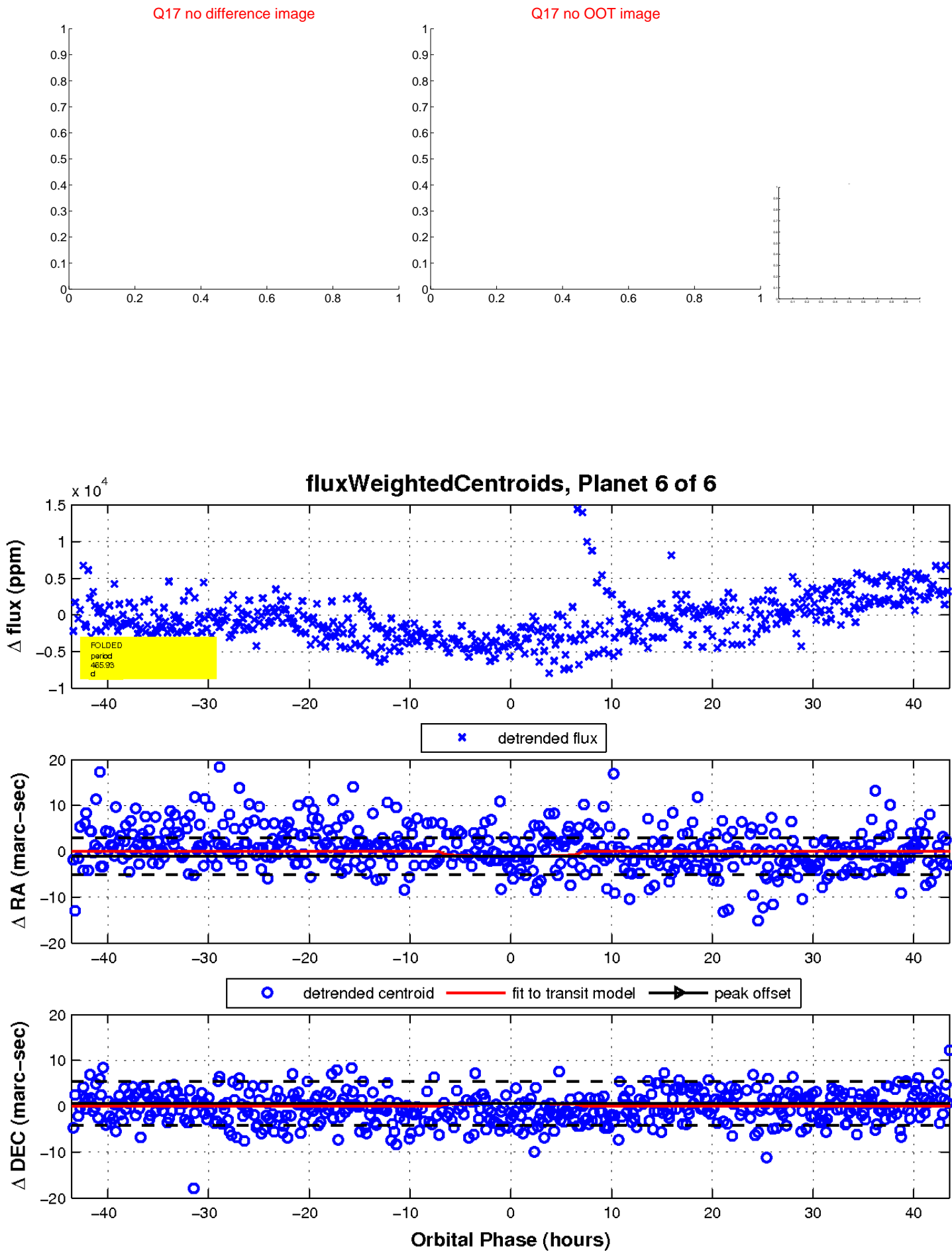
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

