

KIC 011708843

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})
011708843-01	OBS	No	429.045786	192.833750	2367.9	4.387	17.0	9.3	0.73	5254	3.73	0.38
011708843-02	OBS	No	635.028100	233.946933	1846.0	3.464	16.9	7.4	0.73	5254	3.10	0.23
011708843-03	OBS	No	376.596986	464.913875	1741.1	2.631	19.0	6.3	0.73	5254	3.16	0.45
011708843-04	OBS	No	385.645675	485.064526	3261.7	2.948	14.8	11.3	0.73	5254	4.13	0.44
011708843-05	OBS	No	370.653495	423.311350	1895.7	4.723	18.5	6.3	0.73	5254	3.28	0.46
011708843-06	OBS	No	432.256968	273.494588	2344.1	11.723	20.6	6.6	0.73	5254	3.92	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708843-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
011708843-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011708843-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
011708843-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-06	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

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

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

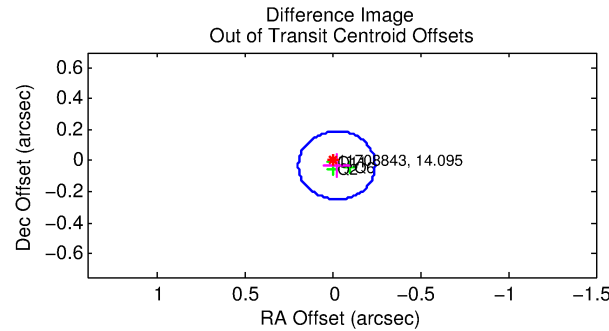
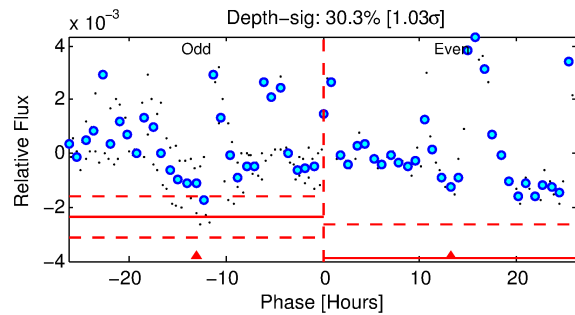
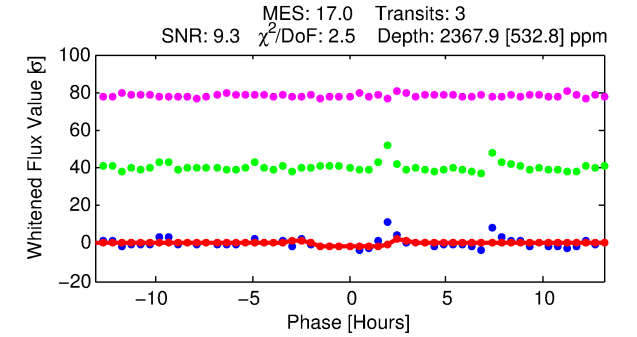
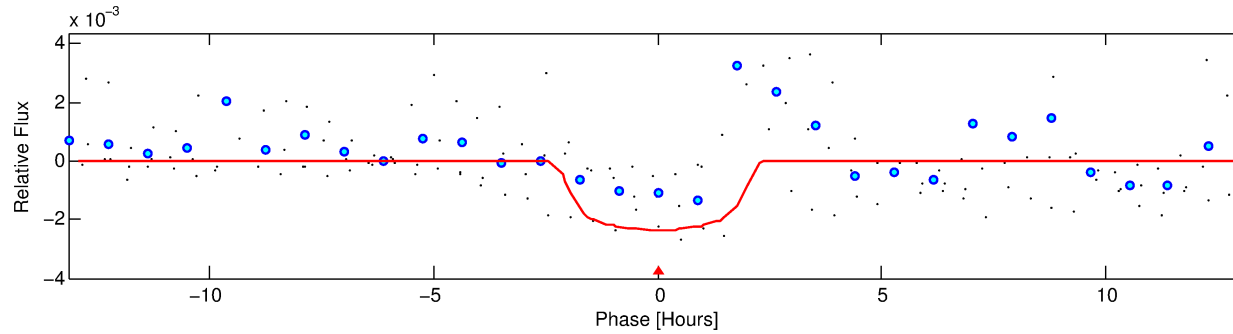
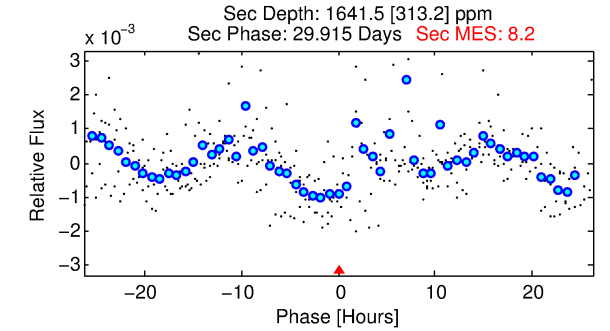
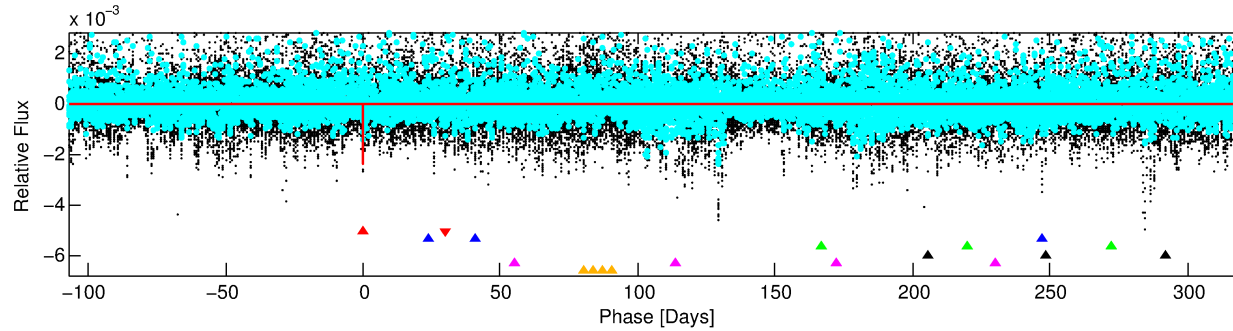
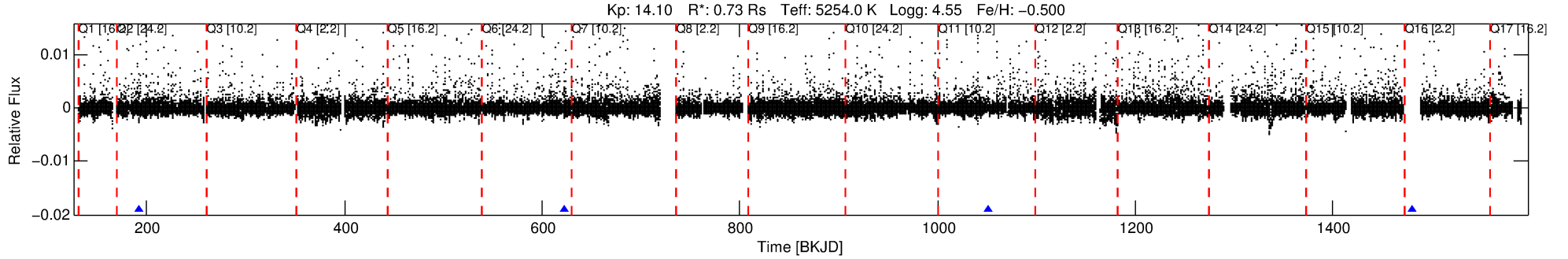
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708843-01

No Significant Match Found

DV One-Page Summary

KIC: 11708843 Candidate: 1 of 6 Period: 429.046 d



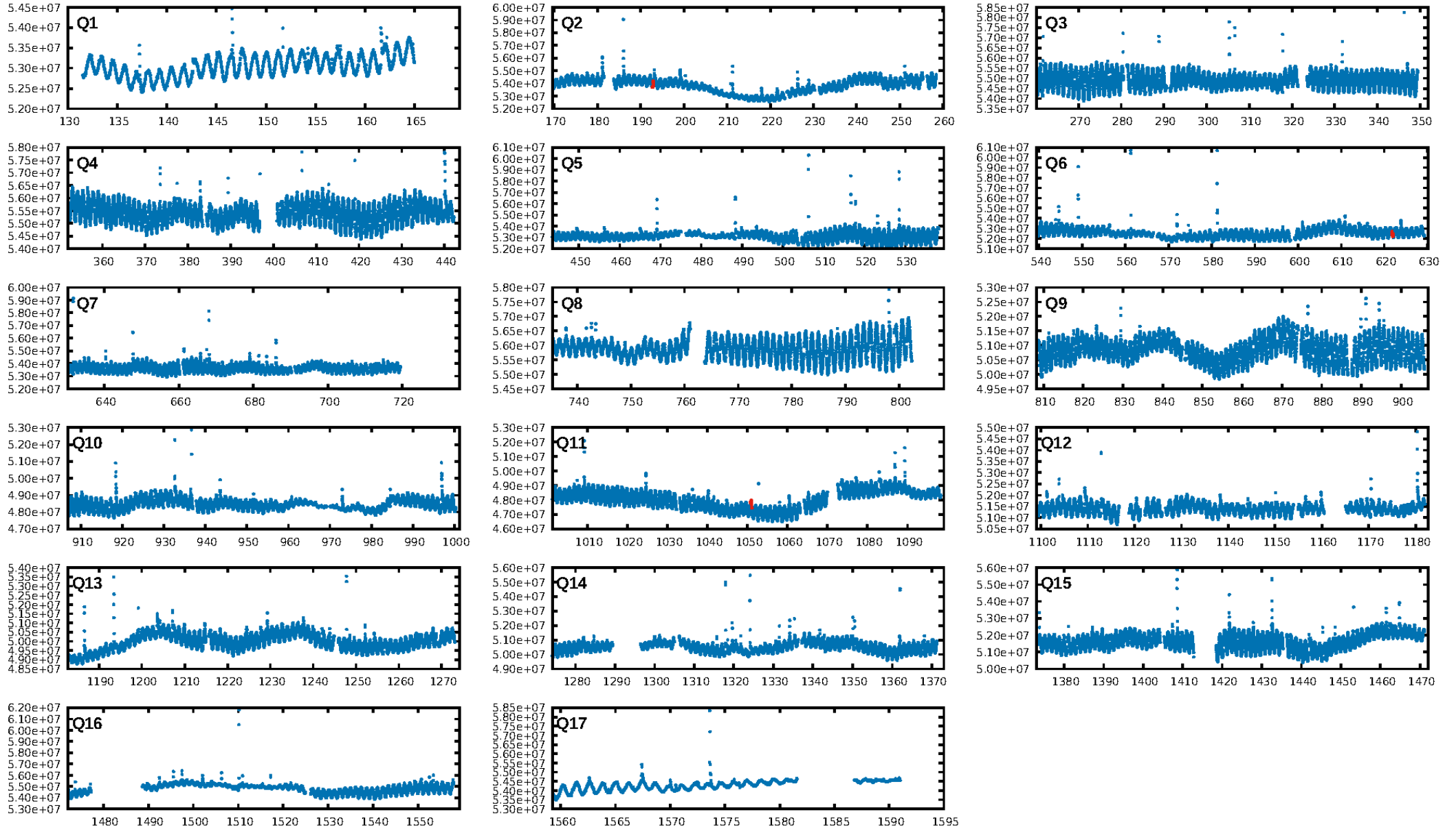
DV Fit Results:

Period = 429.04579 [0.00593] d
Epoch = 192.8337 [0.0072] BKJD
Rp/R* = 0.0465 [0.0650]
a/R* = 629.77 [3463.78]
b = 0.62 [5.53]
Seff = 0.38 [0.07]
Teff = 200 [10] K
Rp = 3.73 [5.24] Re
a = 0.9853 [0.1023] AU
Ag = 63045.45 [177095.87] [0.36σ]
Teffp = 4905 [3442] K [1.37σ]

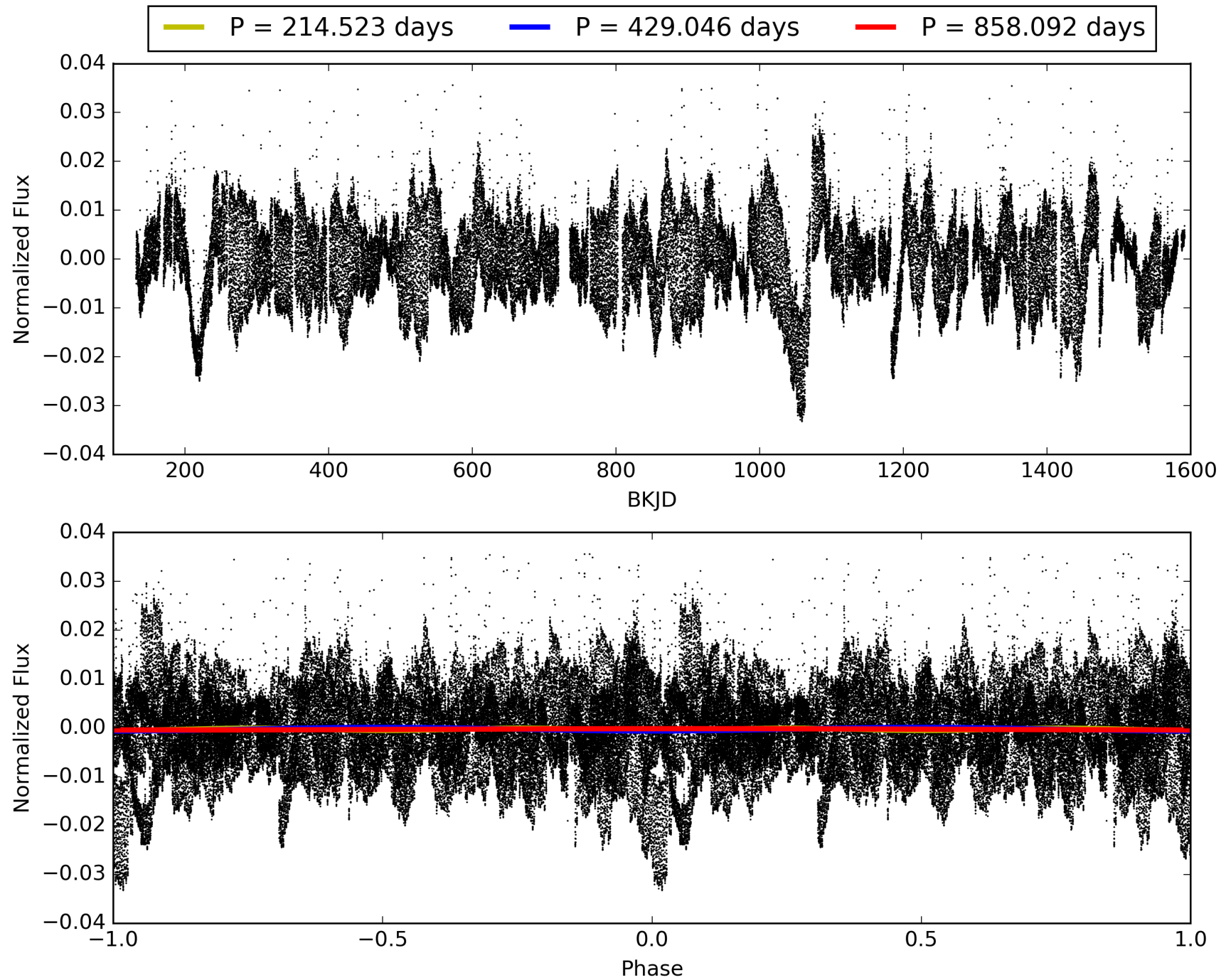
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [197.07σ]
LongPeriod-sig: 100.0% [6.16σ]
ModelChiSquare2-sig: 45.3%
ModelChiSquareGof-sig: 69.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.8389
Centroid-sig: 55.2%
Centroid-so: 0.387 arcsec [1.46σ]
OotOffset-rm: 0.037 arcsec [0.51σ]
KicOffset-rm: 0.117 arcsec [1.36σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 011708843-01, PDC Light Curves

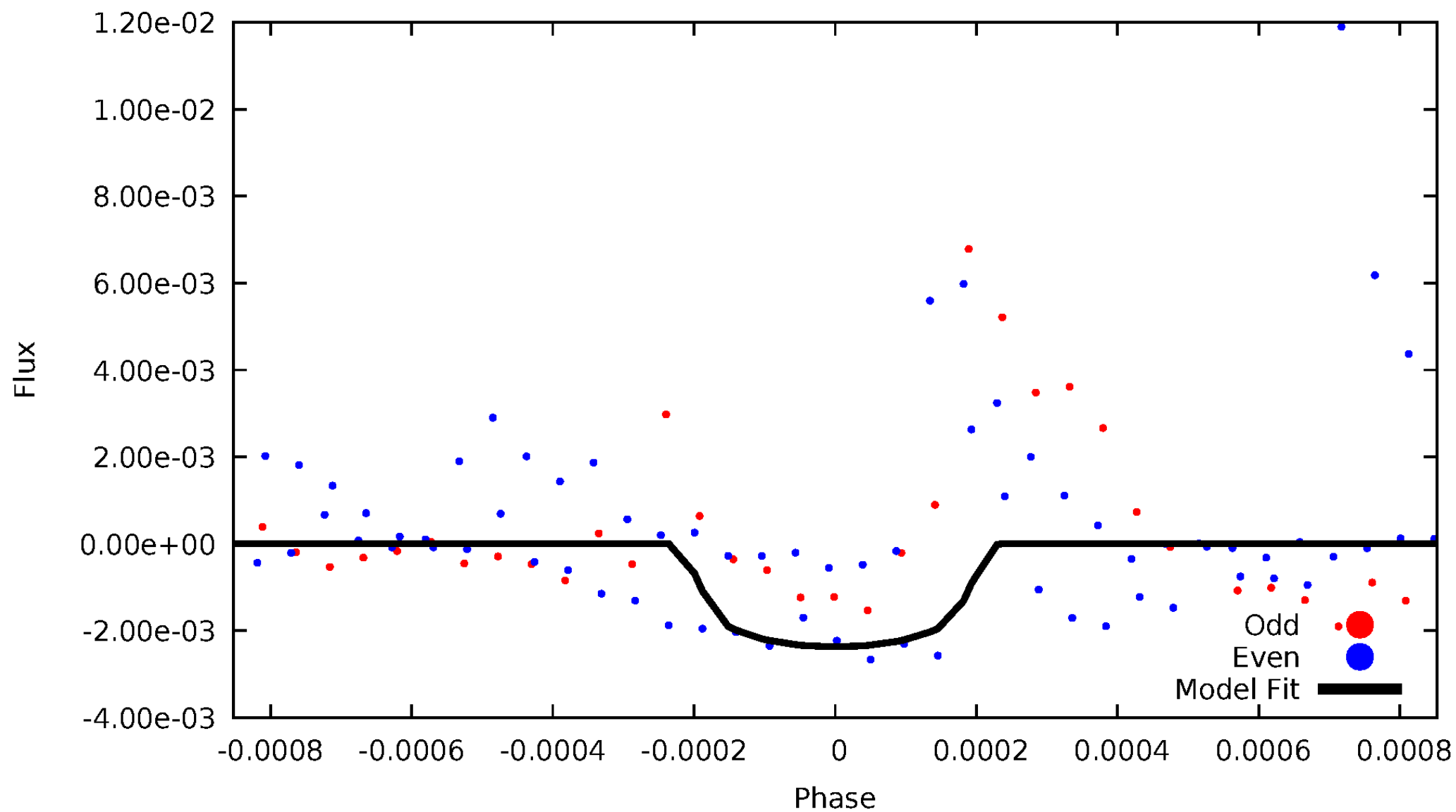


TCE 011708843-01



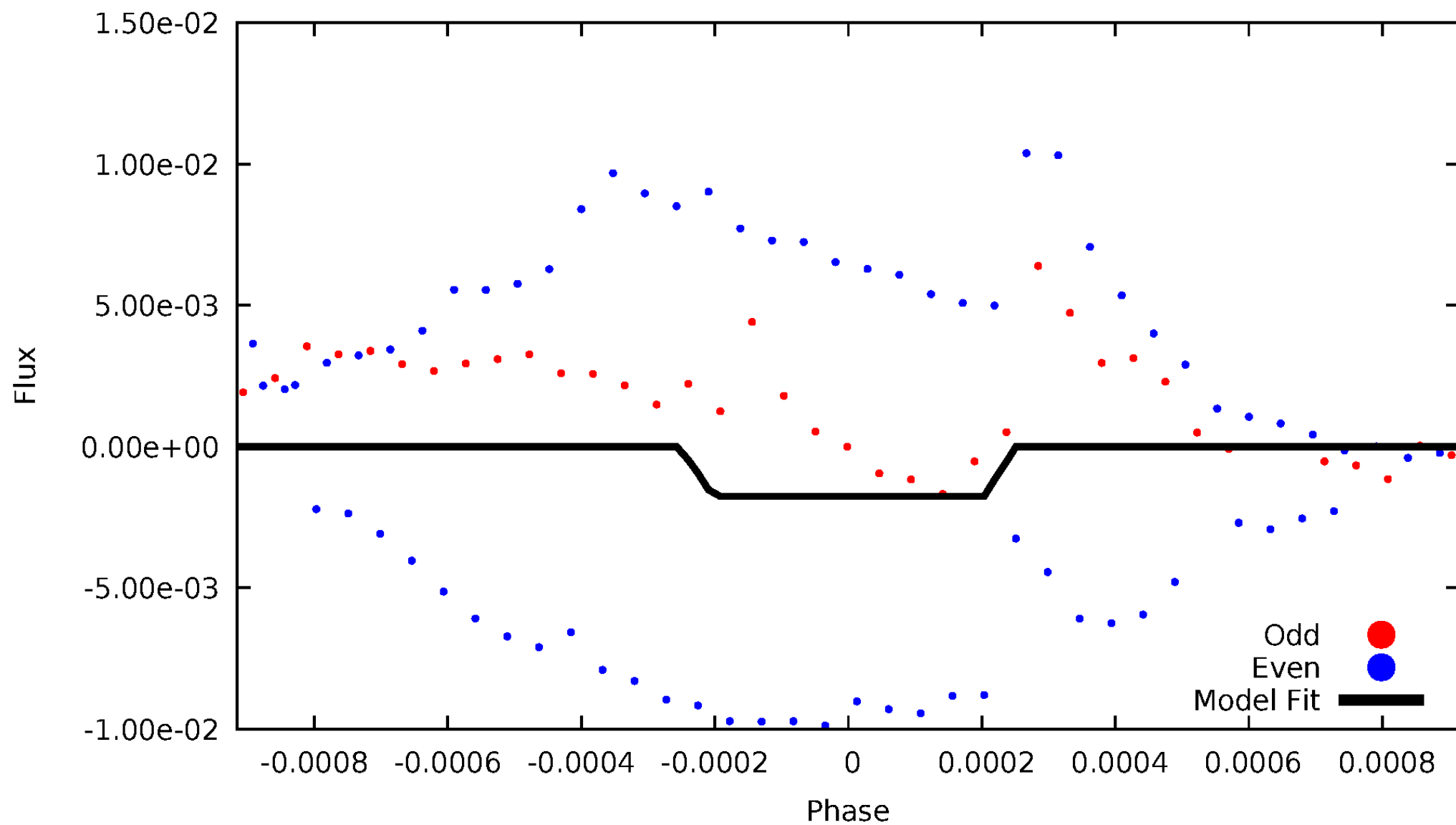
DV Odd/Even

TCE 011708843-01



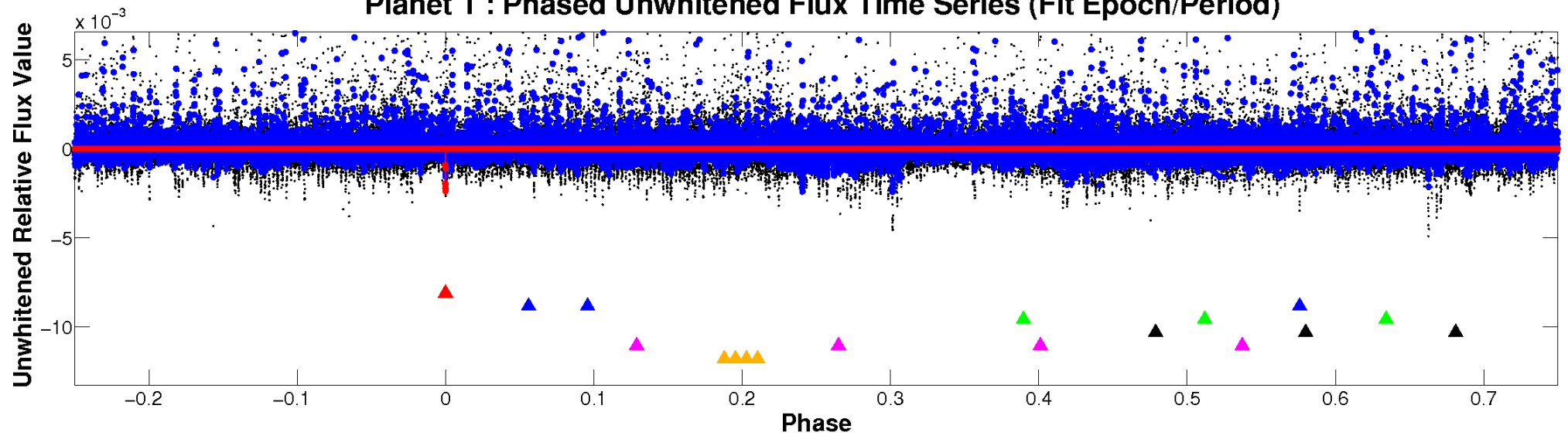
ALT Odd/Even

TCE 011708843-01

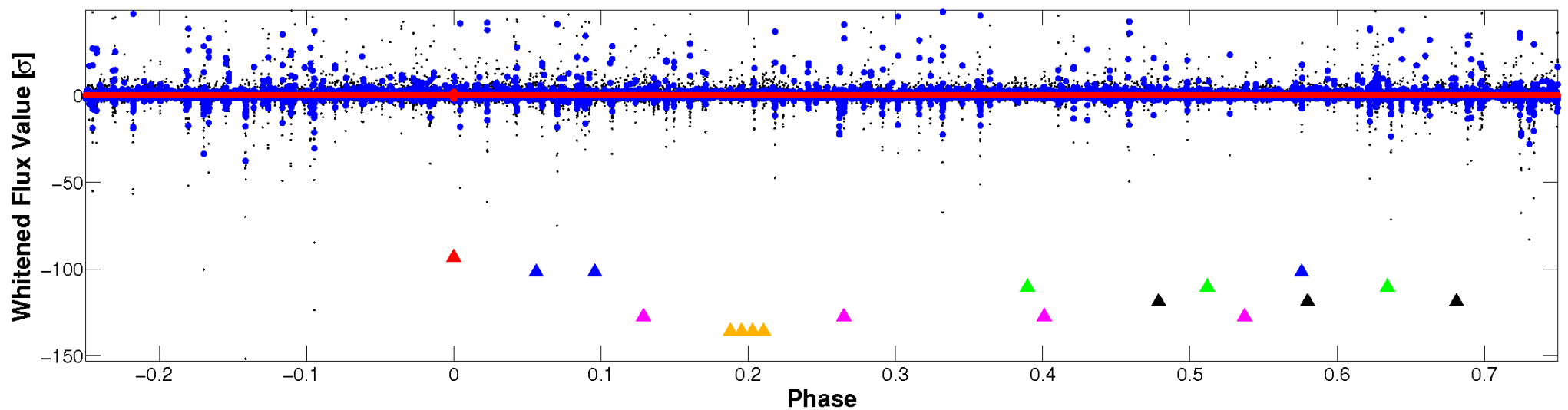


Non-Whitened Vs. Whitened Light Curve

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

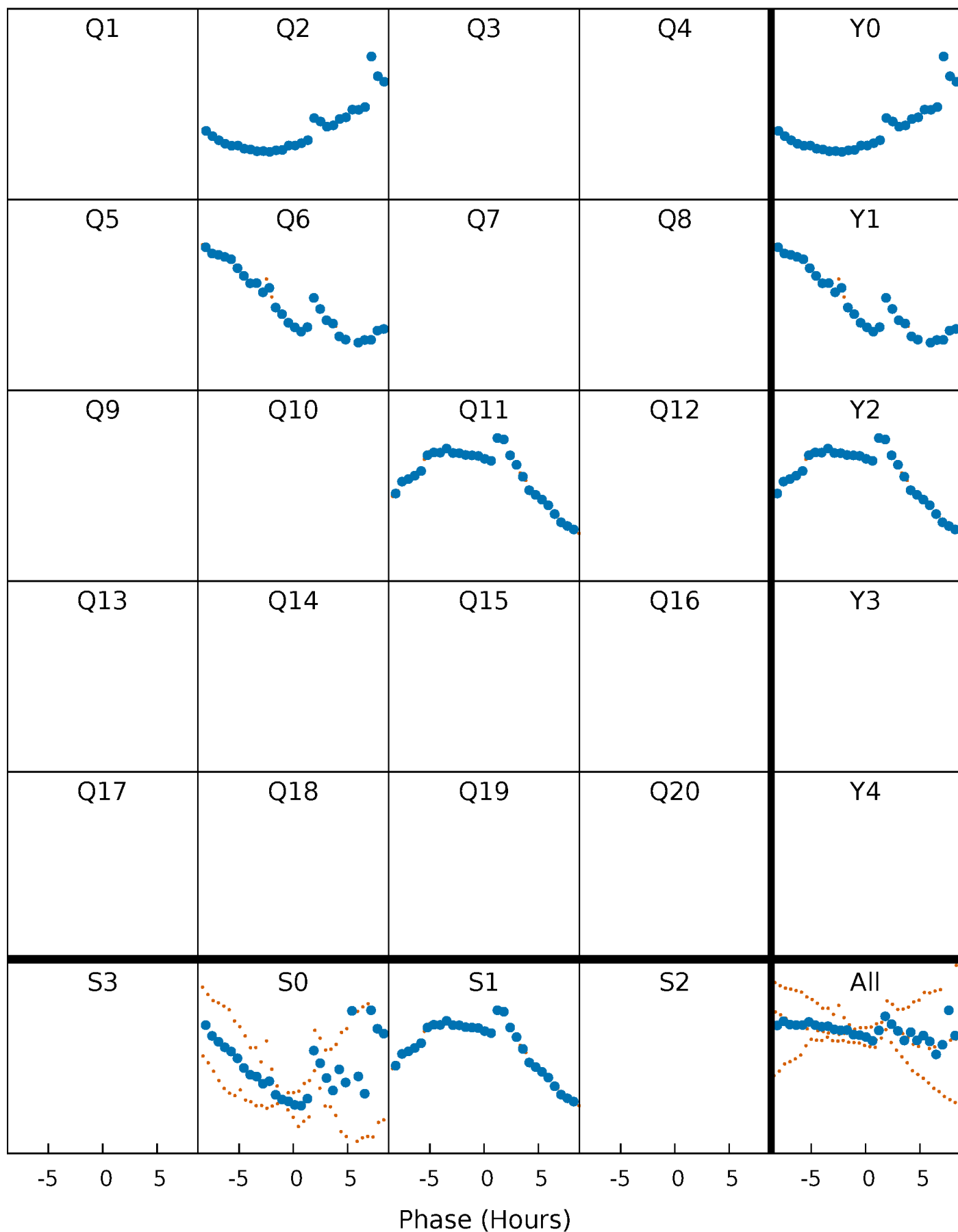


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



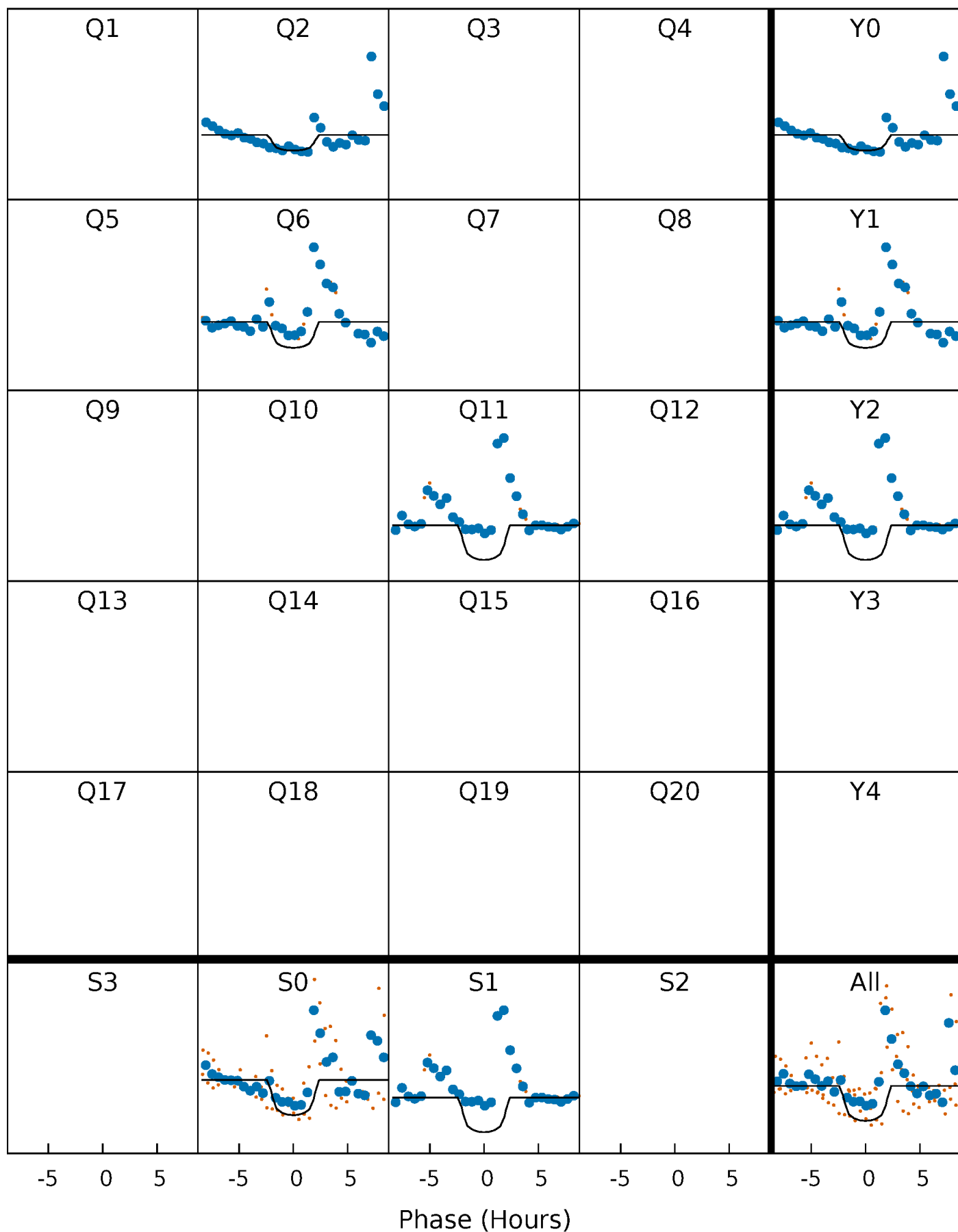
PDC Quarter-Phased Transit Curves

TCE 011708843-01 P=429.045786 Days $T_0=192.833750$ (BKJD)



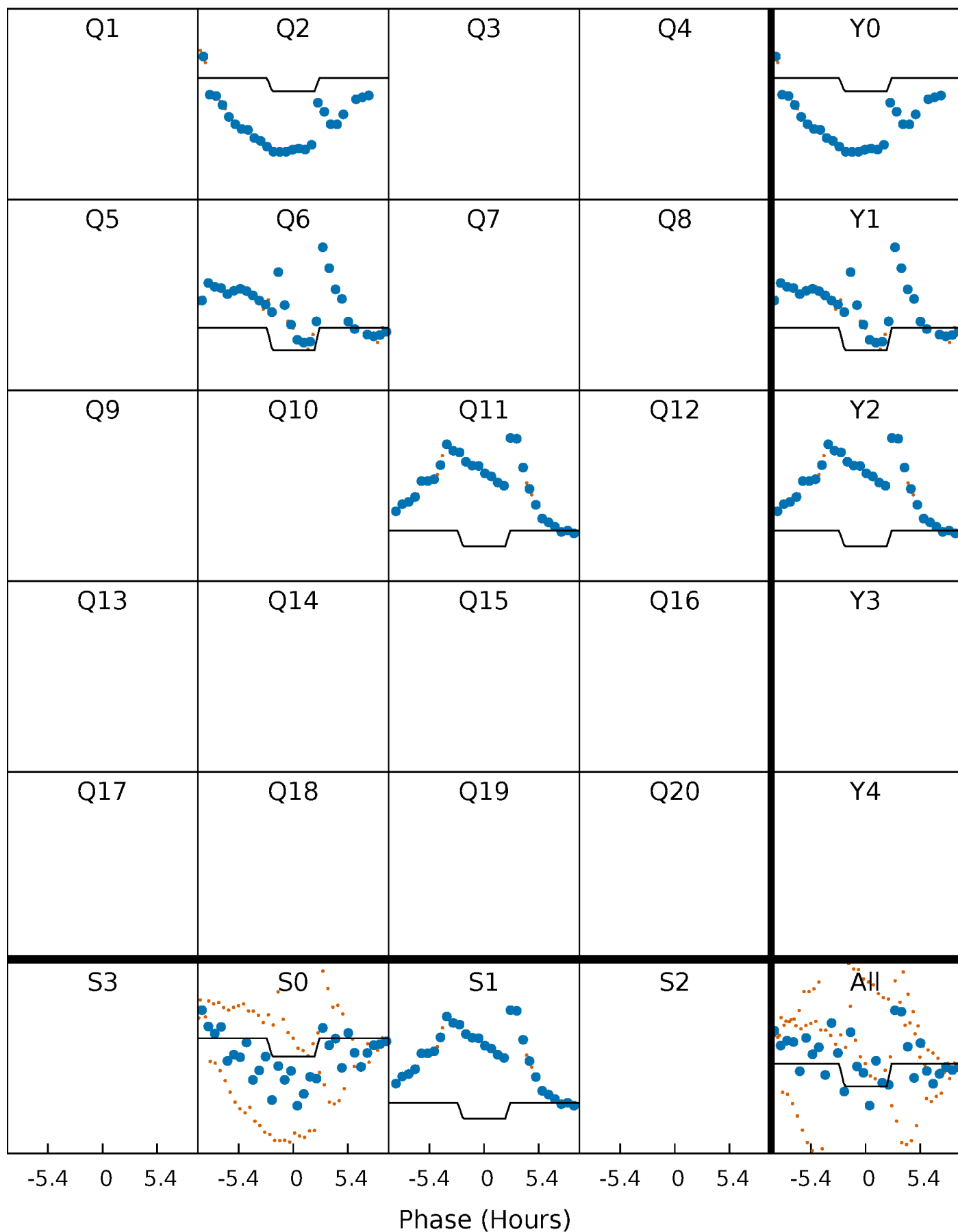
DV Quarter-Phased Transit Curves

TCE 011708843-01 P=429.045786 Days $T_0=192.833750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

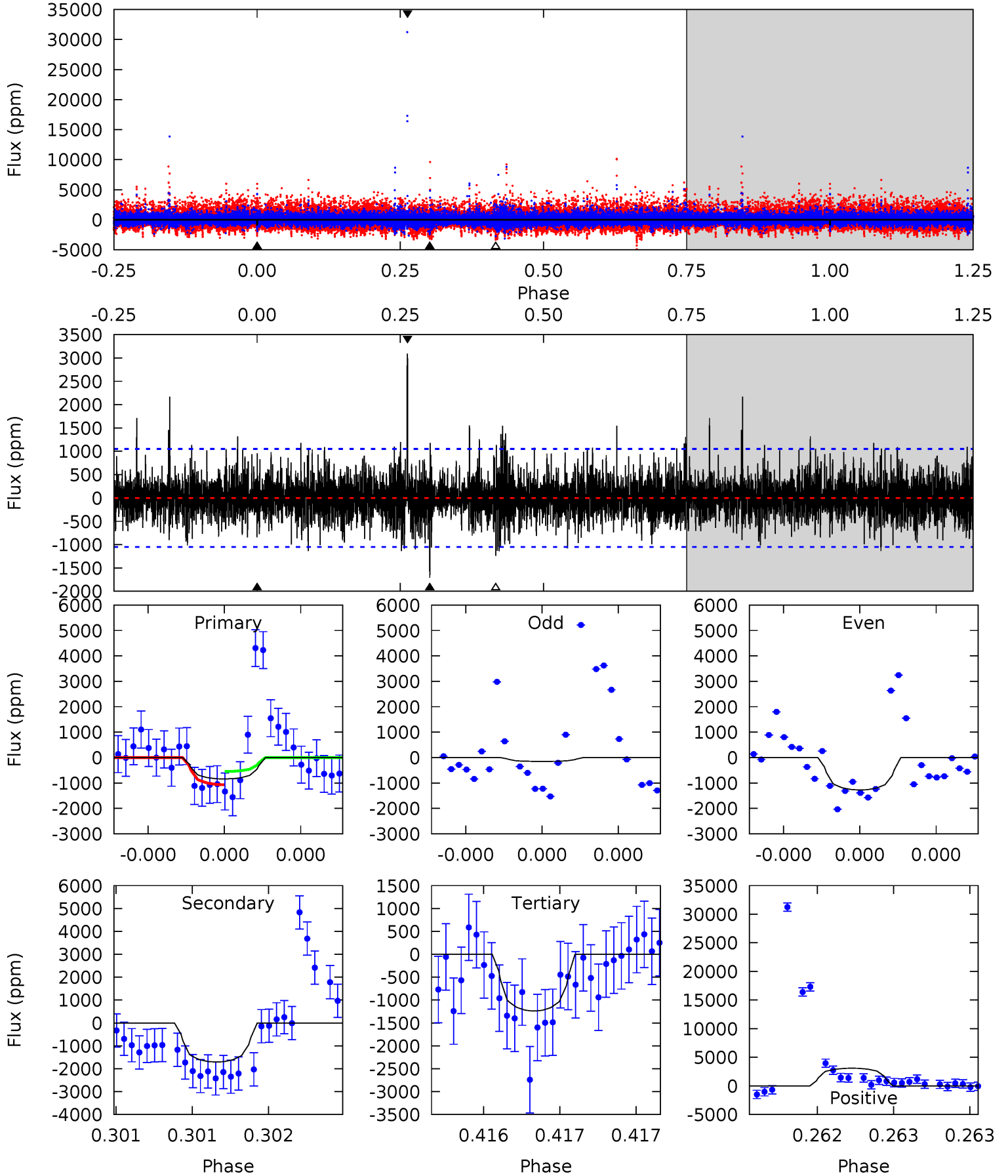
TCE 011708843-01 P=429.029837 Days $T_0=192.808810$ (BKJD)



DV Model-Shift Uniqueness Test

011708843-01, P = 429.045786 Days, E = 192.833750 Days

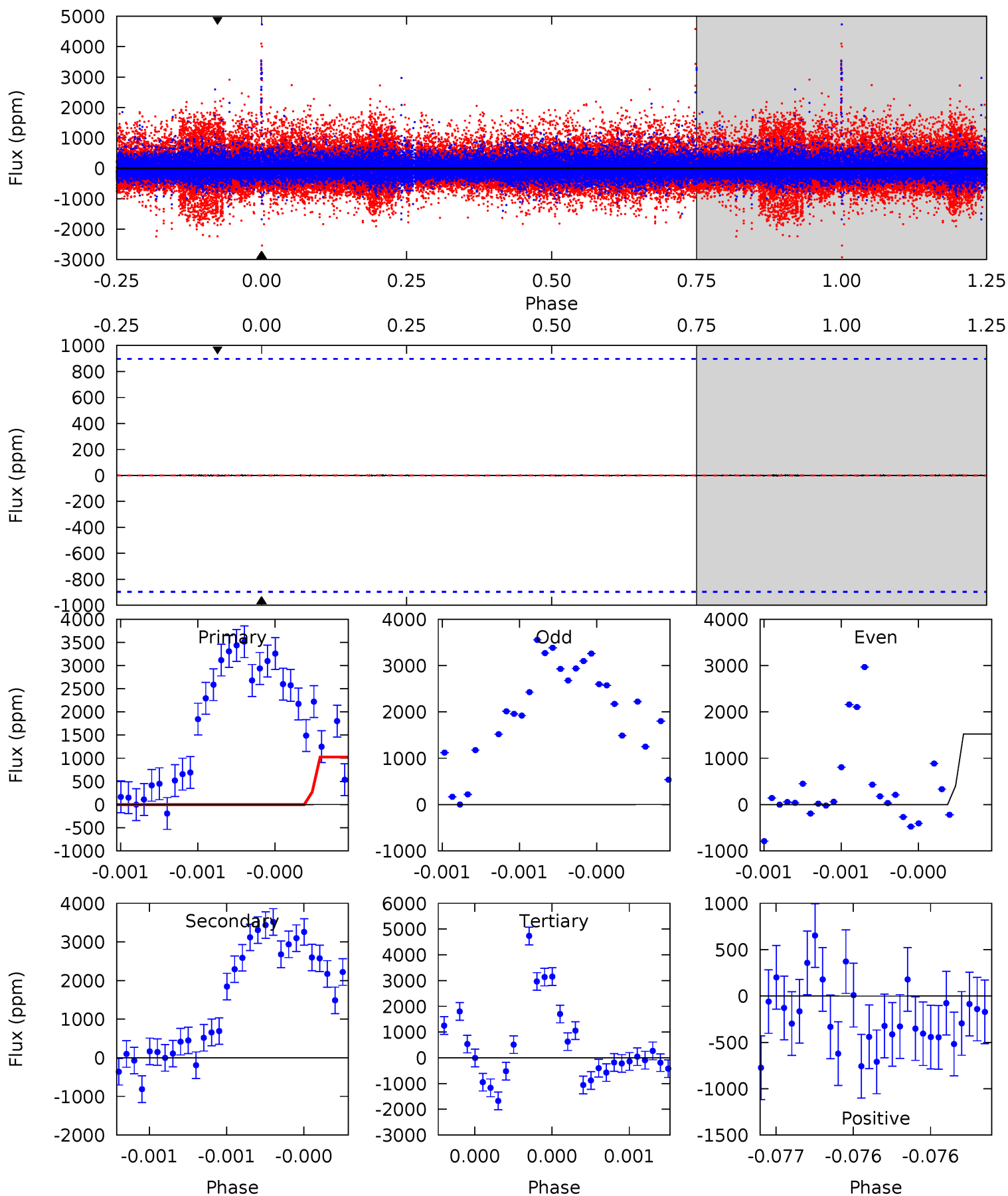
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.49	9.11	6.61	16.5	5.60	3.52	1.86	-2.12	-12.0	2.50	-7.36	1.99	3.16	0.64	1.40



Alt Model-Shift Uniqueness Test

011708843-01, P = 429.029837 Days, E = 192.808810 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.02	0	0.01	0	5.59	3.50	0.00	0.00	0.02	-0.01	0	7.16	-1.59	0.21	0.04



Stellar Parameters For KIC 011708843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5254^{+157}_{-157}	$4.546^{+0.088}_{-0.072}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.087}_{-0.087}$	$0.693^{+0.099}_{-0.042}$	$2.458^{+0.925}_{-0.567}$
	+3%/-3%	+2%/-2%	+70%/-60%	+12%/-12%	+14%/-6%	+38%/-23%
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 011708843-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1708 ± 188	$5.48^{+4.63}_{-3.60}$	279^{+12}_{-11}	4291^{+2772}_{-835}	$31117^{+224266}_{-22067}$
Alt.	-2 ± 161	$5.05^{+4.50}_{-3.21}$	279^{+11}_{-12}	-2037^{+5232}_{-1249}	$-139.550^{+5358.950}_{-6052.530}$

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

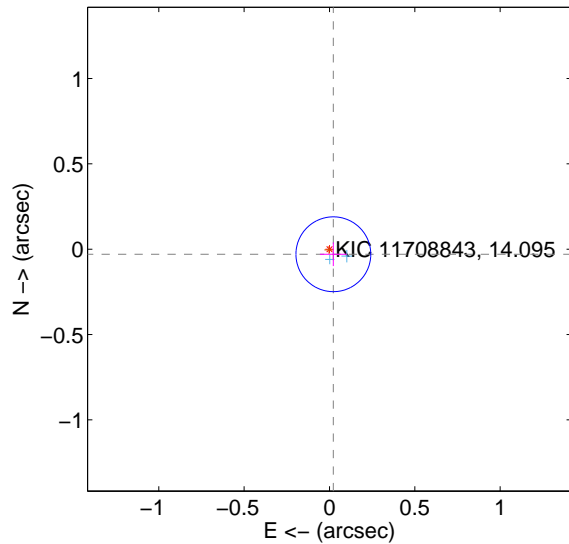
Supplemental centroid analysis for 011708843-01. Kepler magnitude: 14.10. Transit SNR 9.34

There are 2 quarters with good PRF difference image offsets

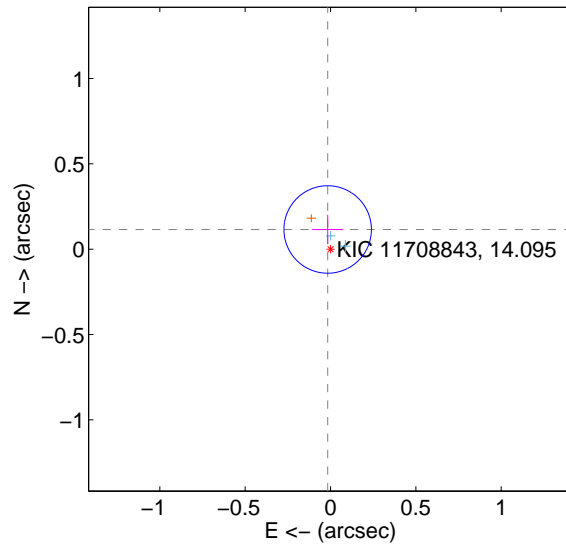
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.037 ± 0.073	0.51	-0.023 ± 0.079	-0.030 ± 0.070
PRF-fit source offset from KIC position	0.117 ± 0.085	1.36	0.017 ± 0.091	0.115 ± 0.085
photometric centroid source offset	0.39 ± 0.26	1.46	0.39 ± 0.26	0.03 ± 0.30

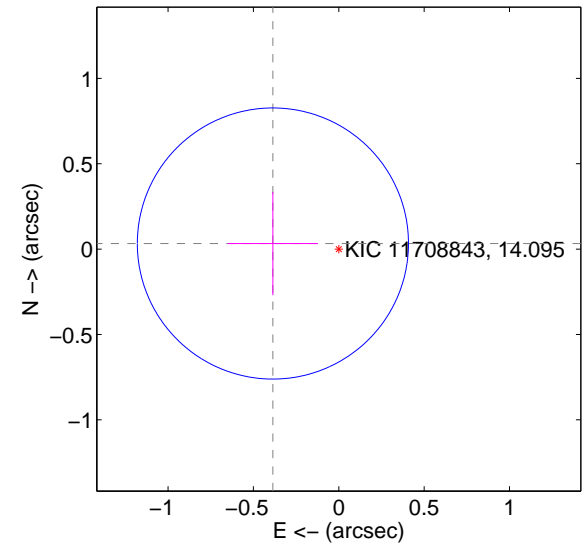
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

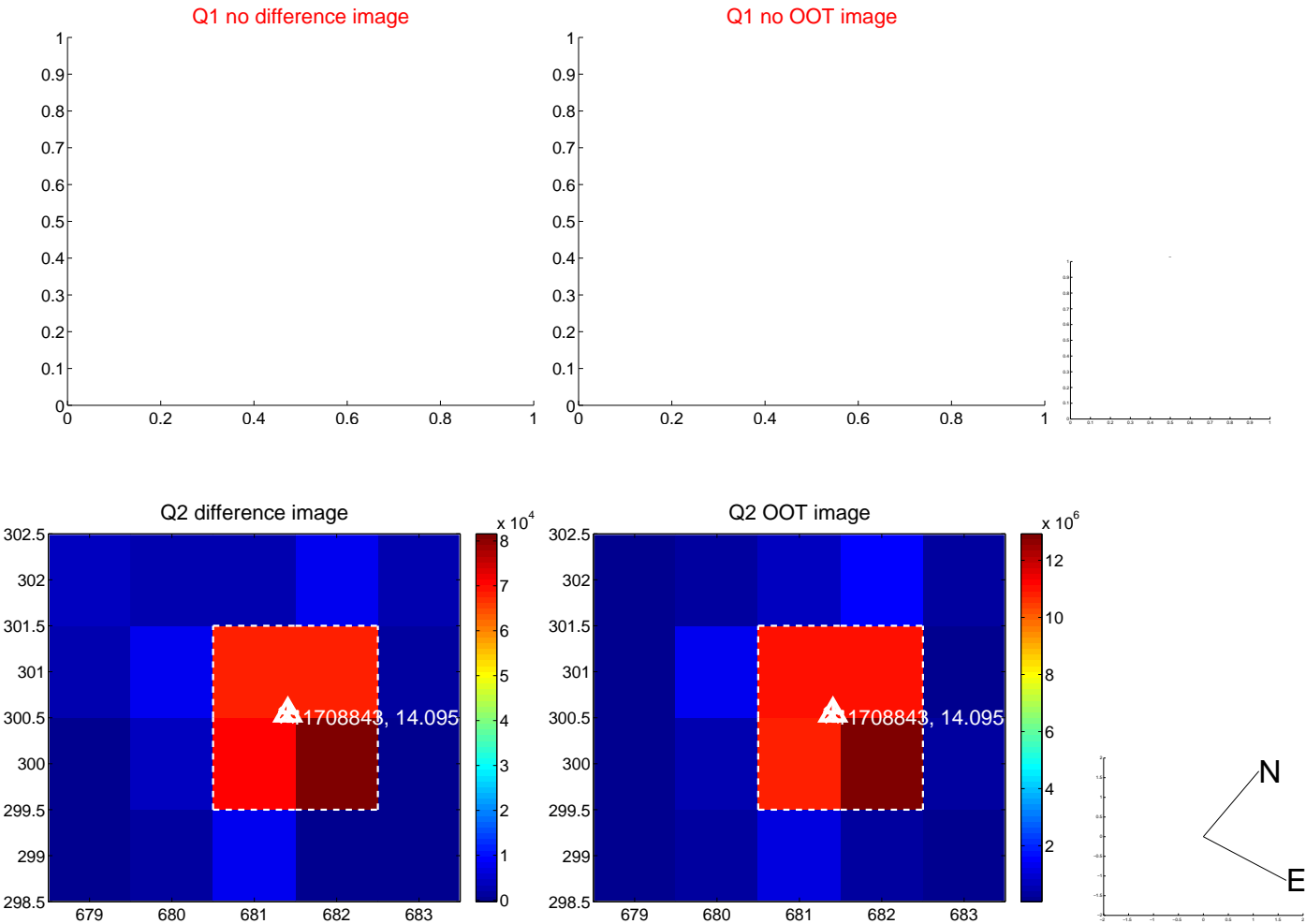


offset from photometric centroids

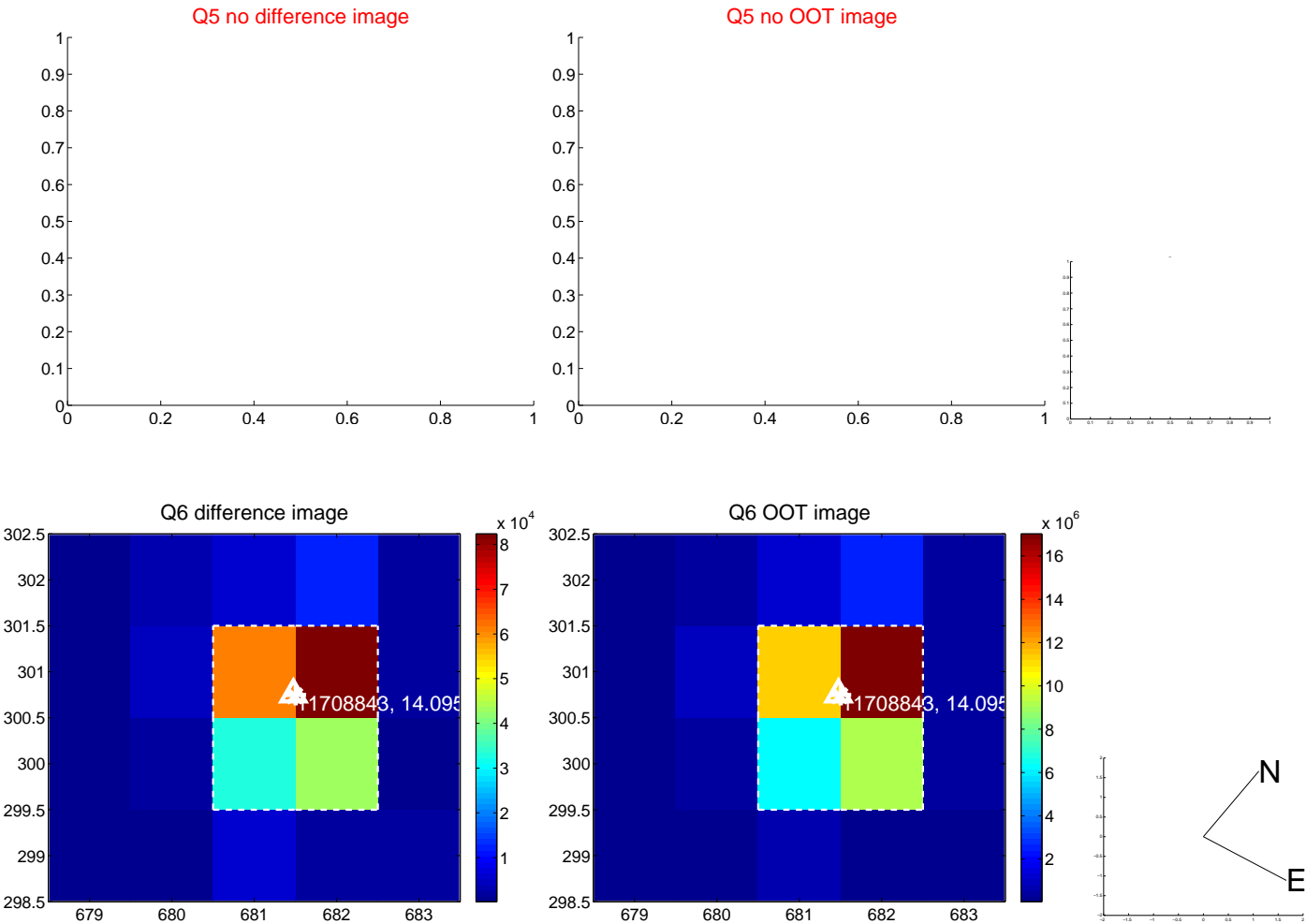


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

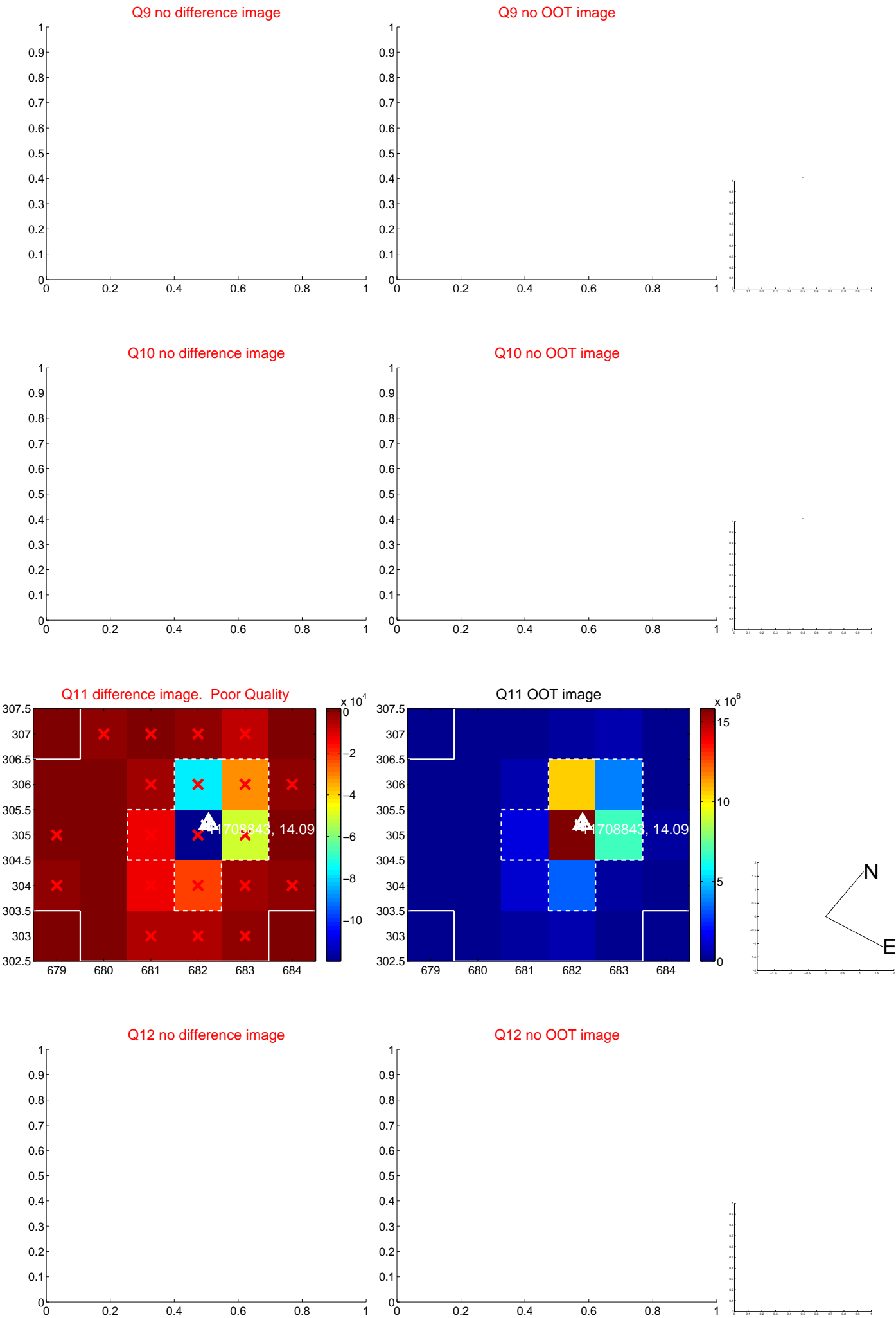
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



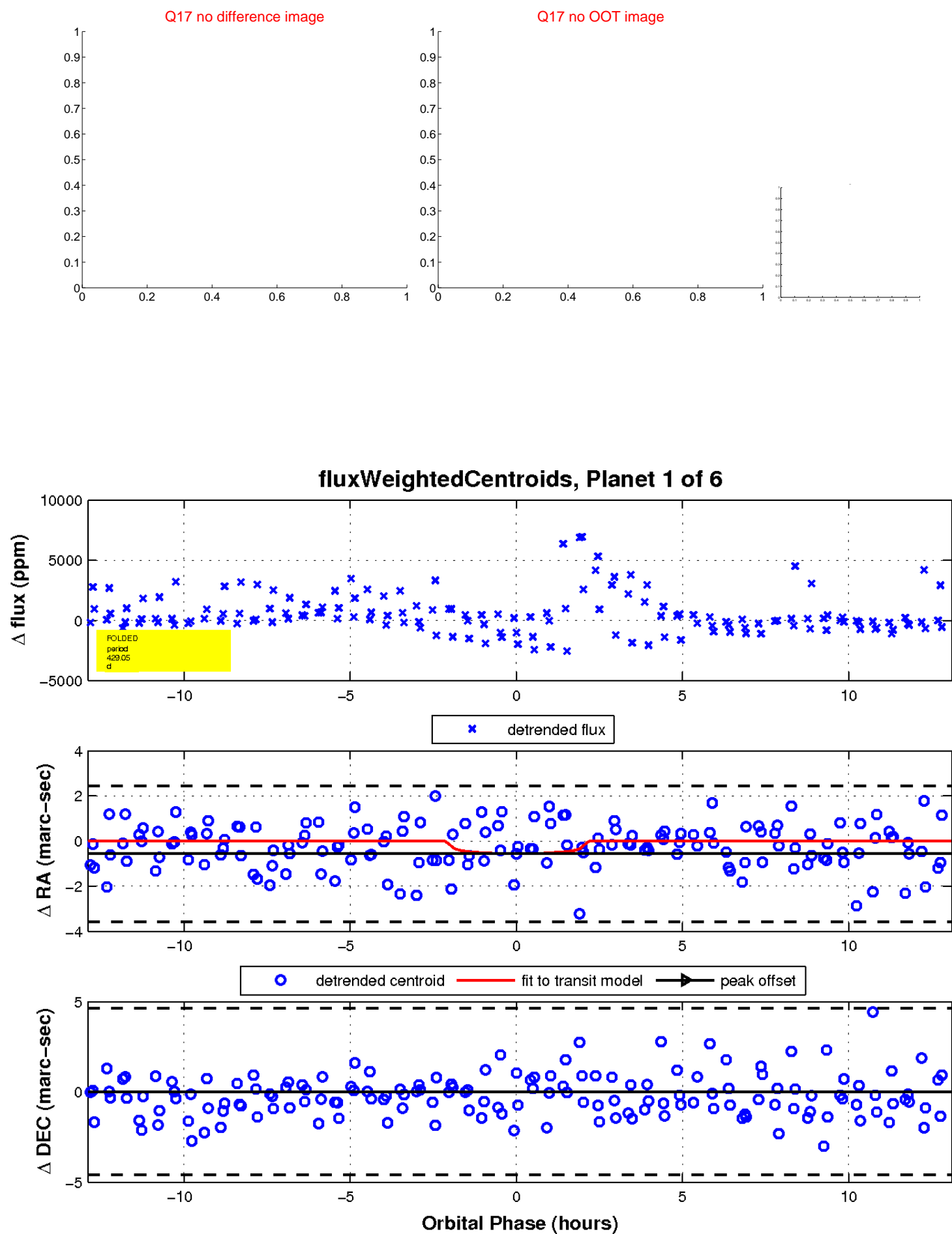
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

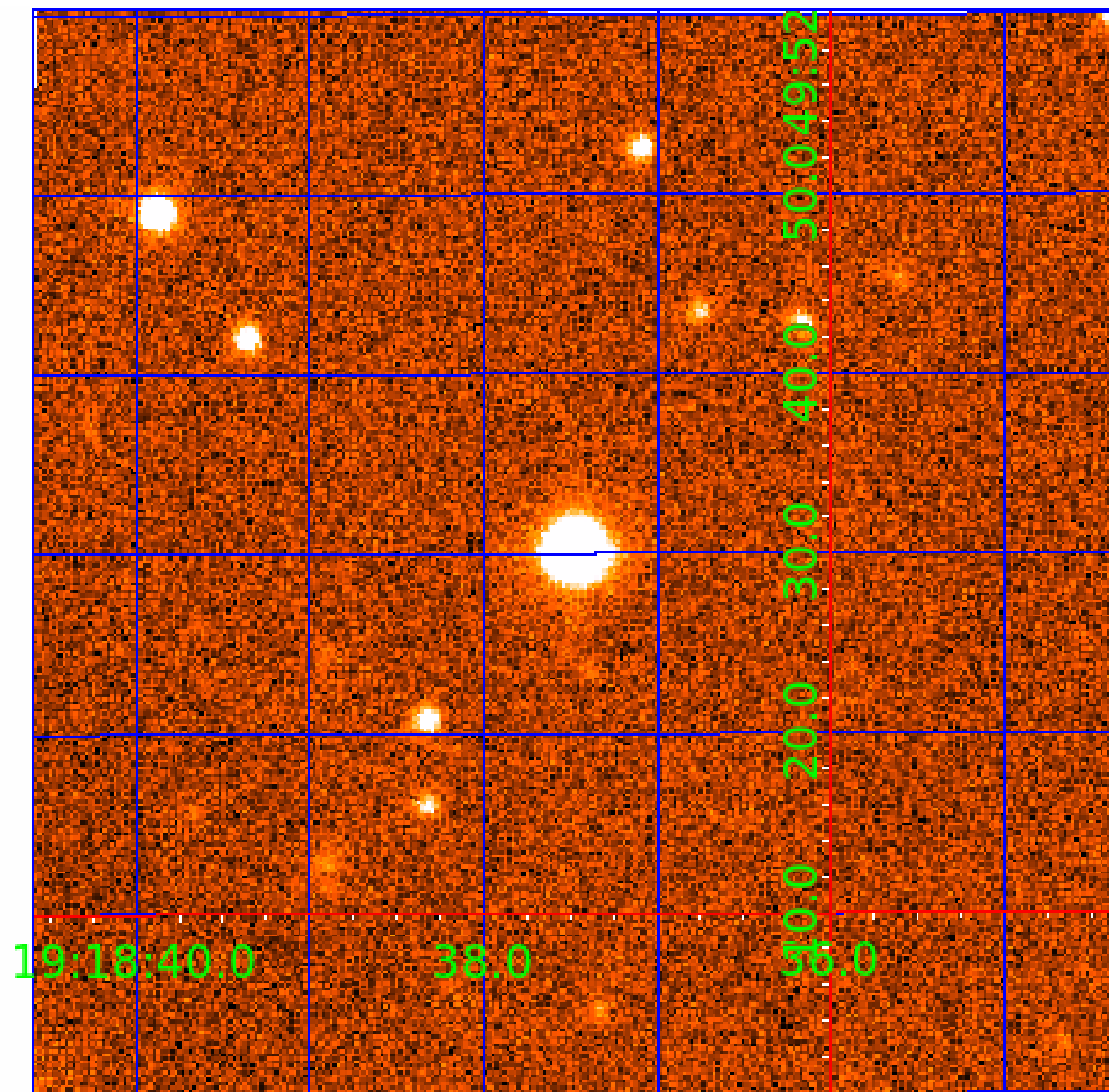


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011708843

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})
011708843-01	OBS	No	429.045786	192.833750	2367.9	4.387	17.0	9.3	0.73	5254	3.73	0.38
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708843-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
011708843-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011708843-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
011708843-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-06	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

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

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

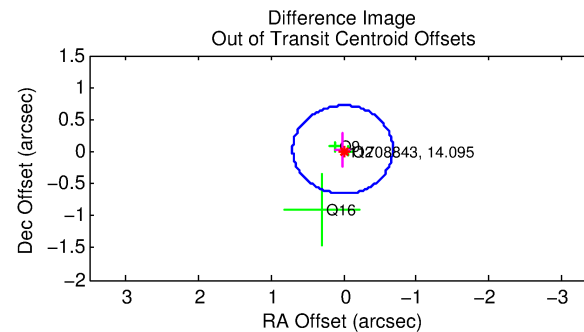
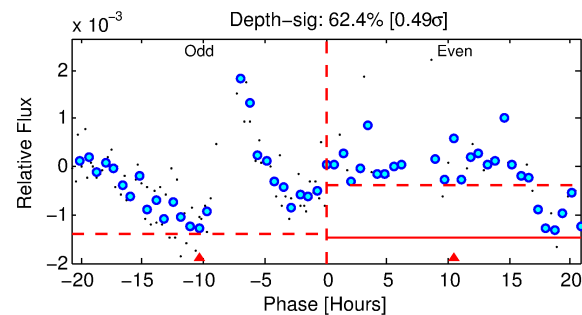
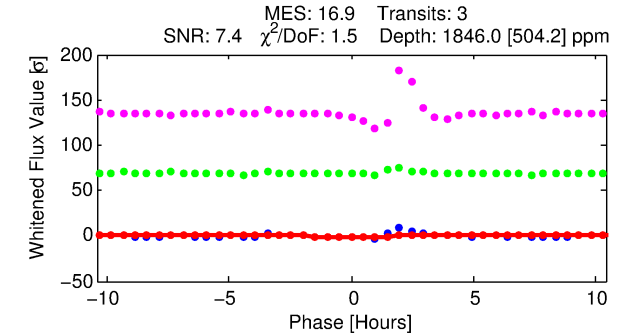
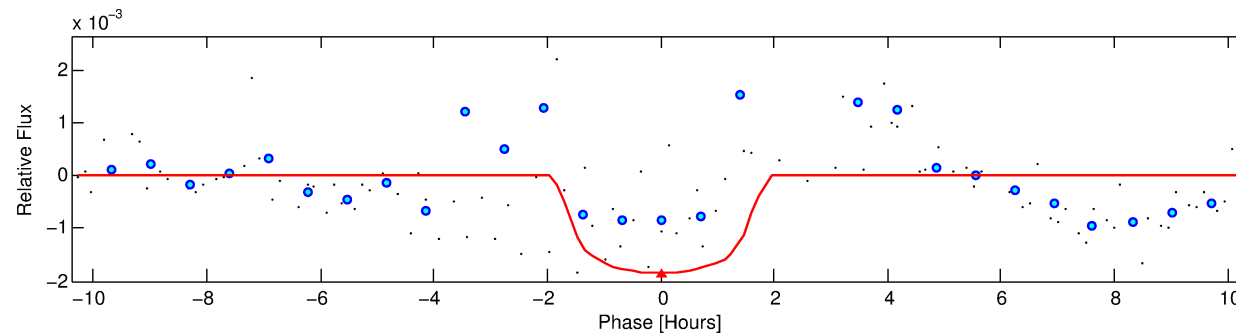
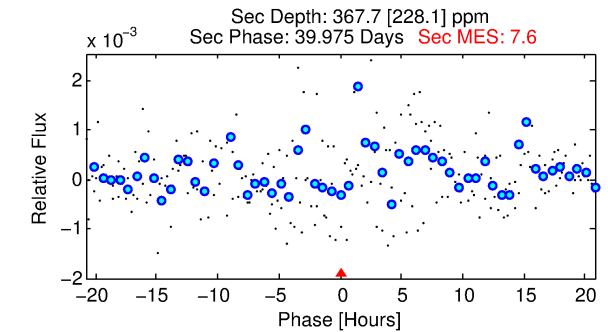
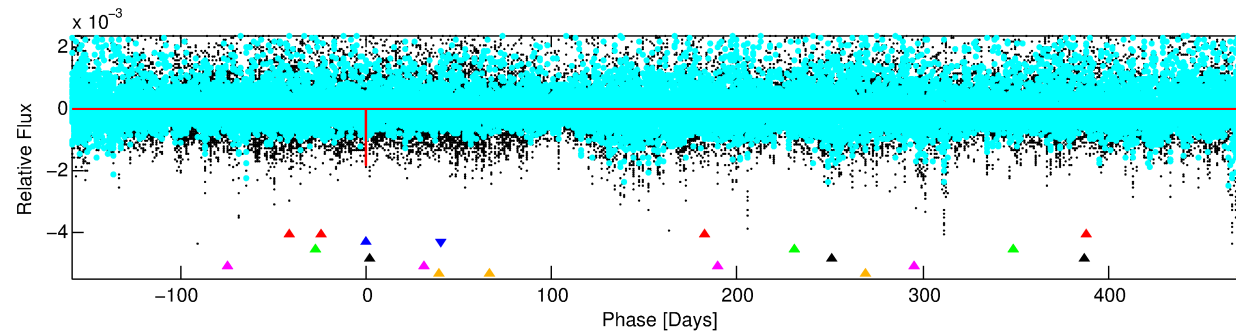
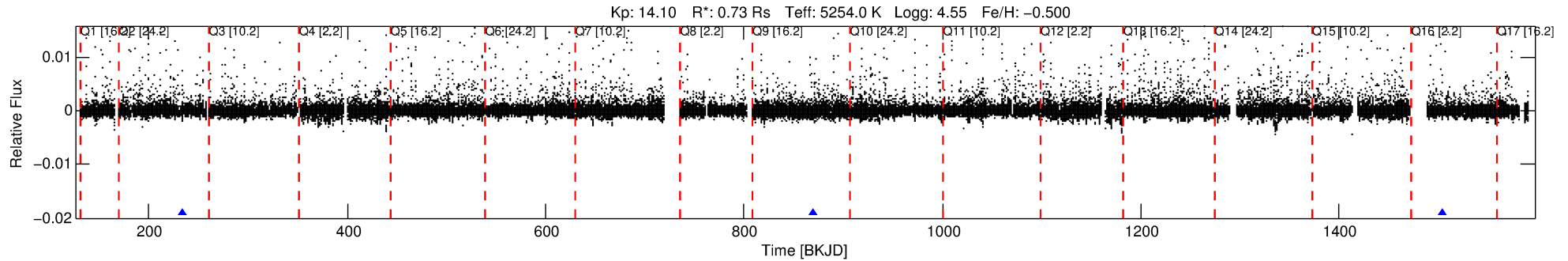
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708843-02

No Significant Match Found

DV One-Page Summary

KIC: 11708843 Candidate: 2 of 6 Period: 635.028 d



DV Fit Results:

Period = 635.02810 [0.00559] d
Epoch = 233.9469 [0.0074] BKJD
Rp/R* = 0.0387 [0.2105]
a/R* = 1454.69 [31820.13]
b = 0.01 [2032.73]
Seff = 0.23 [0.04]
Teff = 176 [9] K
Rp = 3.10 [16.89] Re
a = 1.2796 [0.1329] AU
Ag = 34425.79 [375451.41] [0.09σ]
Teffp = 3700 [10087] K [0.35σ]

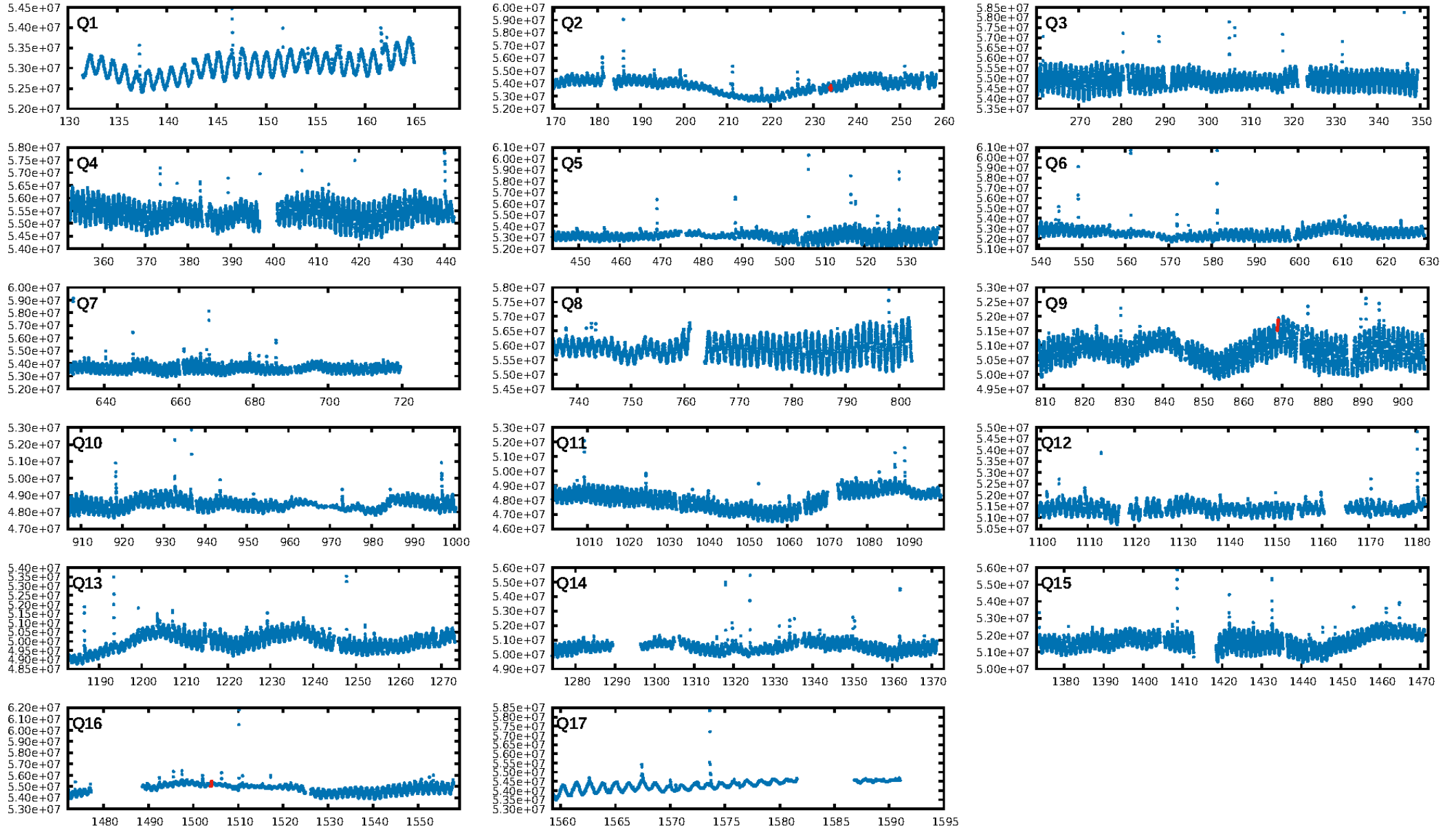
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [398.11σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 41.7%
ModelChiSquareGof-sig: 76.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.562
Centroid-sig: 94.8%
Centroid-so: 0.262 arcsec [0.62σ]
OotOffset-rm: 0.032 arcsec [0.14σ]
KicOffset-rm: 0.169 arcsec [0.73σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

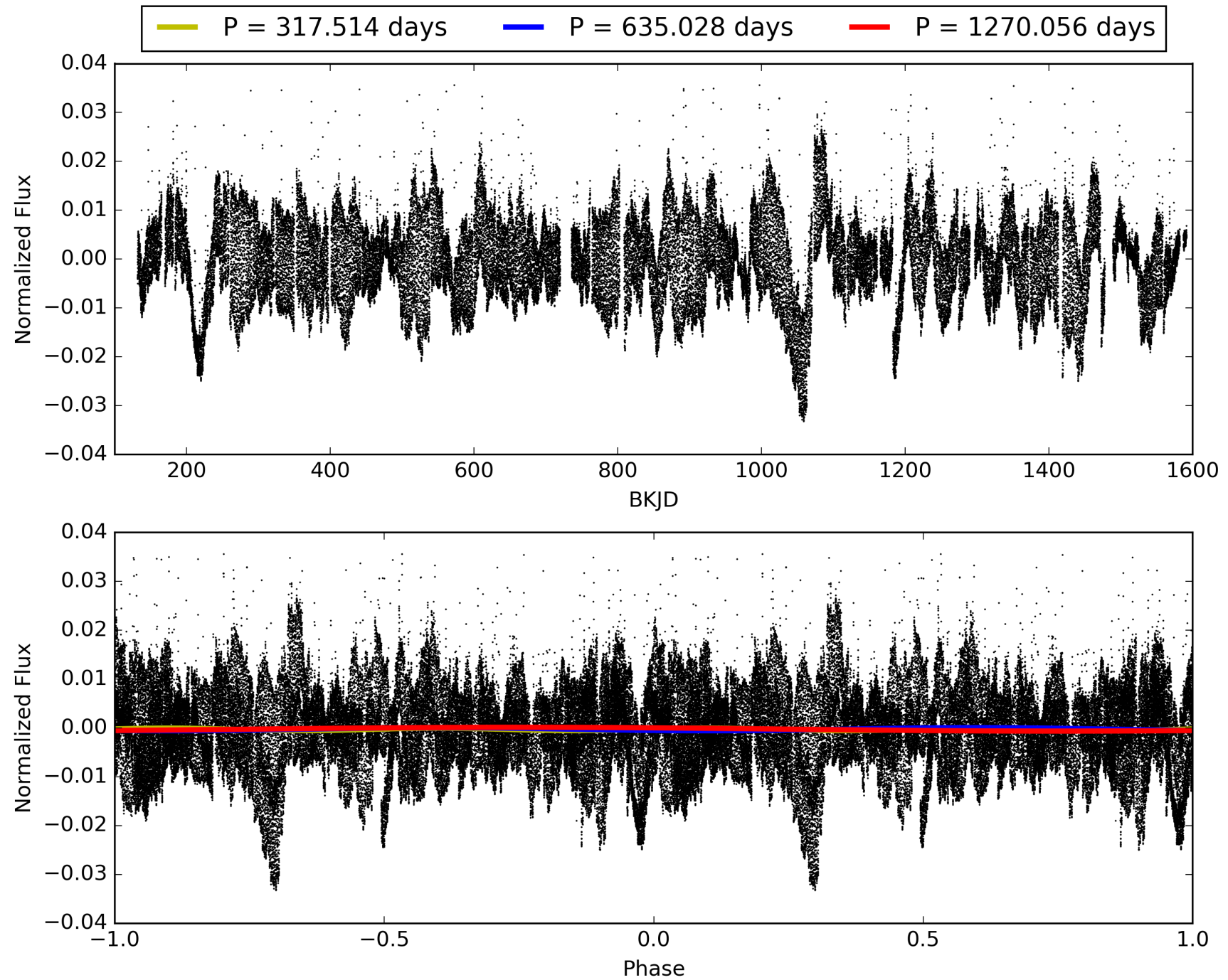
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:29:56 Z

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

TCE 011708843-02, PDC Light Curves

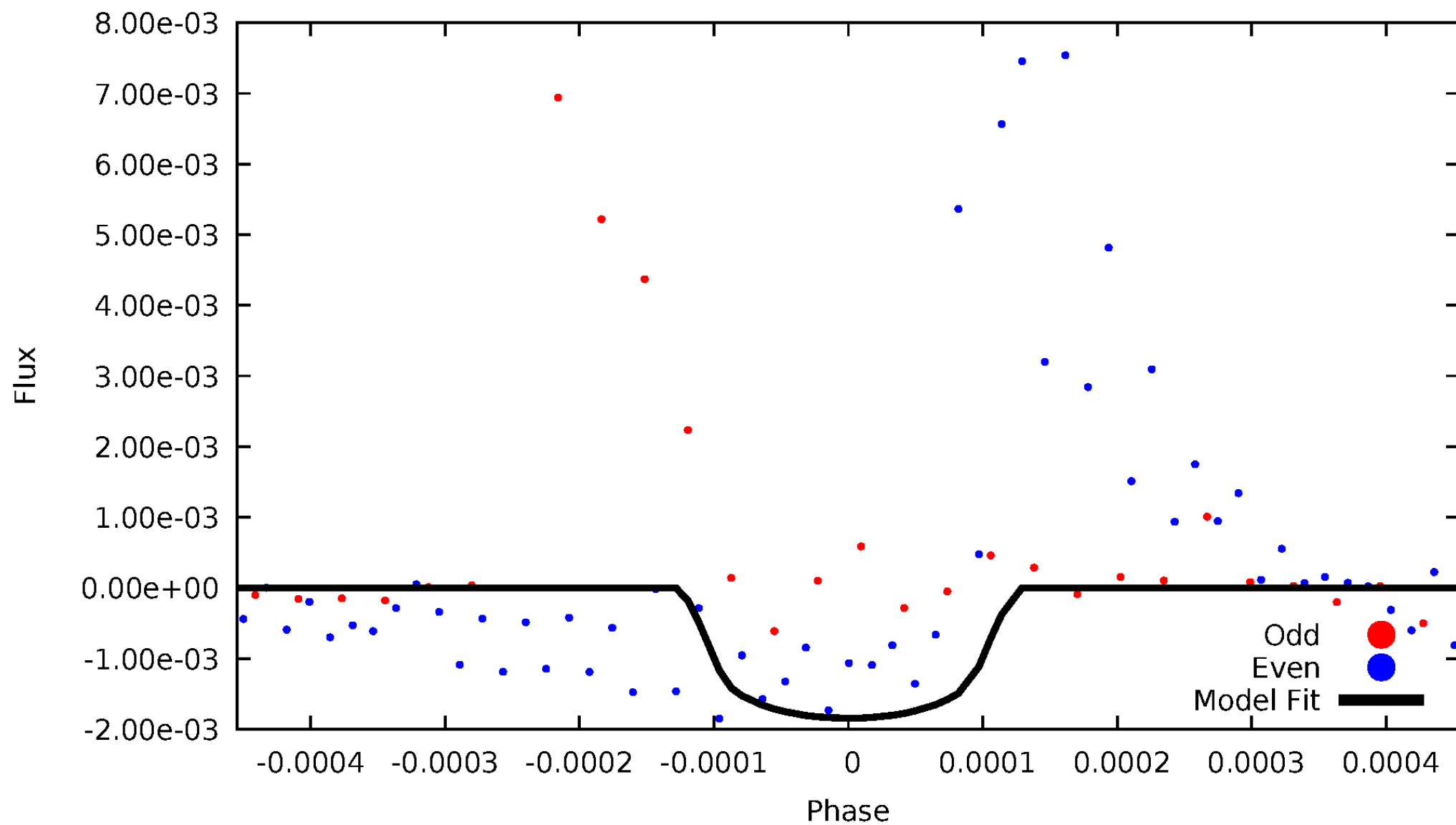


TCE 011708843-02



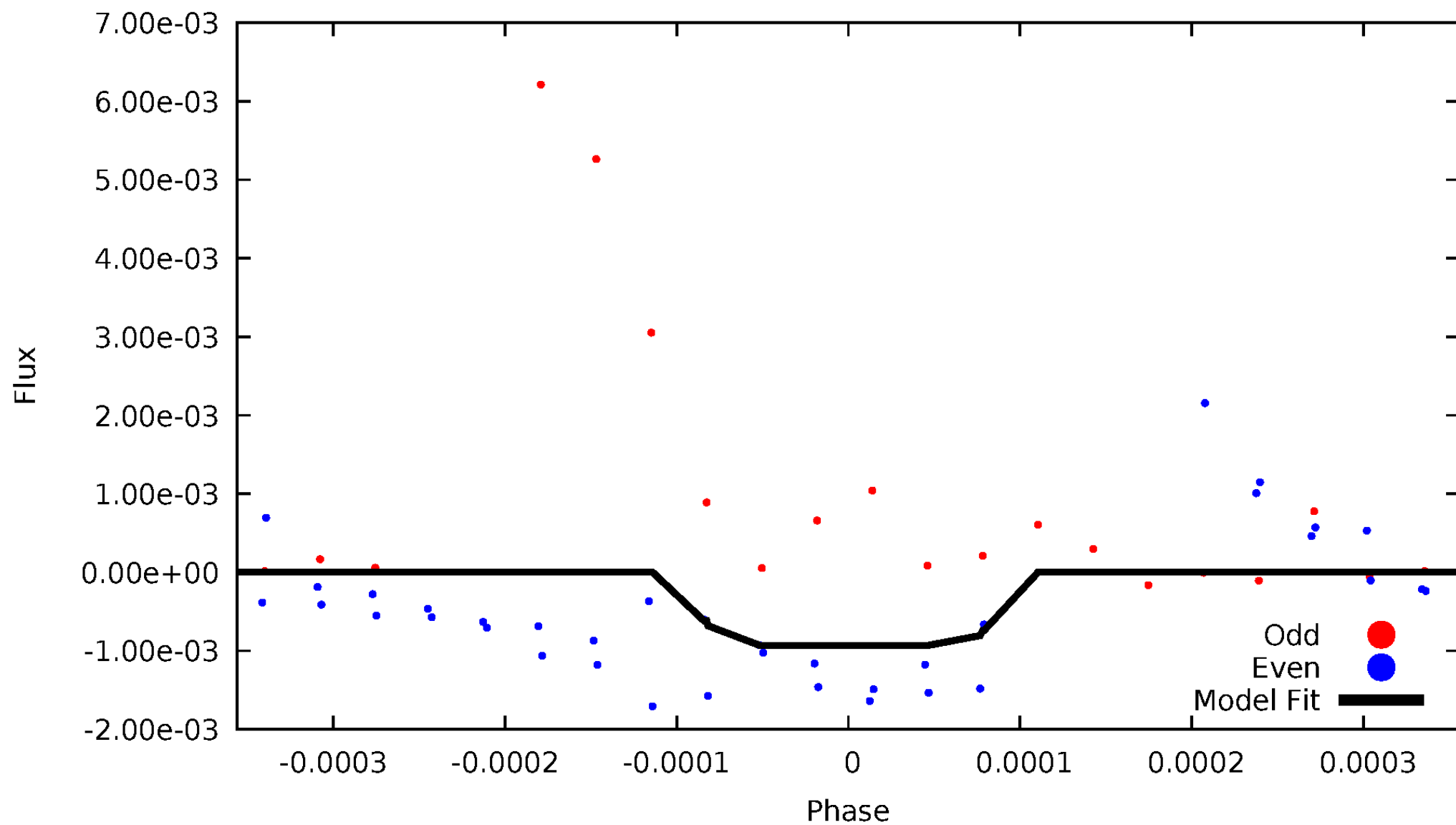
DV Odd/Even

TCE 011708843-02



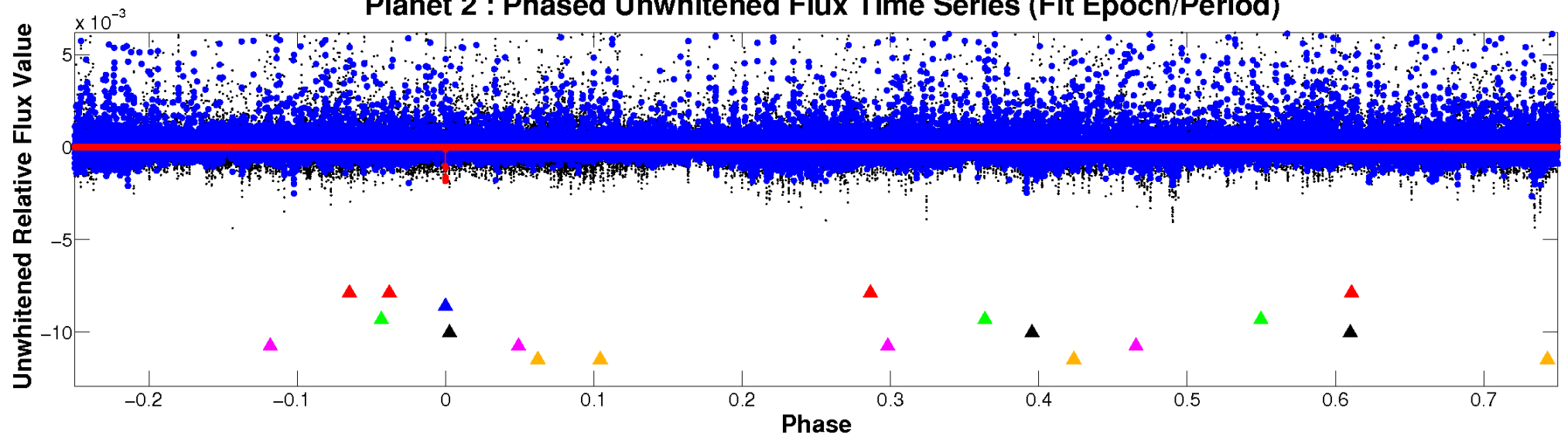
ALT Odd/Even

TCE 011708843-02

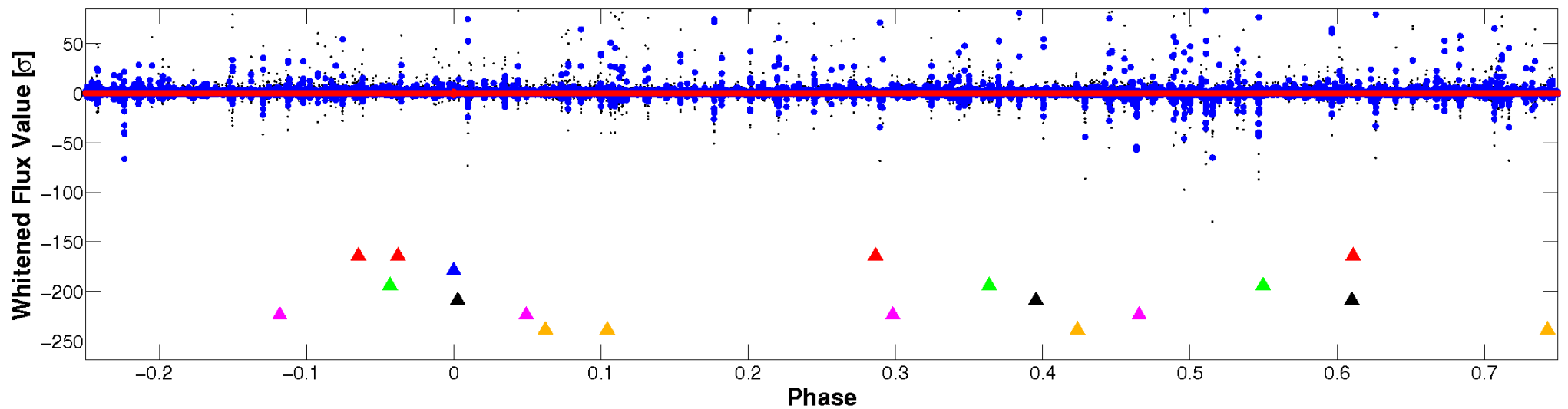


Non-Whitened Vs. Whitened Light Curve

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

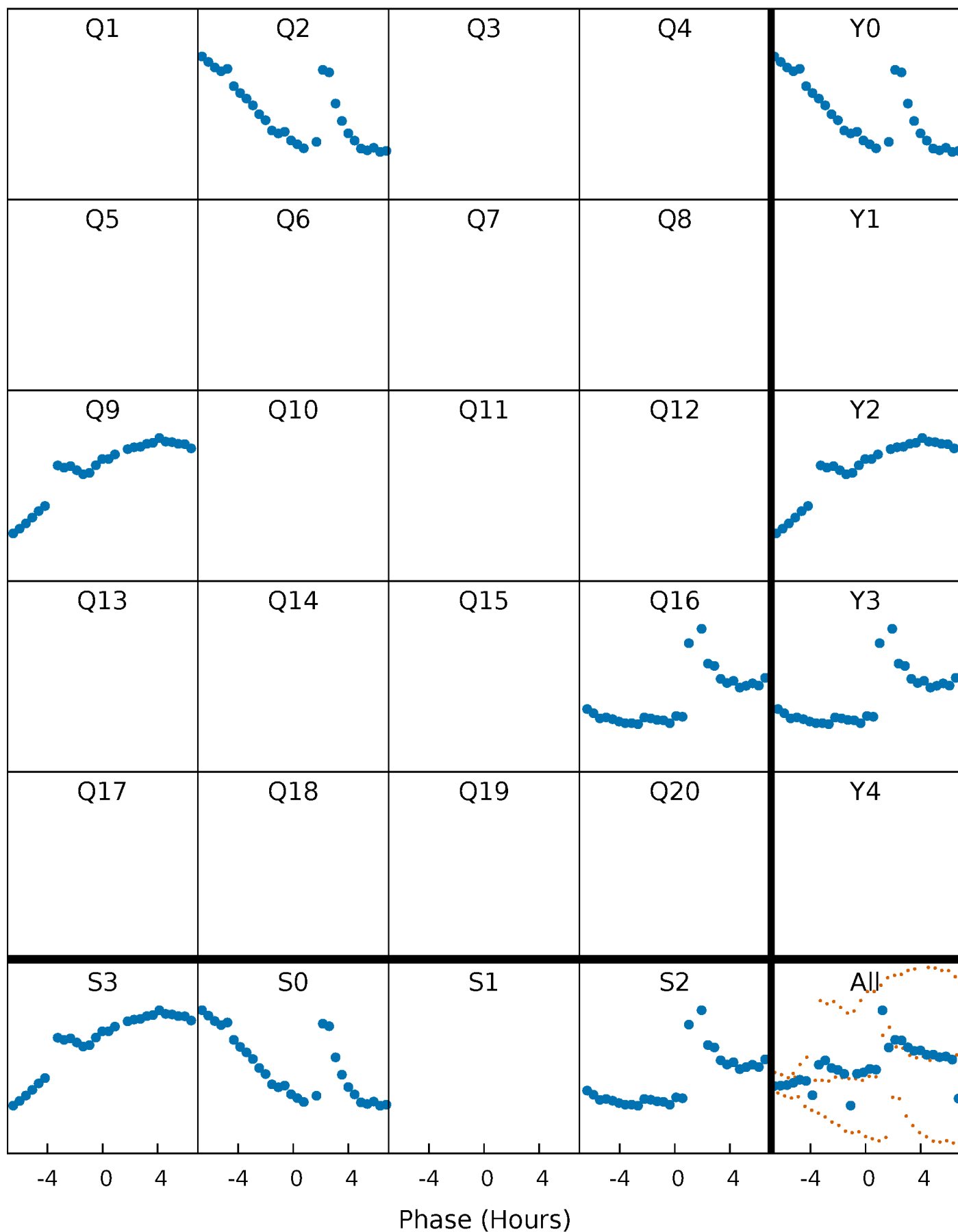


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



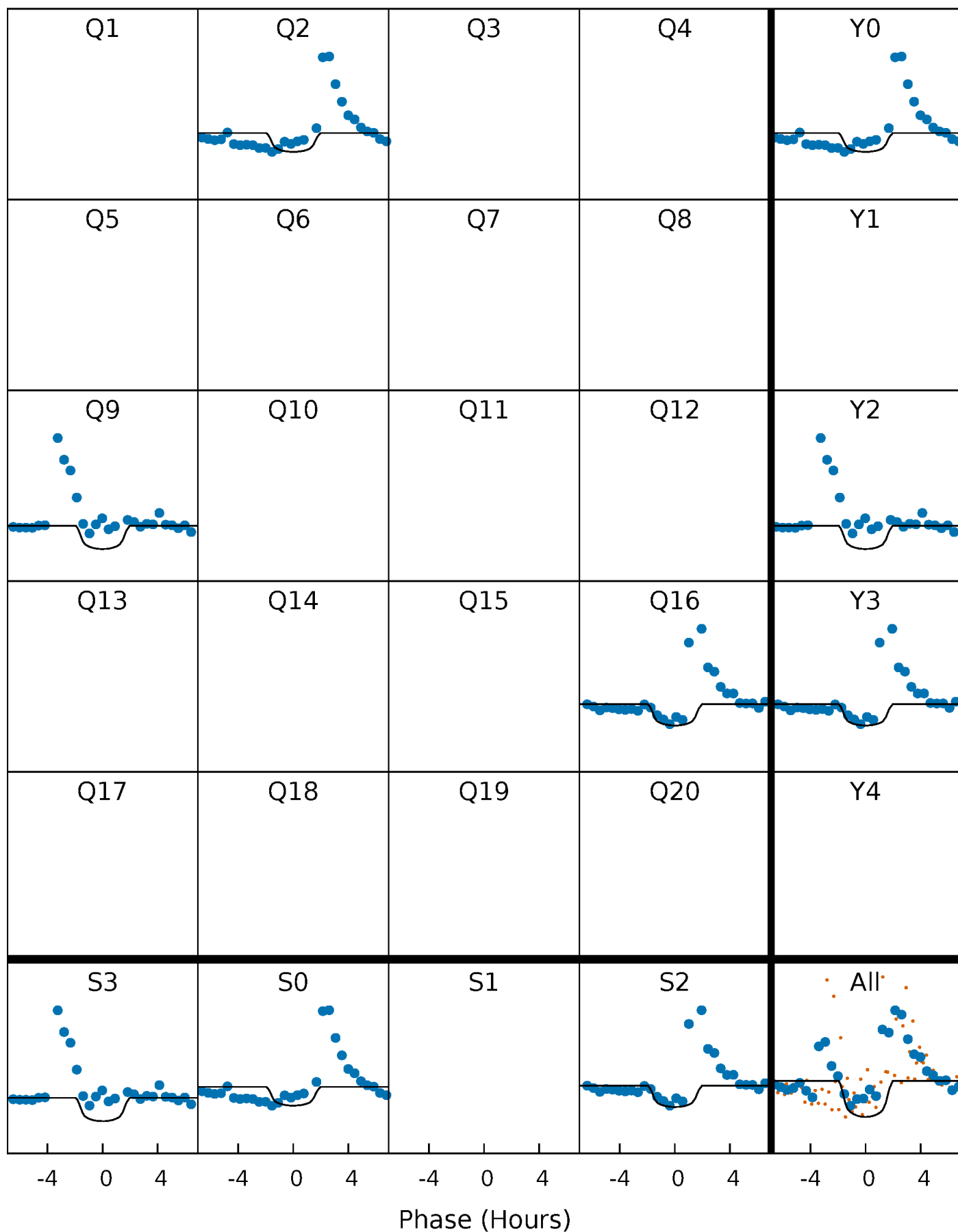
PDC Quarter-Phased Transit Curves

TCE 011708843-02 P=635.028100 Days $T_0=233.946933$ (BKJD)



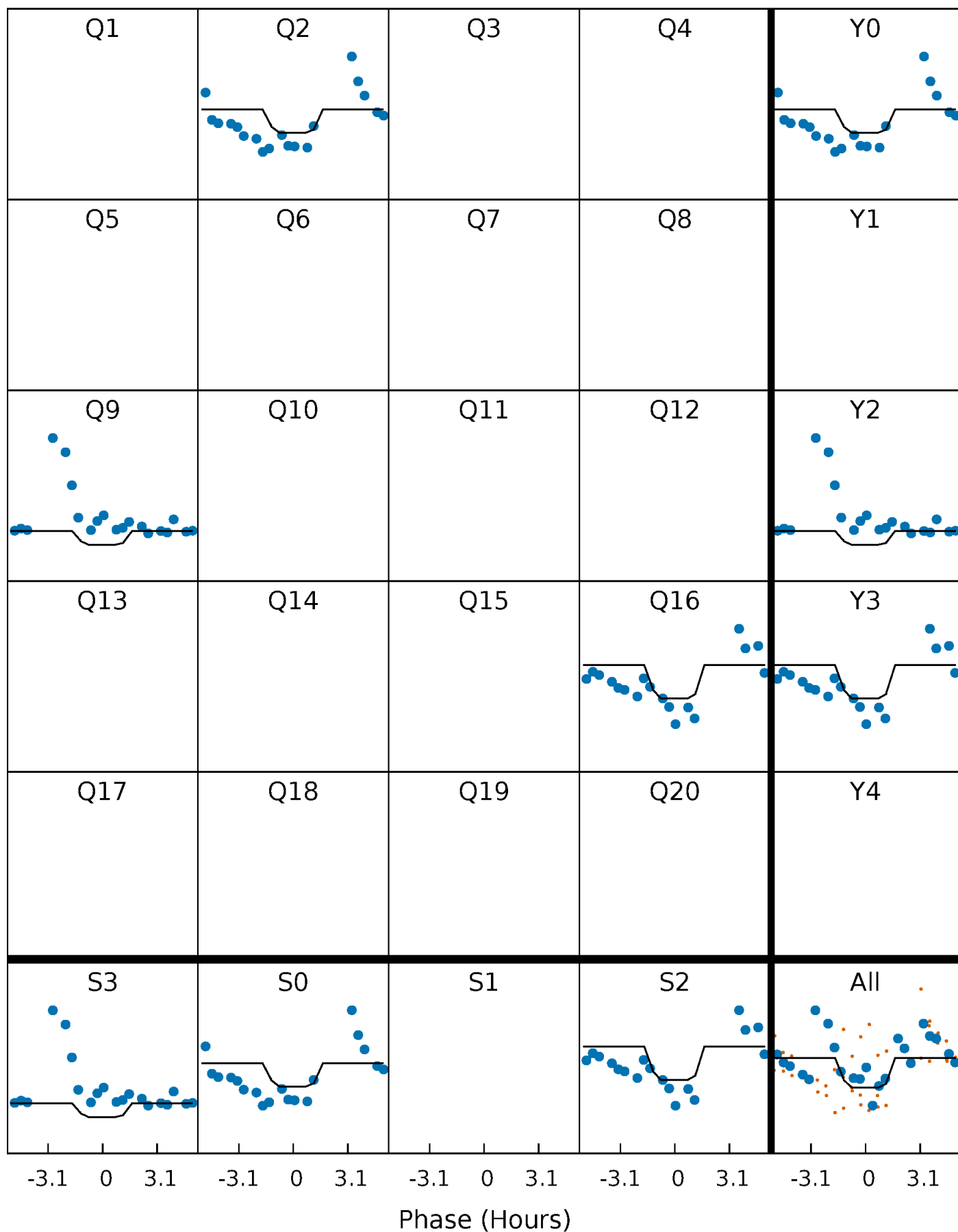
DV Quarter-Phased Transit Curves

TCE 011708843-02 P=635.028100 Days $T_0=233.946933$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

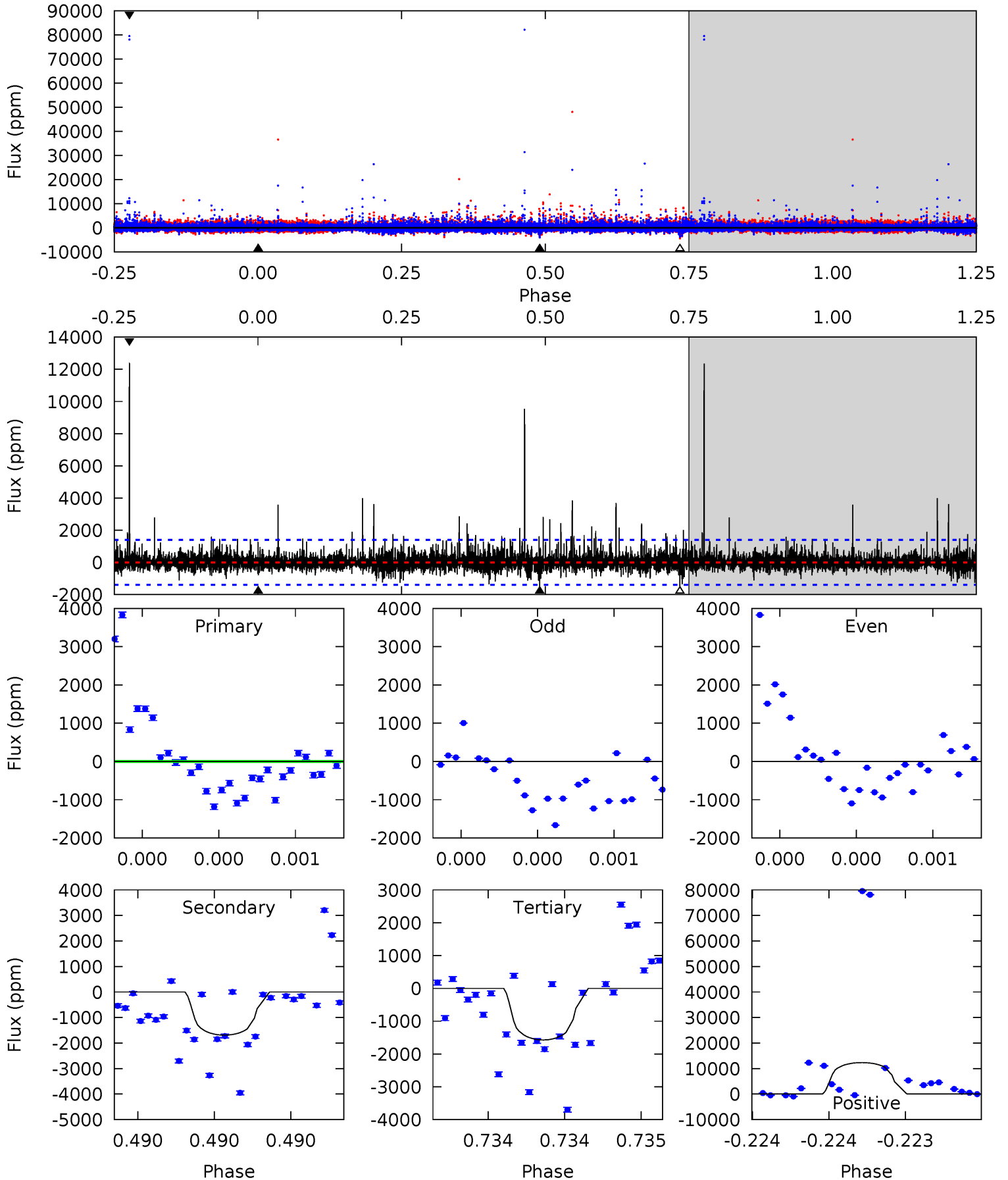
TCE 011708843-02 P=635.013744 Days $T_0=233.958375$ (BKJD)



DV Model-Shift Uniqueness Test

011708843-02, P = 635.028100 Days, E = 233.946933 Days

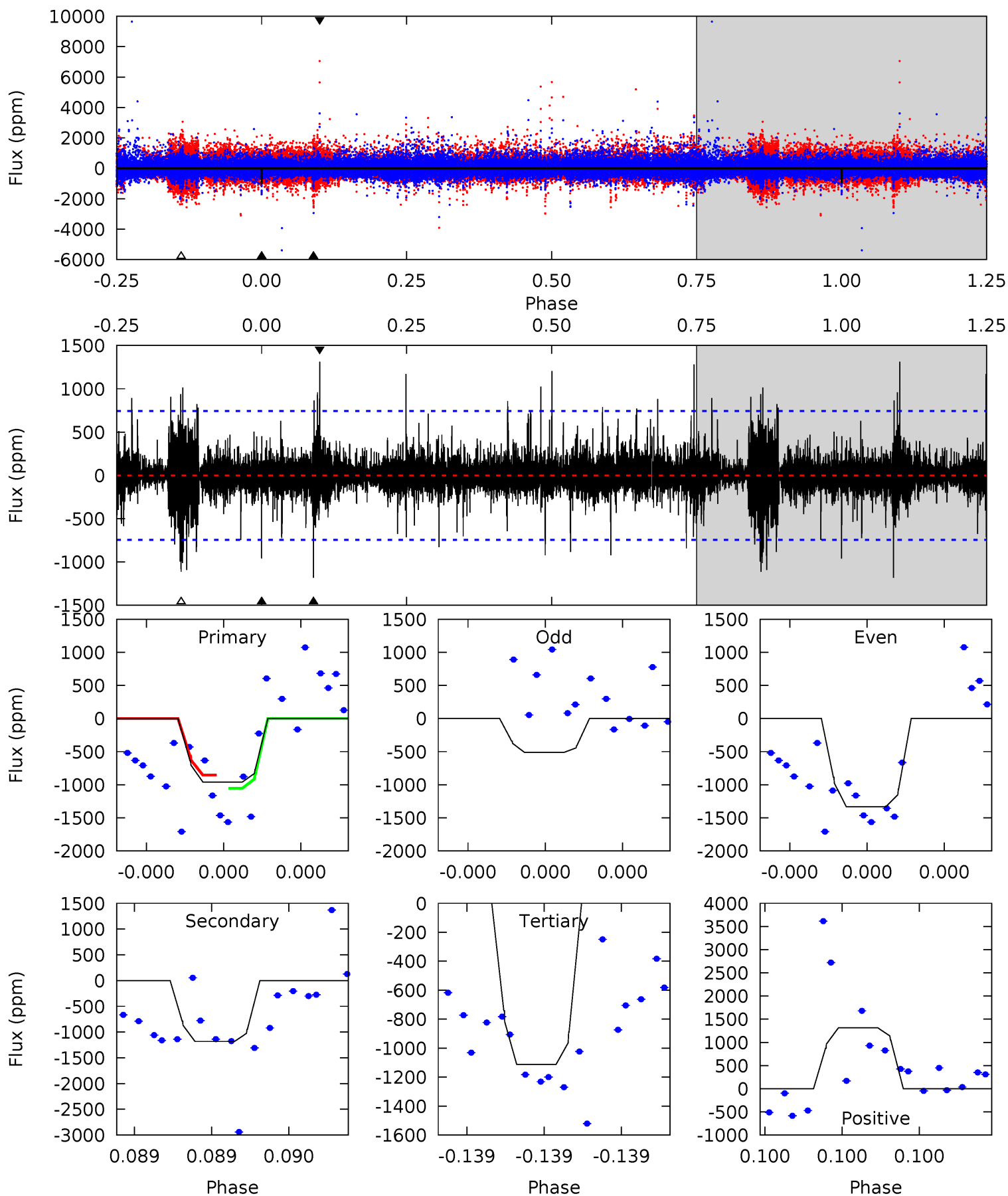
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.11	6.89	6.41	50.4	5.69	3.66	1.87	-3.30	-47.3	0.48	-43.5	1.13	3.58	0.88	1.01



Alt Model-Shift Uniqueness Test

011708843-02, P = 635.013744 Days, E = 233.958375 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.39	9.12	8.57	10.1	5.74	3.73	1.32	-1.18	-2.73	0.54	-1.00	2.65	0.56	0.53	0.76



Stellar Parameters For KIC 011708843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5254^{+157}_{-157}	$4.546^{+0.088}_{-0.072}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.087}_{-0.087}$	$0.693^{+0.099}_{-0.042}$	$2.458^{+0.925}_{-0.567}$
	+3%/-3%	+2%/-2%	+70%/-60%	+12%/-12%	+14%/-6%	+38%/-23%
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 011708843-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1690 ± 245	$13.20^{+11.97}_{-9.51}$	245^{+10}_{-11}	3181^{+1723}_{-516}	$8807^{+100098}_{-6442}$
Alt.	-1182 ± 130	$11.79^{+13.46}_{-8.24}$	245^{+11}_{-10}	3156^{+1618}_{-596}	8067^{+79230}_{-6379}

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 $A_{obs} \gg 1.0$

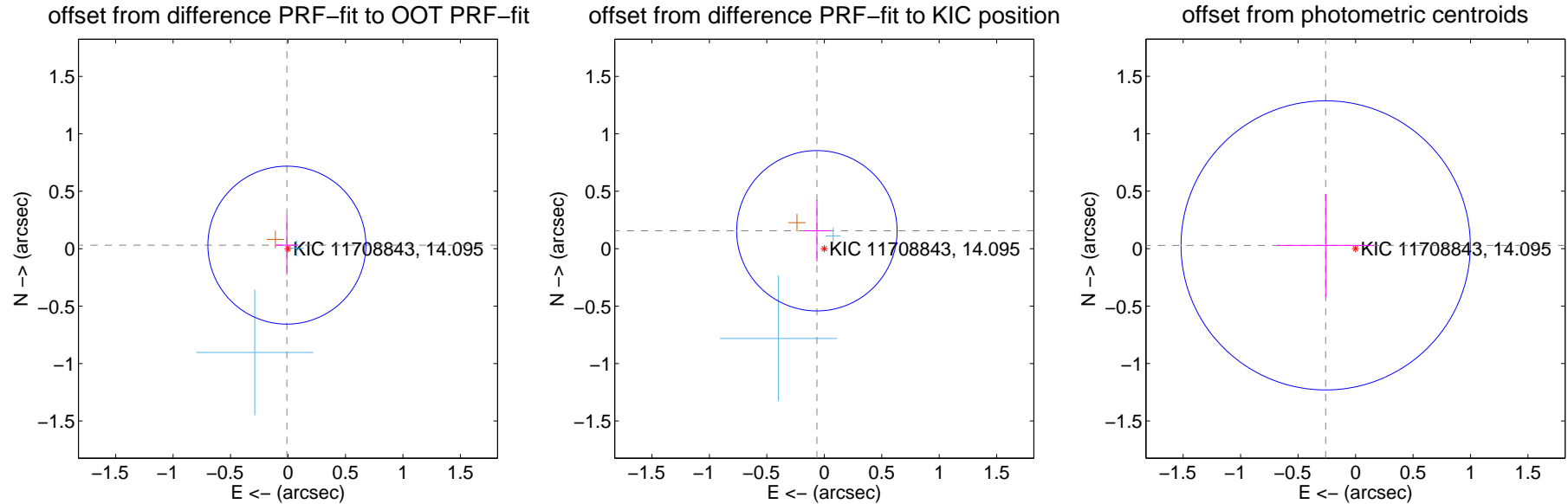
DV Centroid Data

Supplemental centroid analysis for 011708843-02. Kepler magnitude: 14.10. Transit SNR 7.43

There are 2 quarters with good PRF difference image offsets

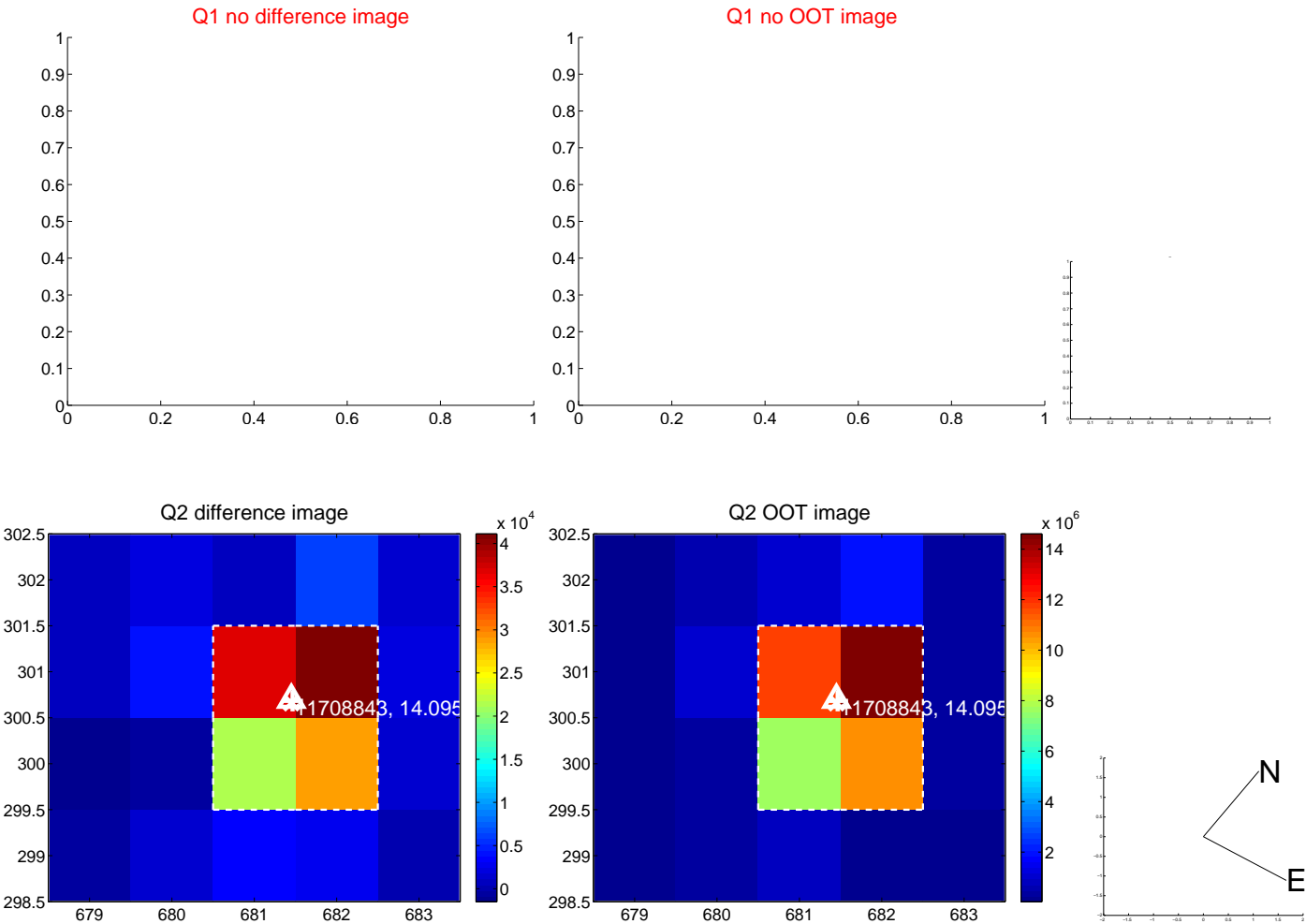
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.032 ± 0.229	0.14	0.010 ± 0.100	0.031 ± 0.258
PRF-fit source offset from KIC position	0.169 ± 0.233	0.73	0.064 ± 0.111	0.156 ± 0.268
photometric centroid source offset	0.26 ± 0.42	0.62	0.26 ± 0.42	0.03 ± 0.45



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.

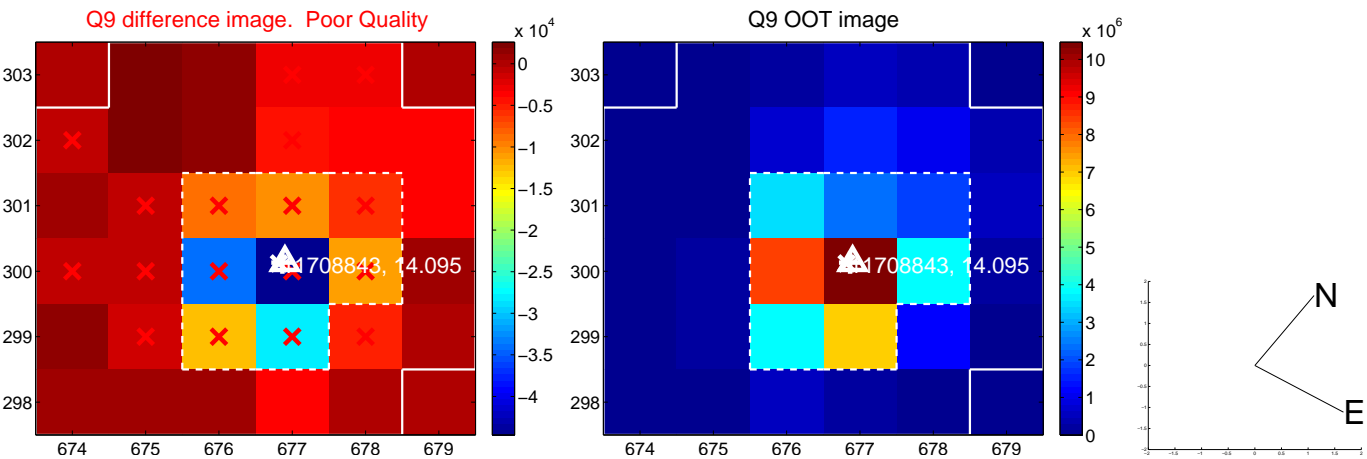
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



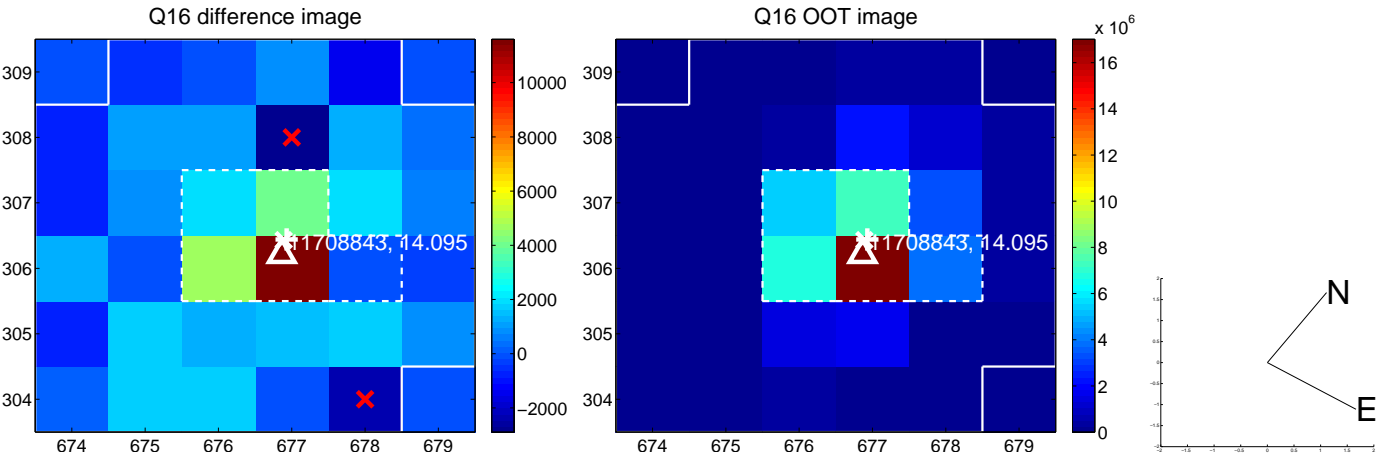
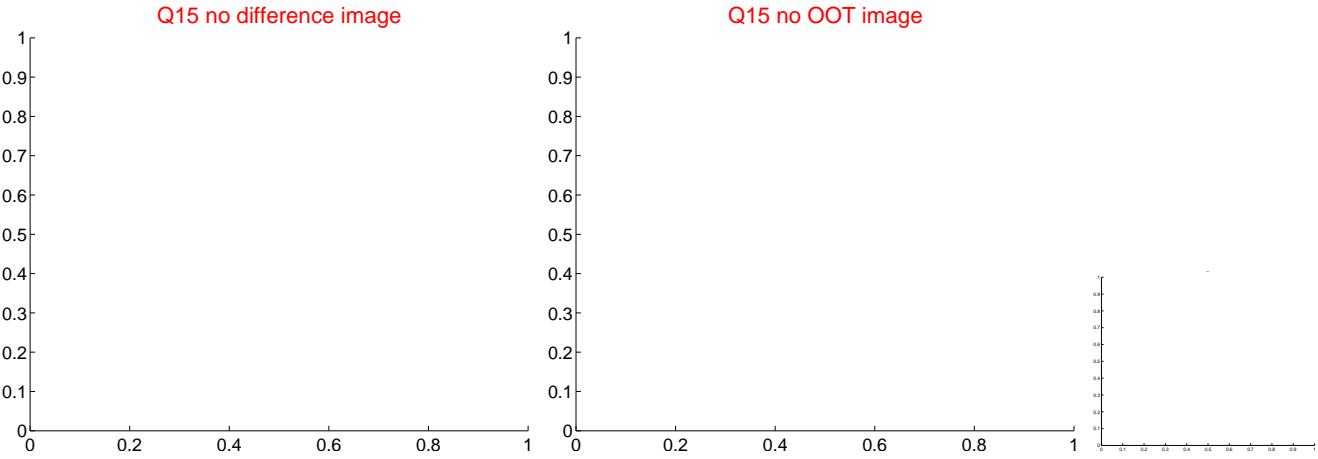
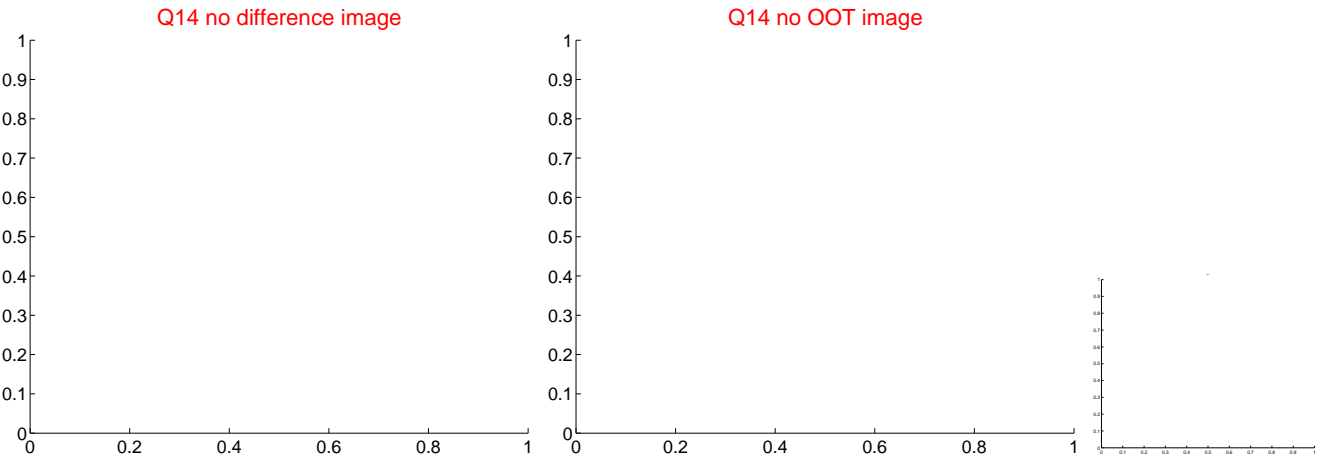
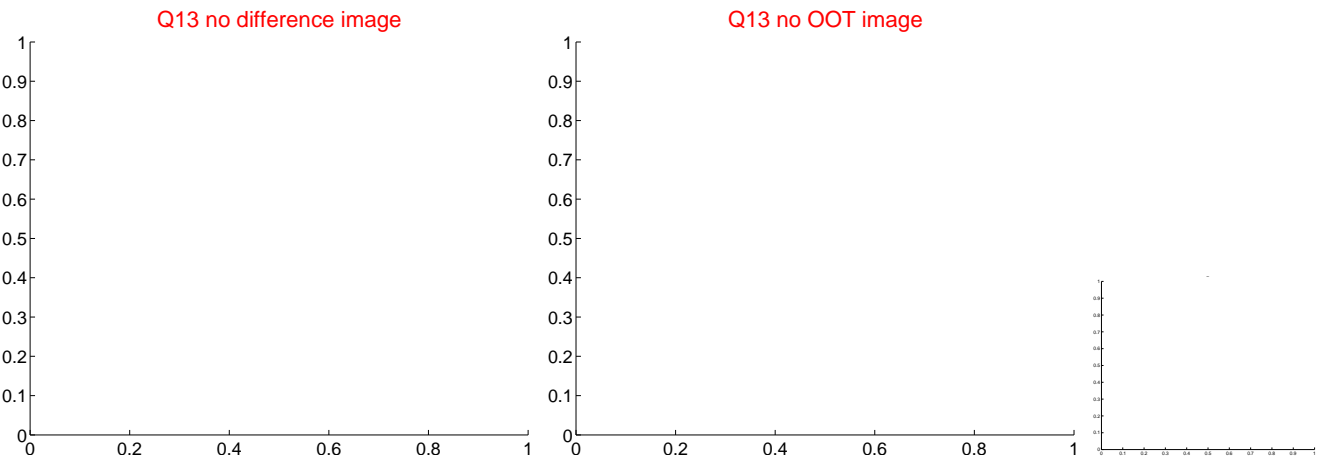
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



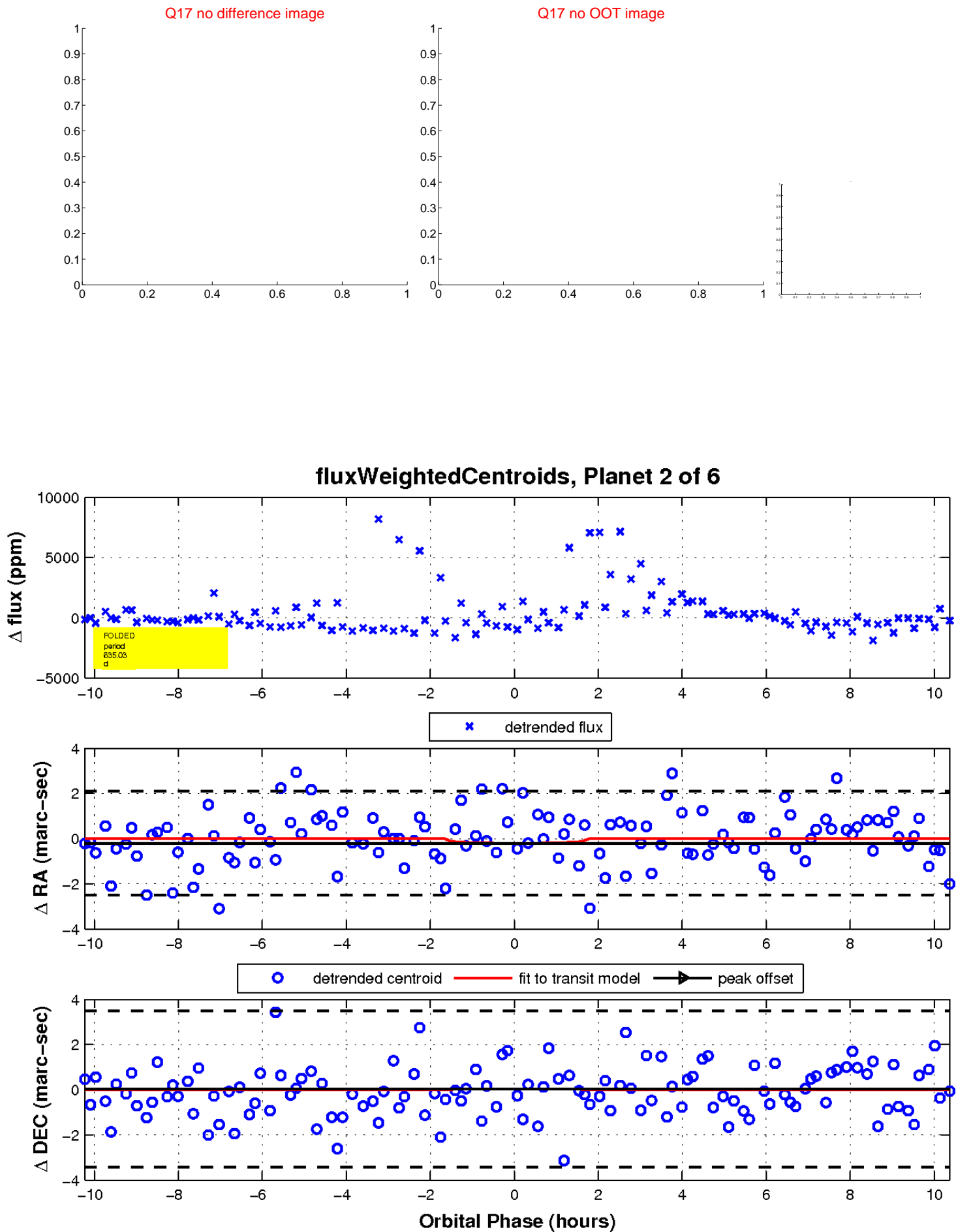
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

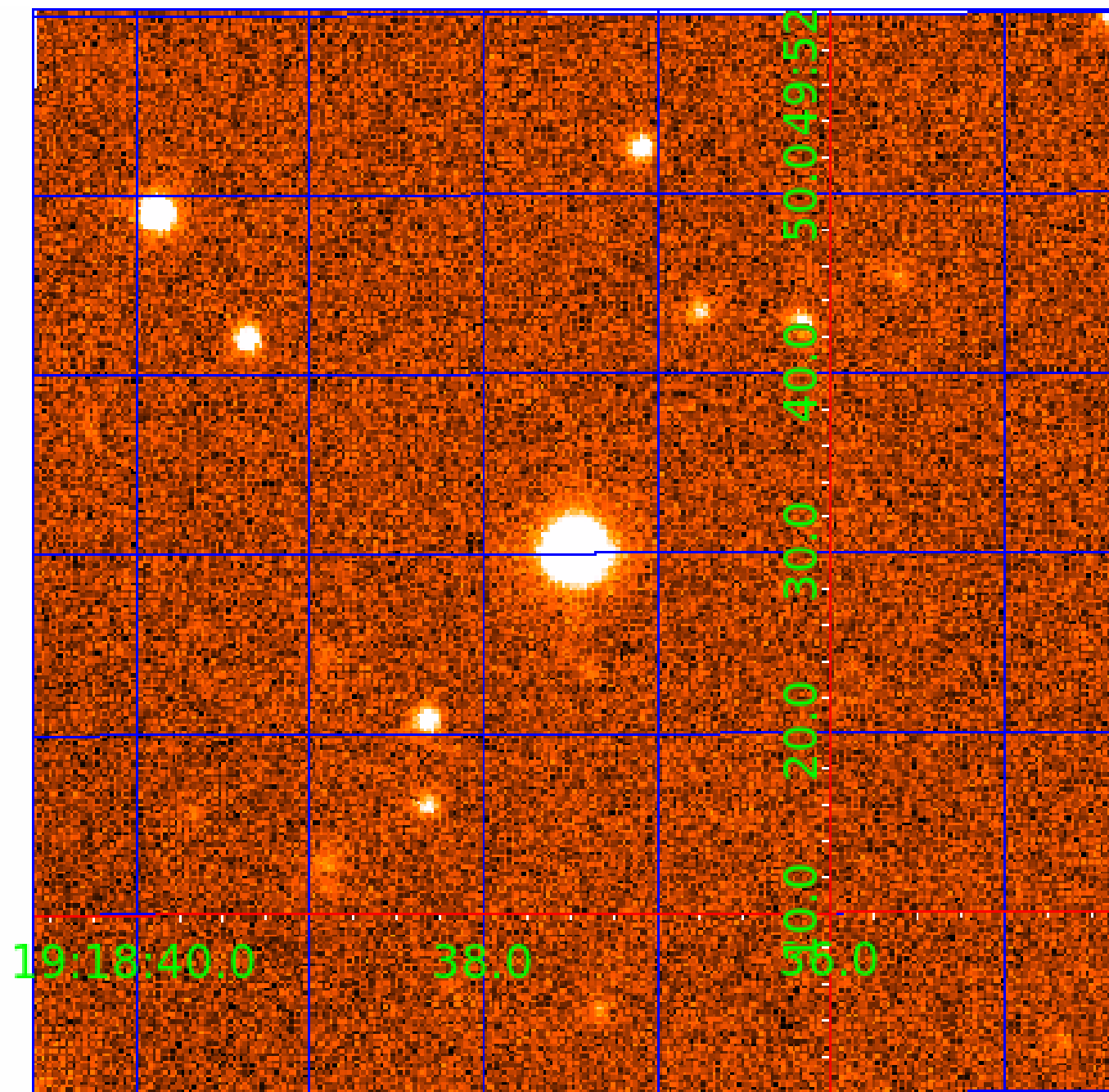


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011708843

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})
011708843-01	OBS	No	429.045786	192.833750	2367.9	4.387	17.0	9.3	0.73	5254	3.73	0.38
011708843-02	OBS	No	635.028100	233.946933	1846.0	3.464	16.9	7.4	0.73	5254	3.10	0.23
011708843-03	OBS	No	376.596986	464.913875	1741.1	2.631	19.0	6.3	0.73	5254	3.16	0.45
011708843-04	OBS	No	385.645675	485.064526	3261.7	2.948	14.8	11.3	0.73	5254	4.13	0.44
011708843-05	OBS	No	370.653495	423.311350	1895.7	4.723	18.5	6.3	0.73	5254	3.28	0.46
011708843-06	OBS	No	432.256968	273.494588	2344.1	11.723	20.6	6.6	0.73	5254	3.92	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708843-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
011708843-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011708843-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
011708843-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-06	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

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

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

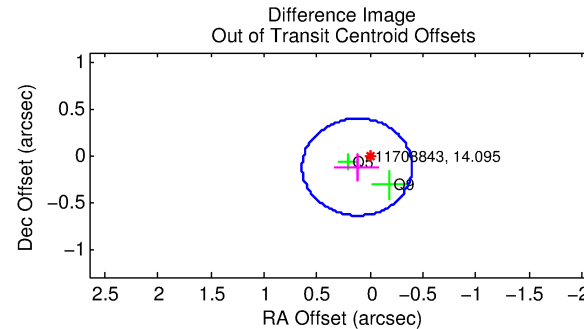
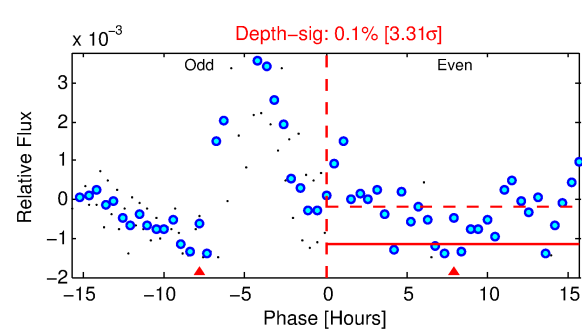
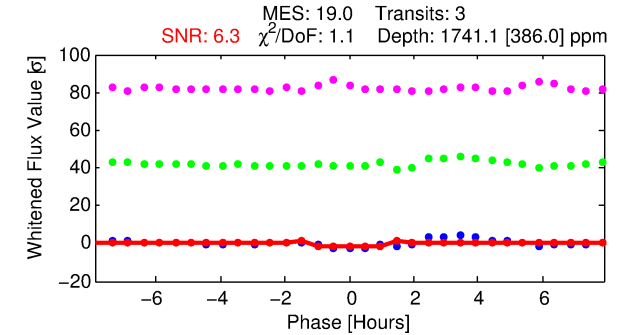
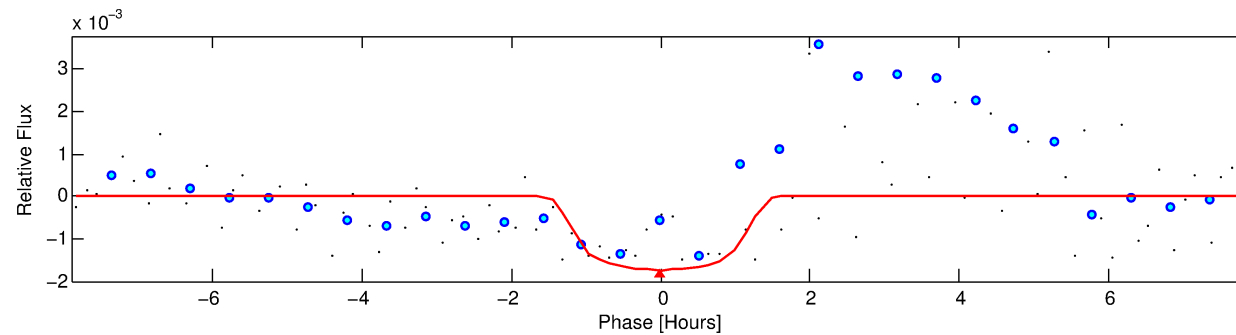
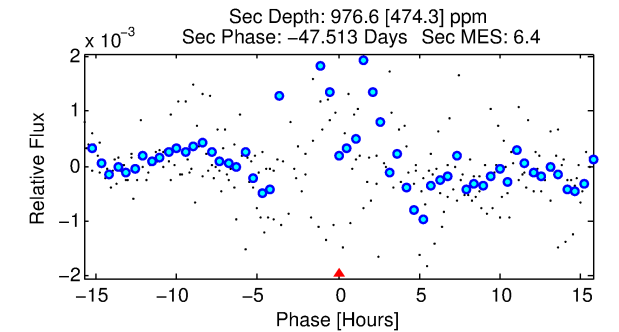
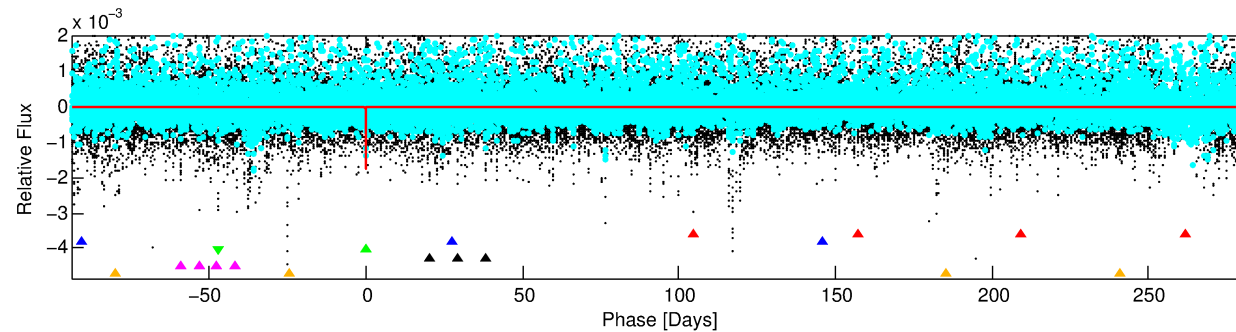
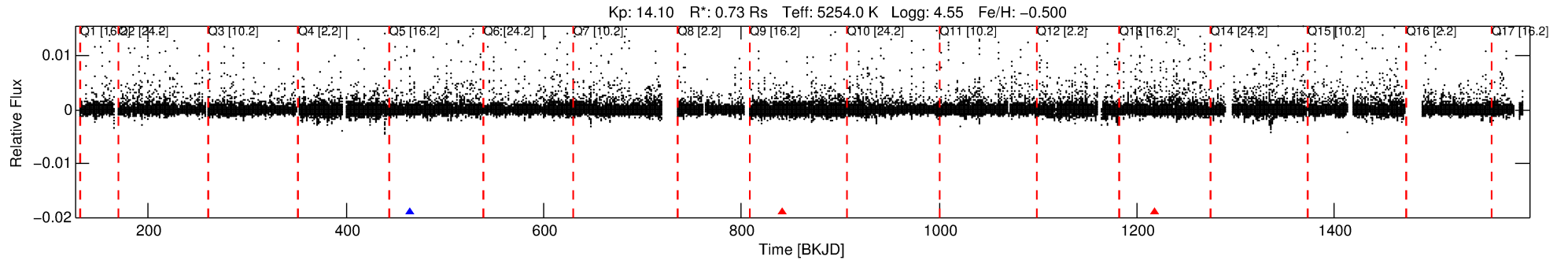
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708843-03

No Significant Match Found

DV One-Page Summary

KIC: 11708843 Candidate: 3 of 6 Period: 376.597 d



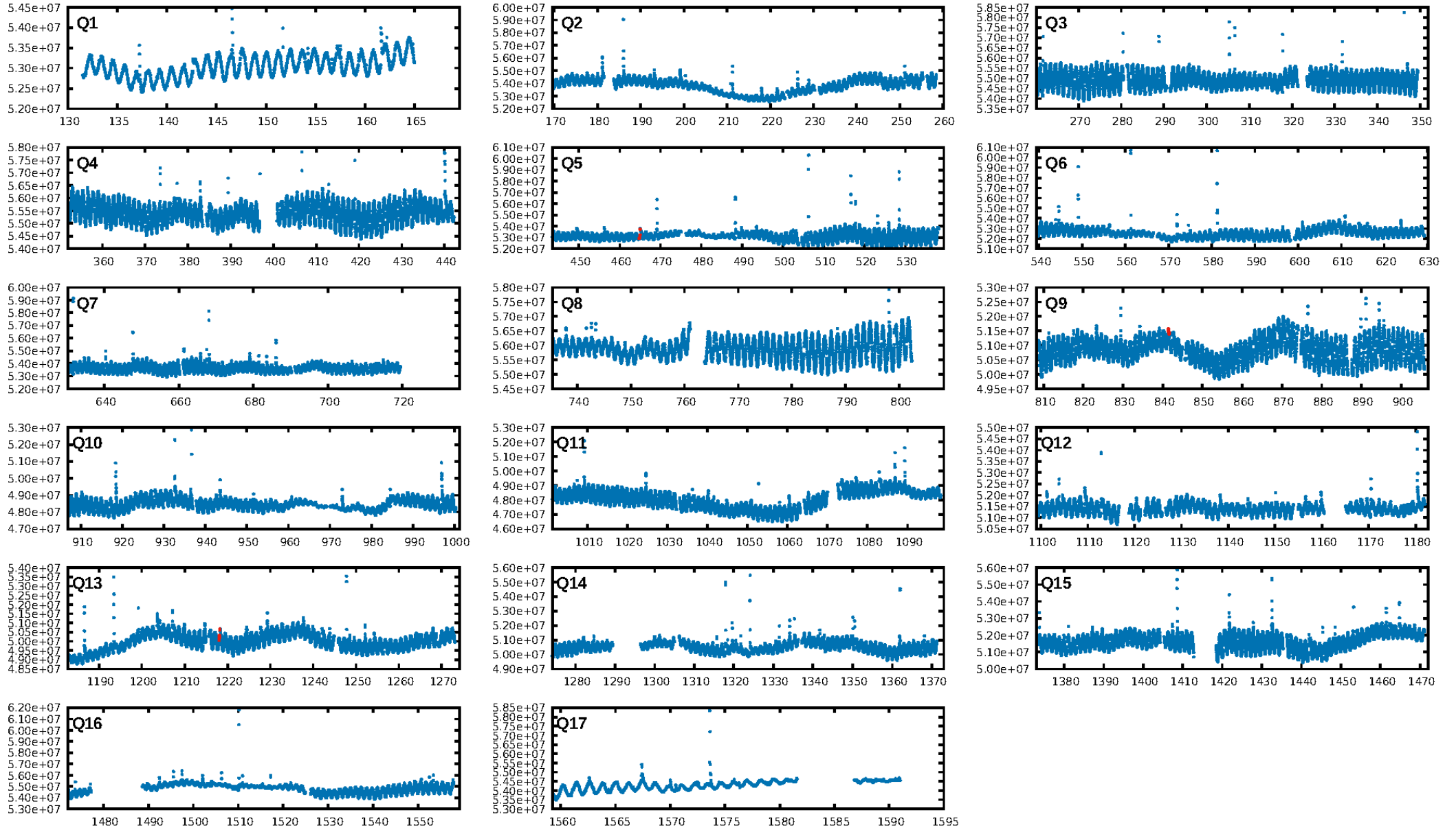
DV Fit Results:

Period = 376.59699 [0.00474] d
Epoch = 464.9139 [0.0057] BKJD
Rp/R* = 0.0394 [0.0400]
a/R* = 950.60 [3722.35]
b = 0.57 [4.67]
Seff = 0.45 [0.09]
Teq = 209 [10] K
Rp = 3.16 [3.23] Re
a = 0.9032 [0.0938] AU
Ag = 43785.02 [91615.72] [0.48σ]
Teffp = 4676 [2443] K [1.83σ]

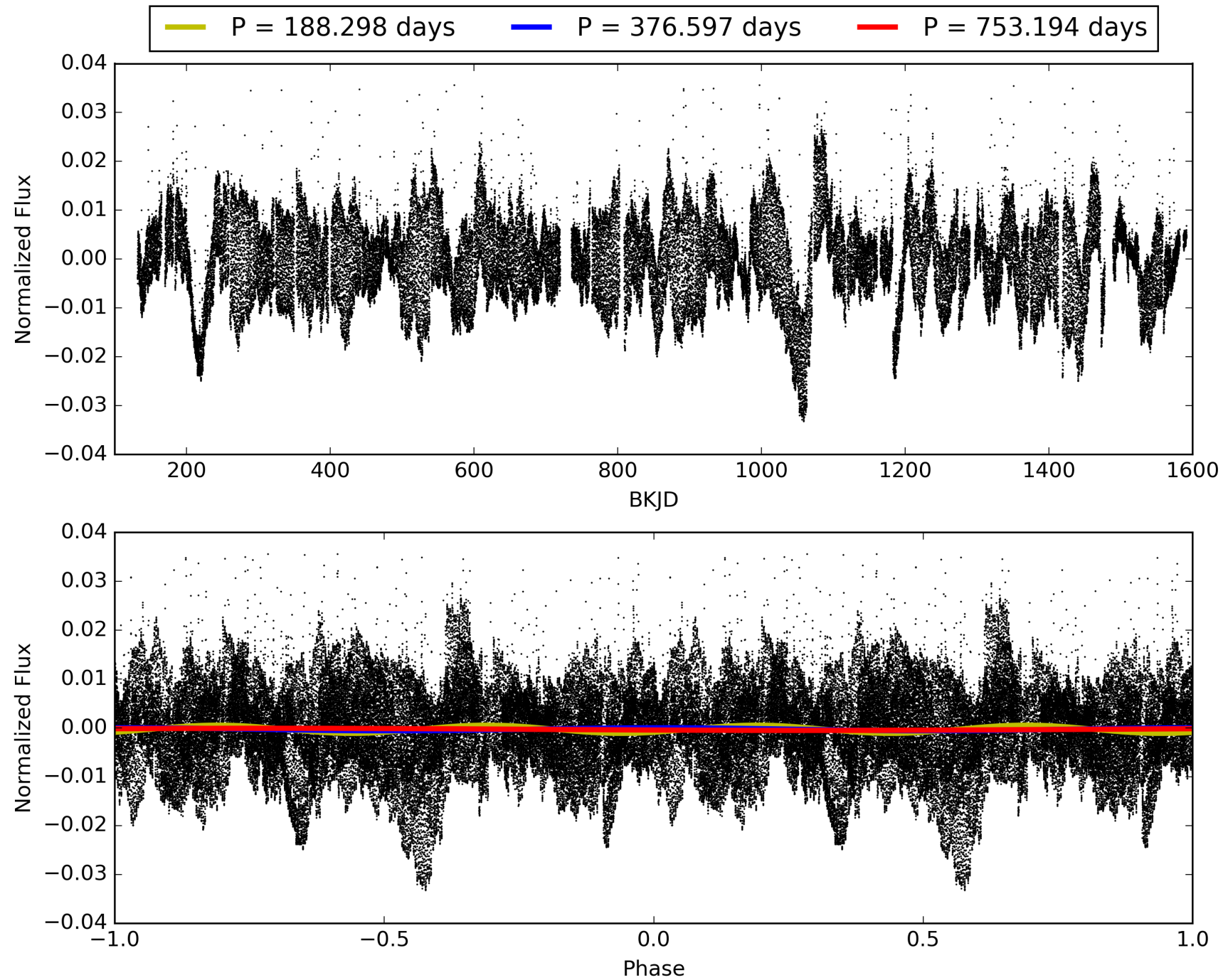
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.39σ]
LongPeriod-sig: 100.0% [54.96σ]
ModelChiSquare2-sig: 8.3%
ModelChiSquareGof-sig: 79.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.33 [1/3]
GhostDiagnostic-chr: 0.114
Centroid-sig: 92.6%
Centroid-so: 0.253 arcsec [0.35σ]
OotOffset-rm: 0.175 arcsec [1.01σ]
KicOffset-rm: 0.229 arcsec [1.17σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 011708843-03, PDC Light Curves

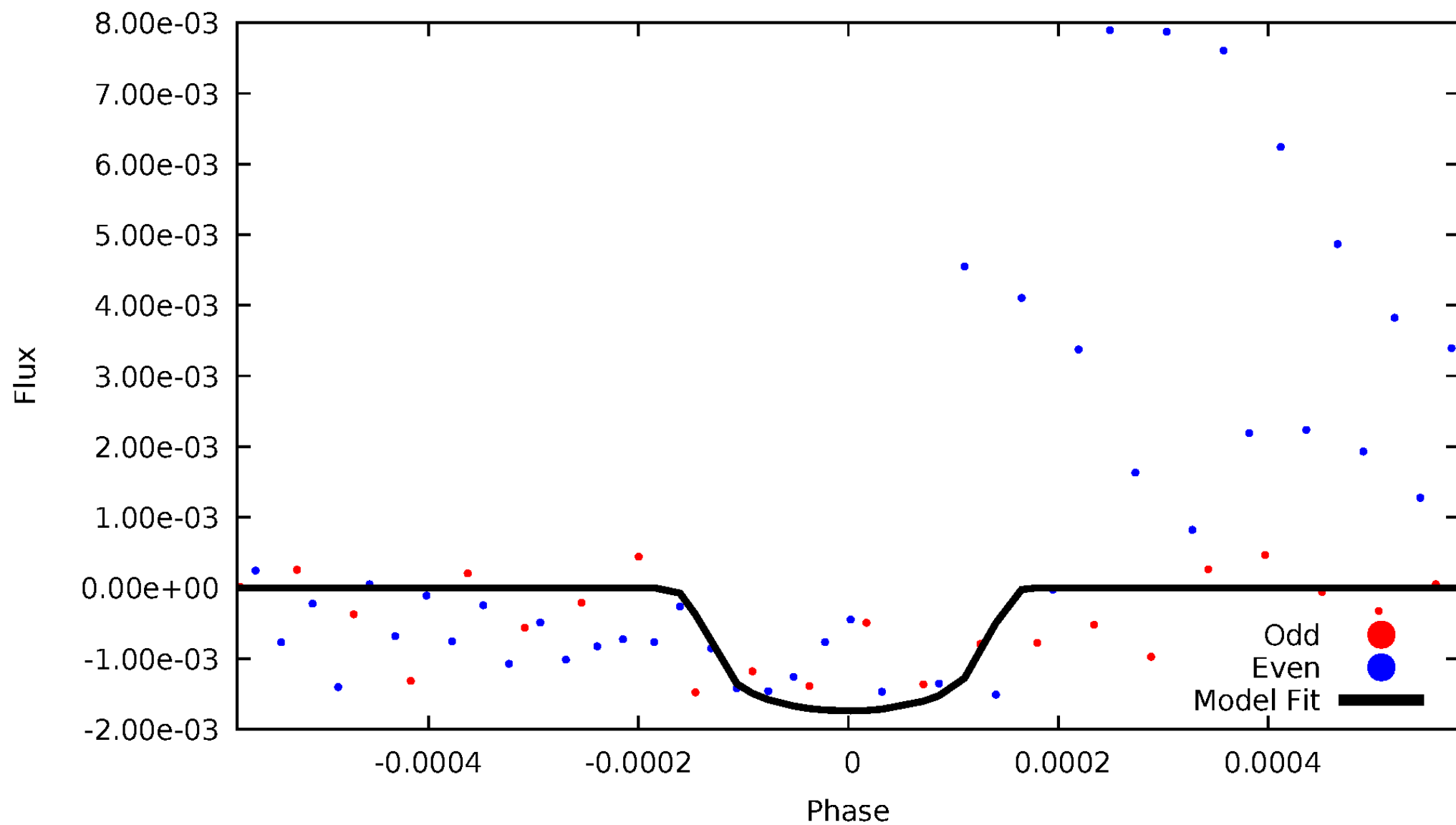


TCE 011708843-03



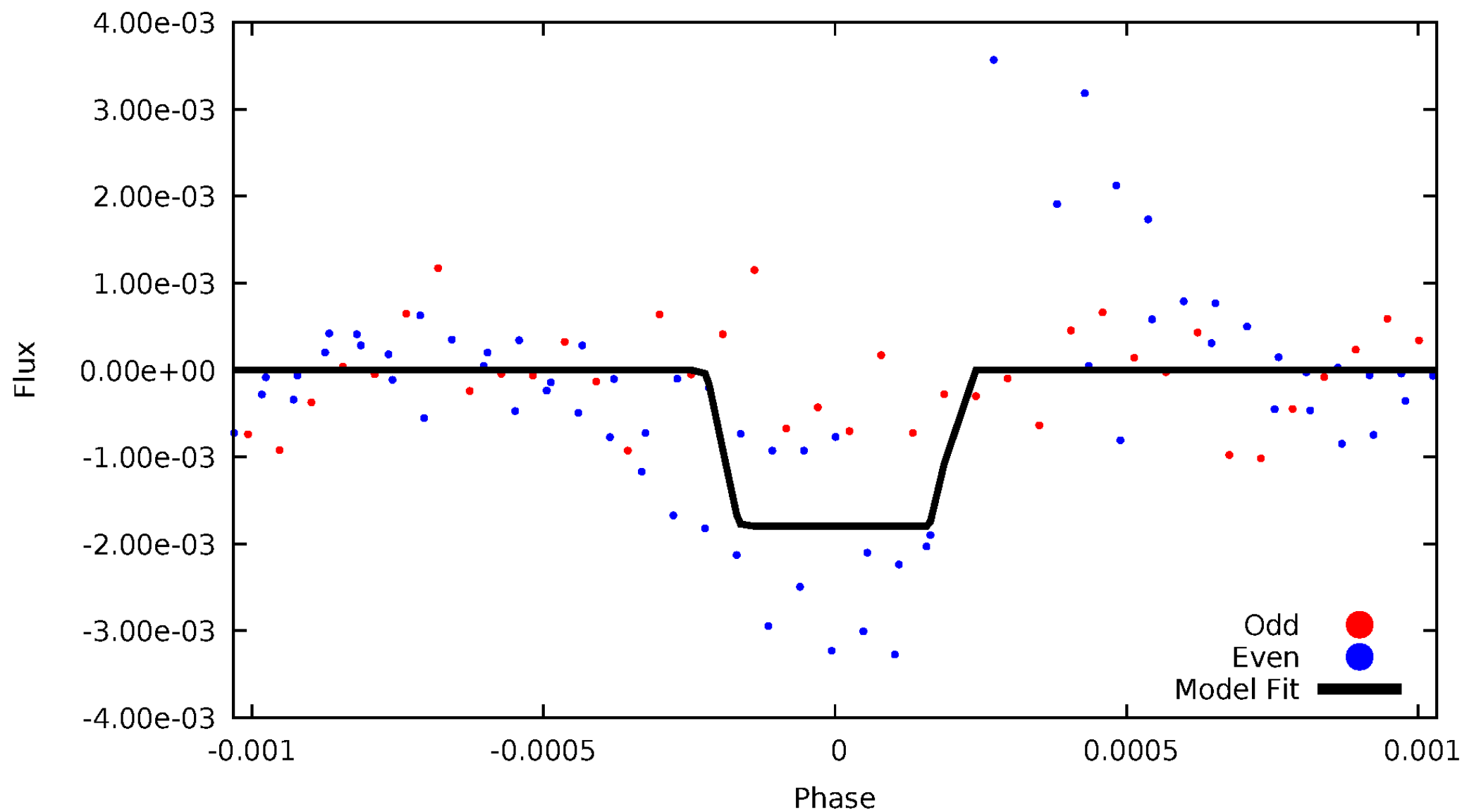
DV Odd/Even

TCE 011708843-03



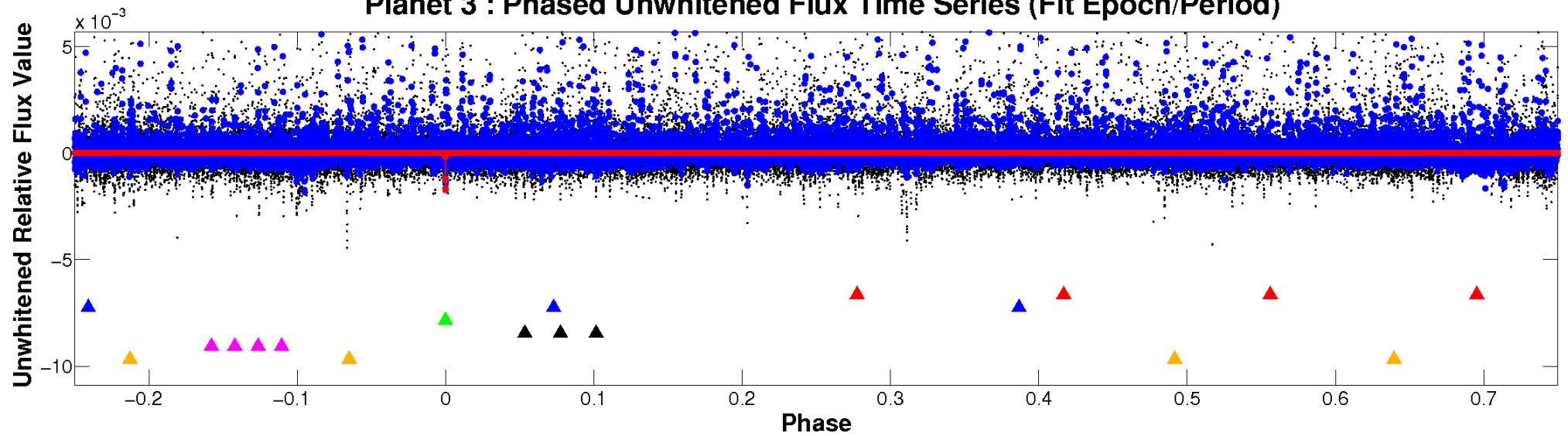
ALT Odd/Even

TCE 011708843-03

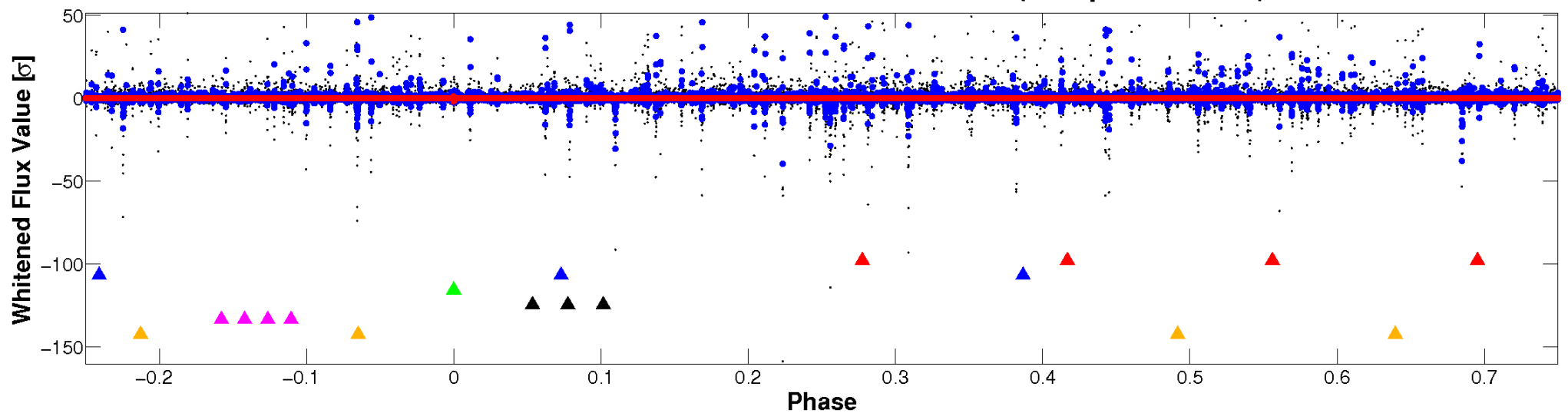


Non-Whitened Vs. Whitened Light Curve

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

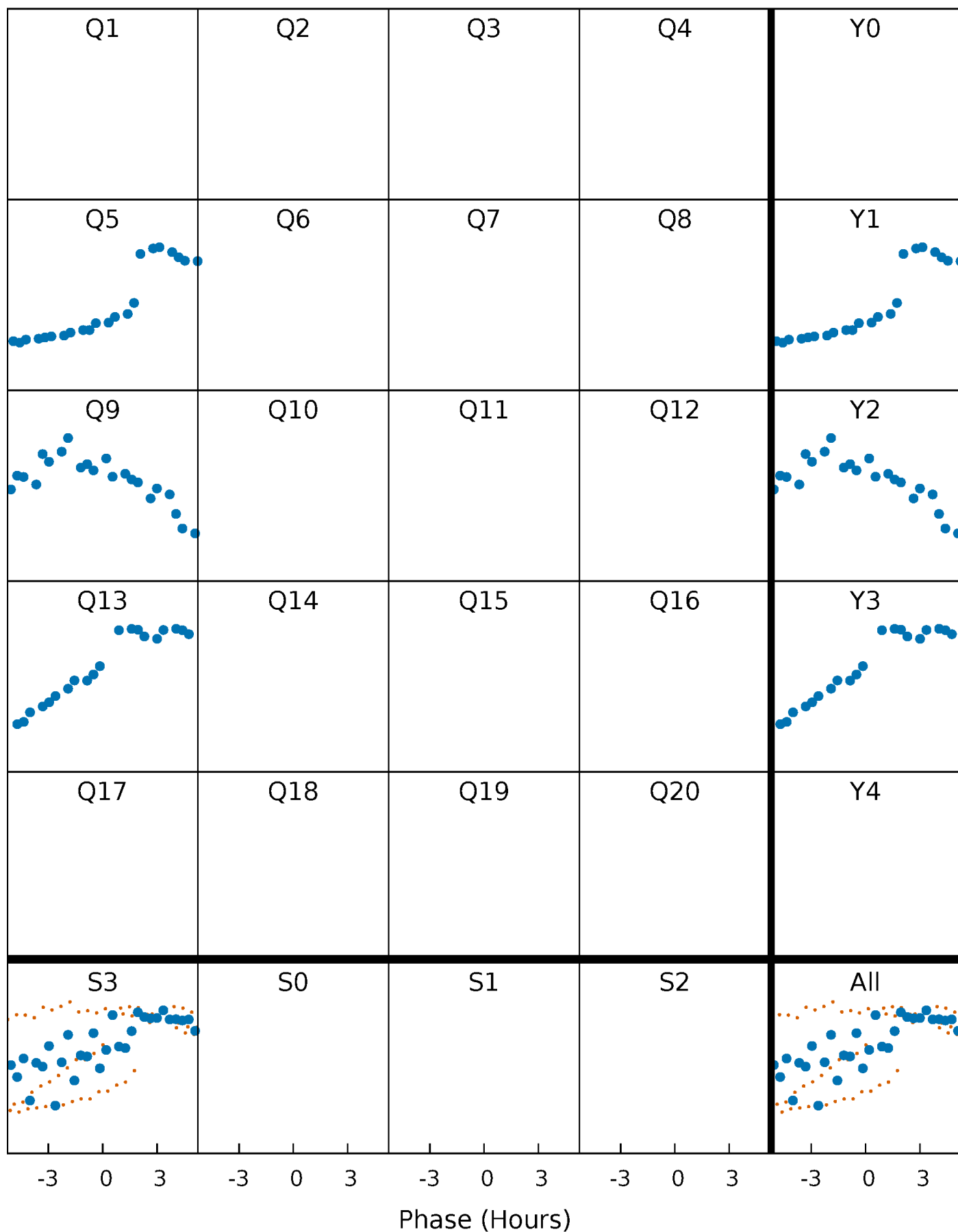


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



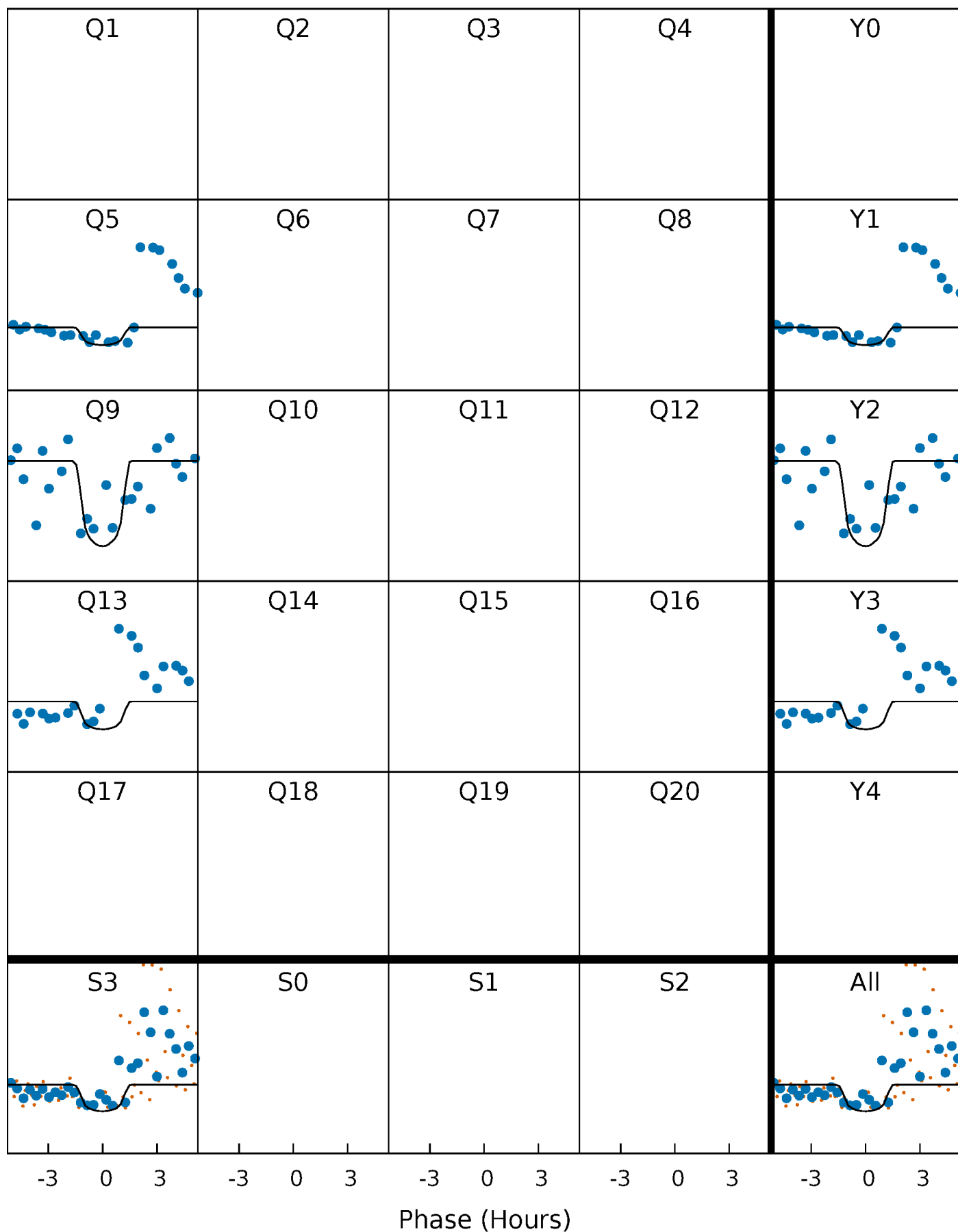
PDC Quarter-Phased Transit Curves

TCE 011708843-03 $P=376.596986$ Days $T_0=464.913875$ (BKJD)



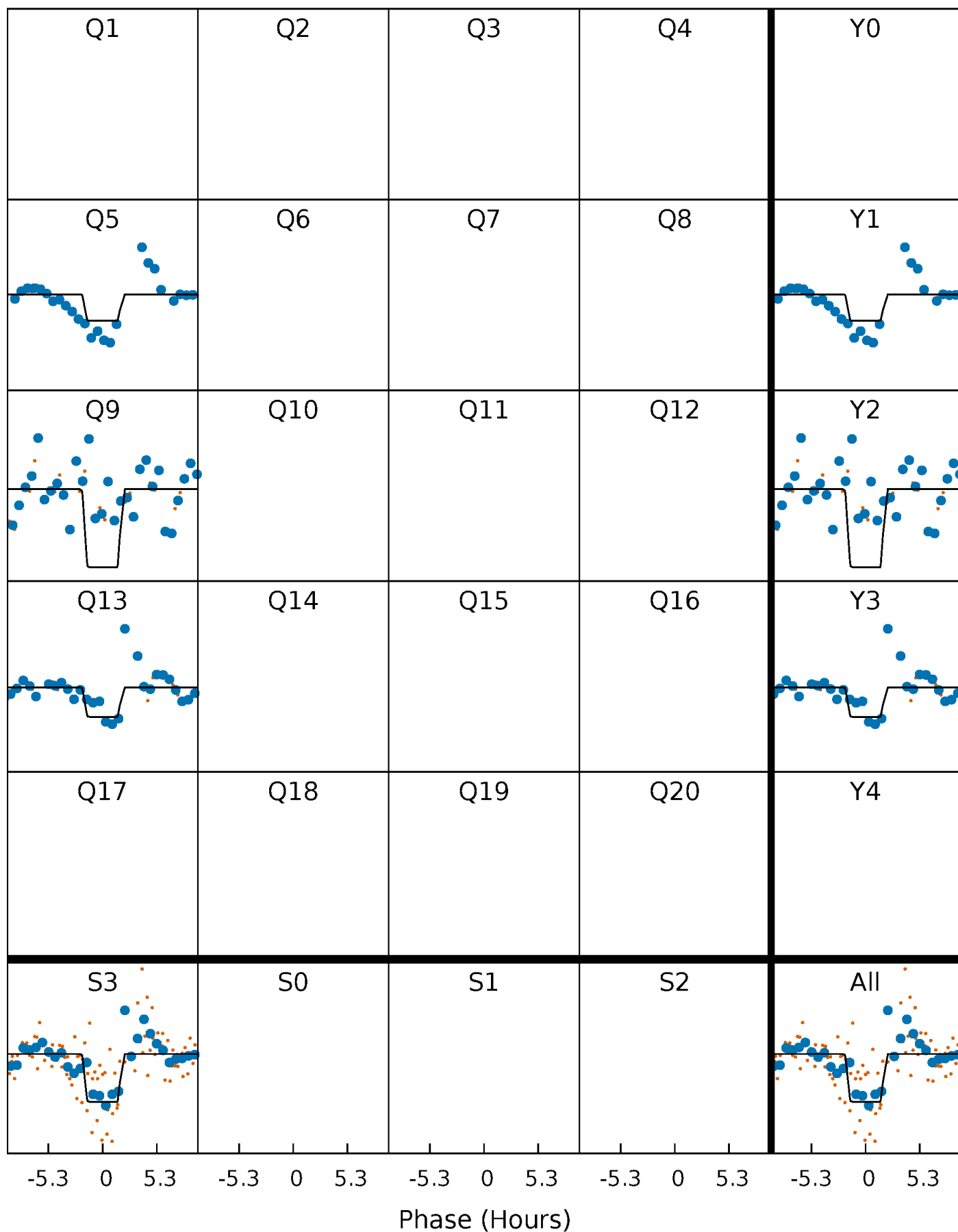
DV Quarter-Phased Transit Curves

TCE 011708843-03 $P=376.596986$ Days $T_0=464.913875$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

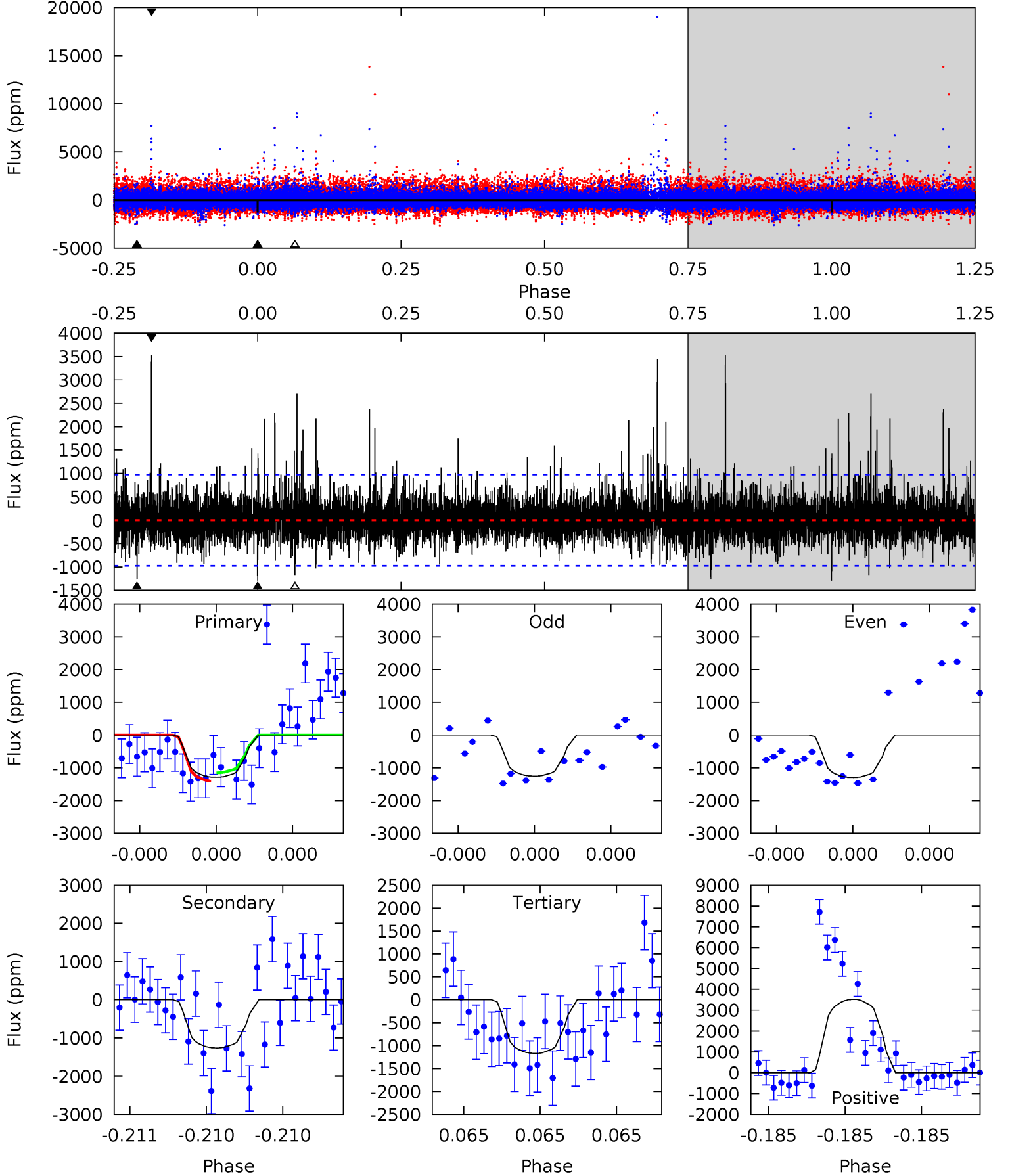
TCE 011708843-03 $P=376.559440$ Days $T_0=464.928147$ (BKJD)



DV Model-Shift Uniqueness Test

011708843-03, $P = 376.596986$ Days, $E = 88.316889$ Days

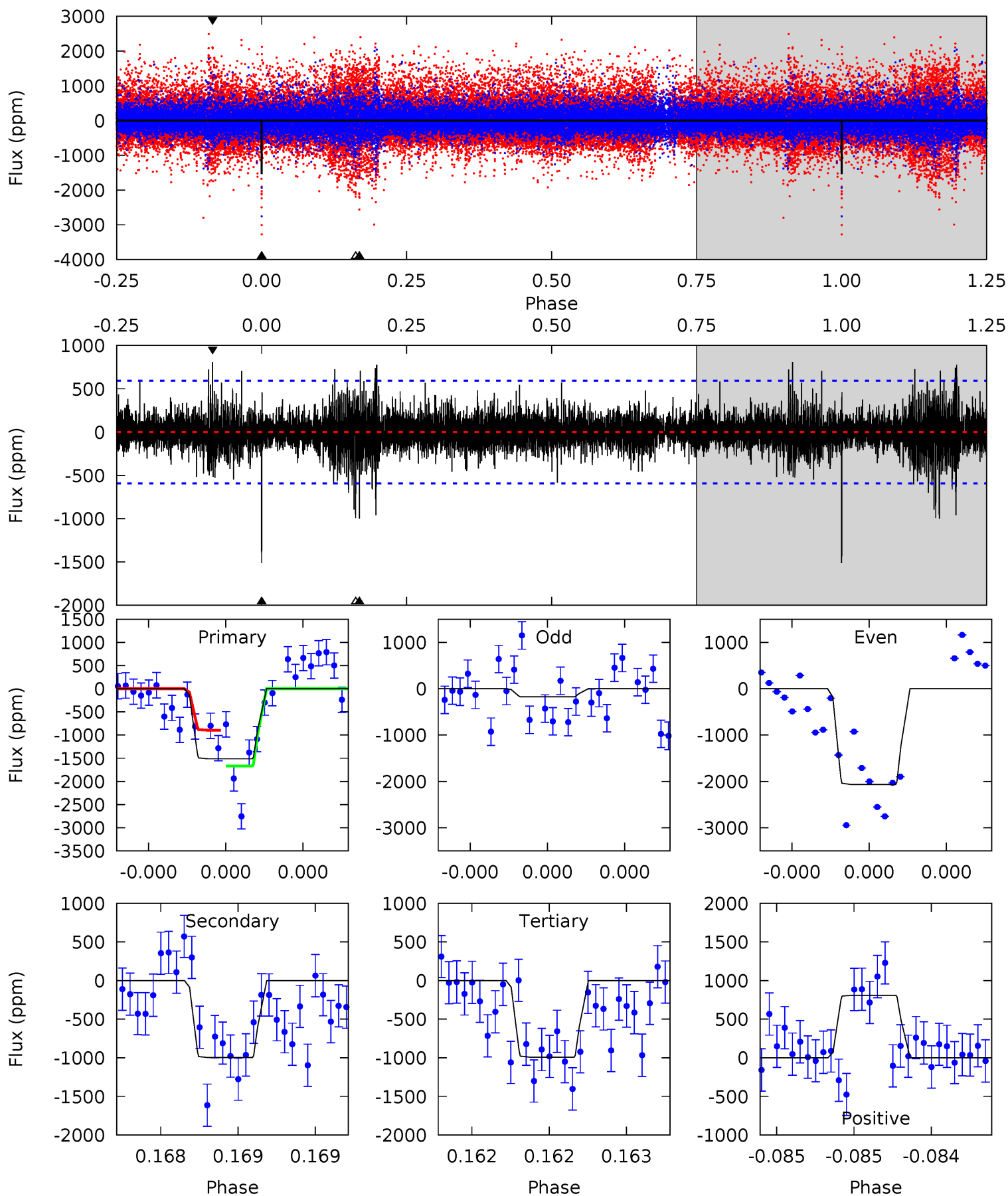
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	7.30	6.77	20.4	5.65	3.59	1.83	0.68	-12.9	0.53	-13.1	0.08	0.66	0.73	0.75



Alt Model-Shift Uniqueness Test

011708843-03, P = 376.559440 Days, E = 88.368707 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	9.39	9.34	7.62	5.59	3.50	1.39	4.90	6.62	0.05	1.77	8.41	1.05	0.35	0



Stellar Parameters For KIC 011708843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5254^{+157}_{-157}	$4.546^{+0.088}_{-0.072}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.087}_{-0.087}$	$0.693^{+0.099}_{-0.042}$	$2.458^{+0.925}_{-0.567}$
	+3%/-3%	+2%/-2%	+70%/-60%	+12%/-12%	+14%/-6%	+38%/-23%
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 011708843-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1263 ± 173	$3.68^{+3.15}_{-2.23}$	291^{+11}_{-11}	4648^{+2715}_{-896}	$39904^{+217488}_{-27754}$
Alt.	-997 ± 106	$3.89^{+3.21}_{-2.23}$	292^{+13}_{-12}	4384^{+2123}_{-831}	$29402^{+138804}_{-20508}$

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

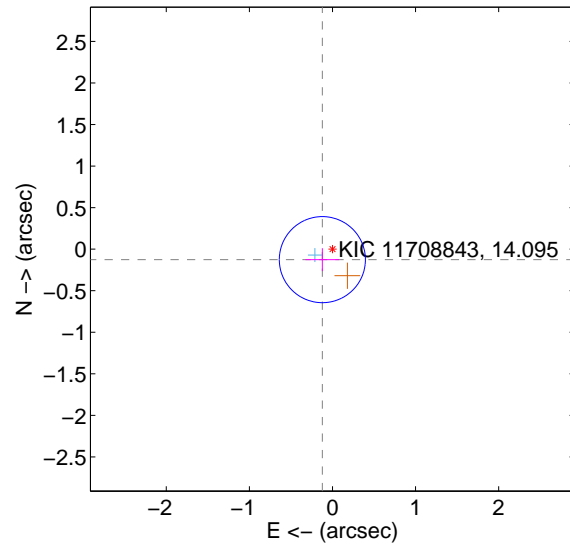
Supplemental centroid analysis for 011708843-03. Kepler magnitude: 14.10. Transit SNR 6.25

There are 1 quarters with good PRF difference image offsets

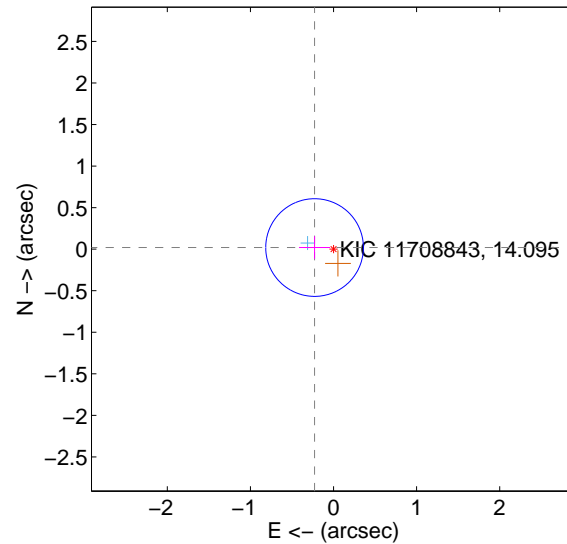
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.175 ± 0.173	1.01	0.122 ± 0.203	-0.126 ± 0.138
PRF-fit source offset from KIC position	0.229 ± 0.196	1.17	0.228 ± 0.187	0.020 ± 0.135
photometric centroid source offset	0.25 ± 0.72	0.35	0.23 ± 0.69	-0.10 ± 0.88

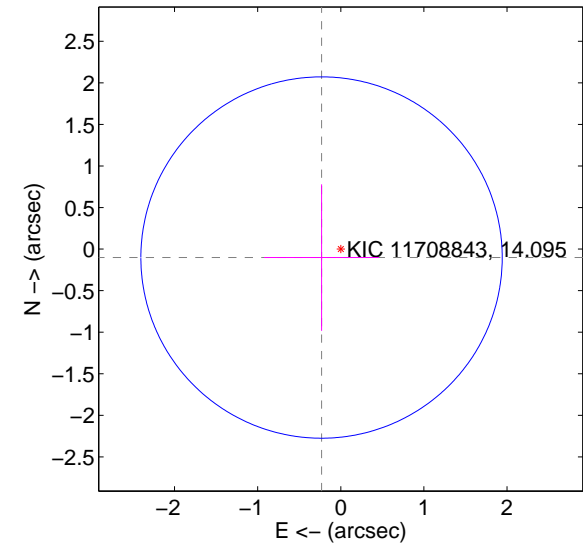
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

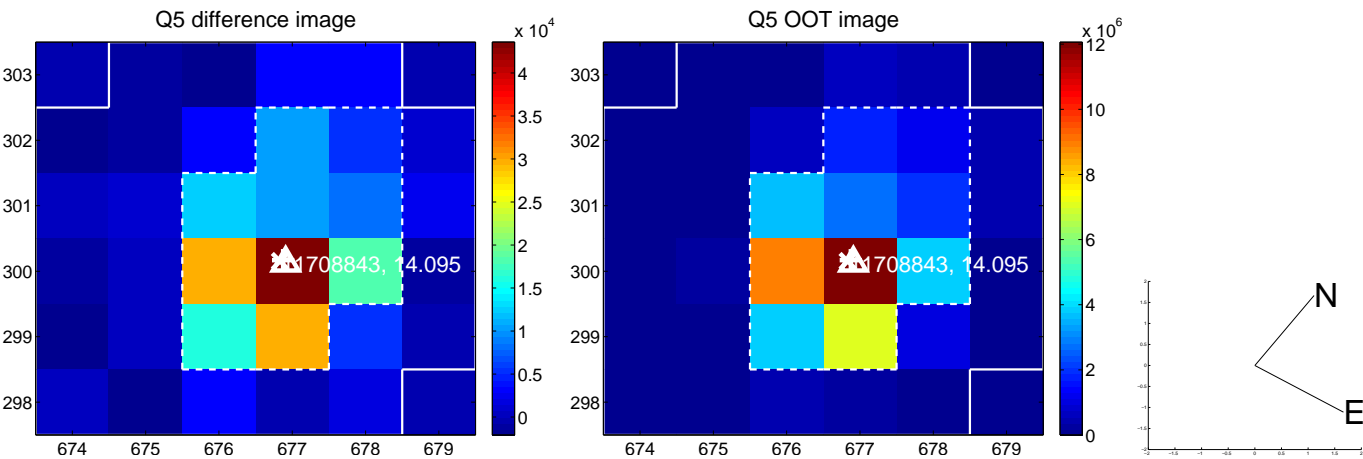


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

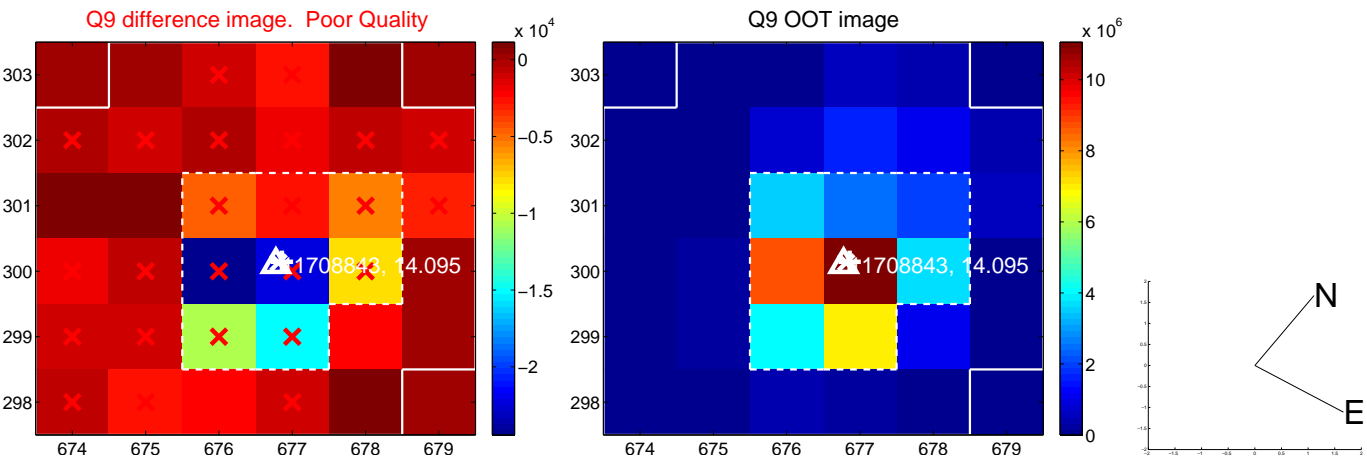
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



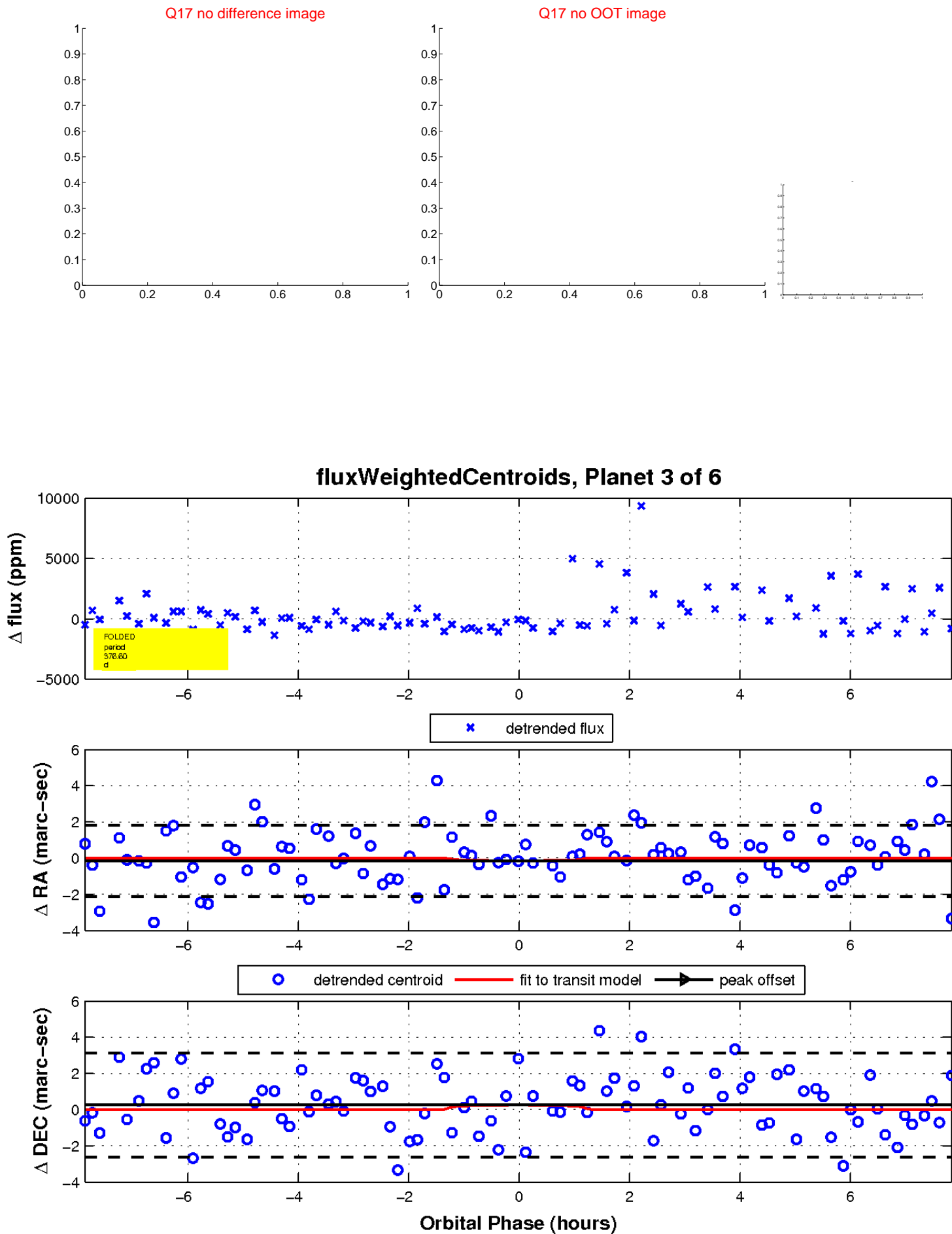
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

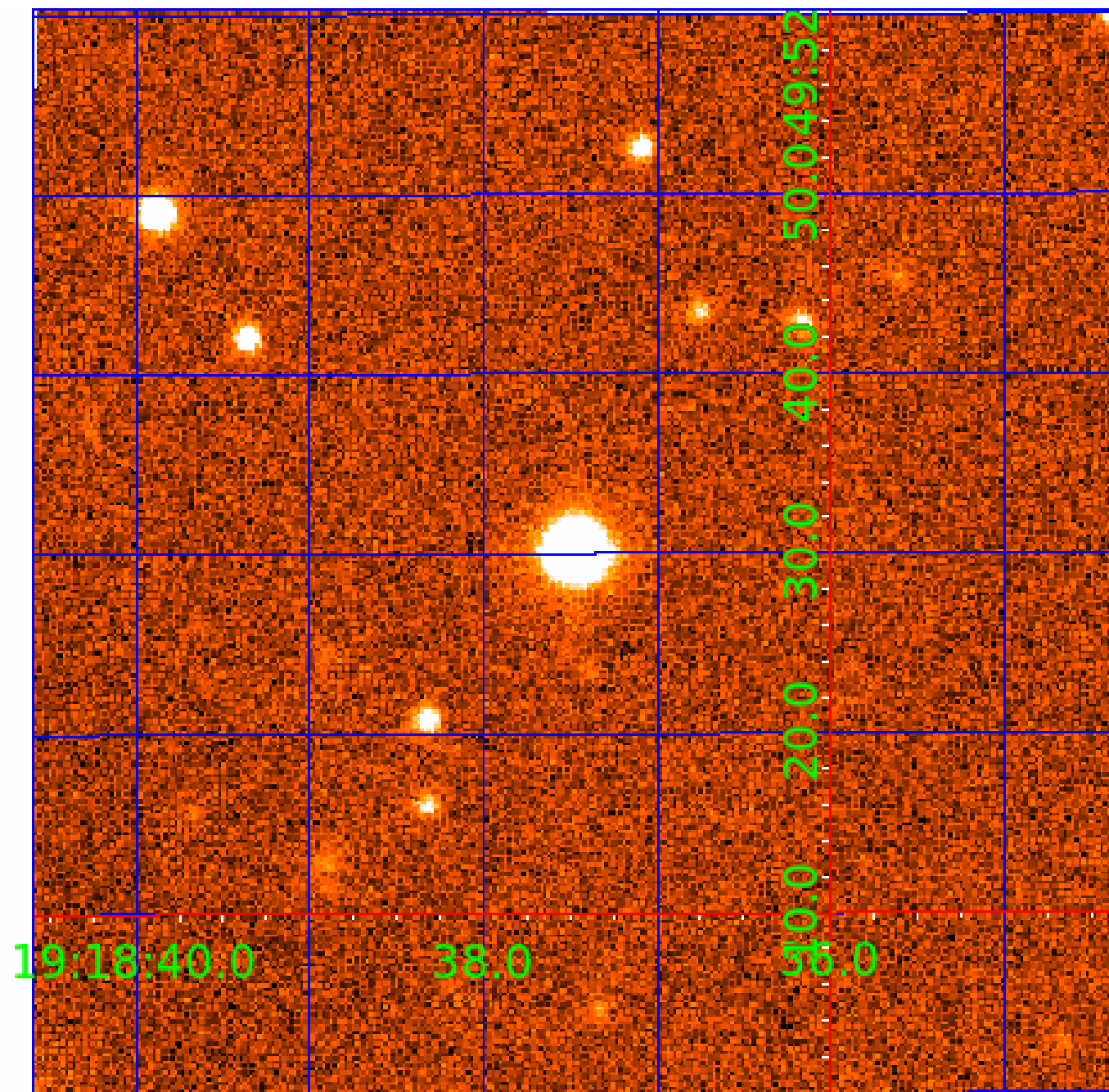


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011708843

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})
011708843-01	OBS	No	429.045786	192.833750	2367.9	4.387	17.0	9.3	0.73	5254	3.73	0.38
011708843-02	OBS	No	635.028100	233.946933	1846.0	3.464	16.9	7.4	0.73	5254	3.10	0.23
011708843-03	OBS	No	376.596986	464.913875	1741.1	2.631	19.0	6.3	0.73	5254	3.16	0.45
011708843-04	OBS	No	385.645675	485.064526	3261.7	2.948	14.8	11.3	0.73	5254	4.13	0.44
011708843-05	OBS	No	370.653495	423.311350	1895.7	4.723	18.5	6.3	0.73	5254	3.28	0.46
011708843-06	OBS	No	432.256968	273.494588	2344.1	11.723	20.6	6.6	0.73	5254	3.92	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708843-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
011708843-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011708843-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
011708843-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-06	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

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

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

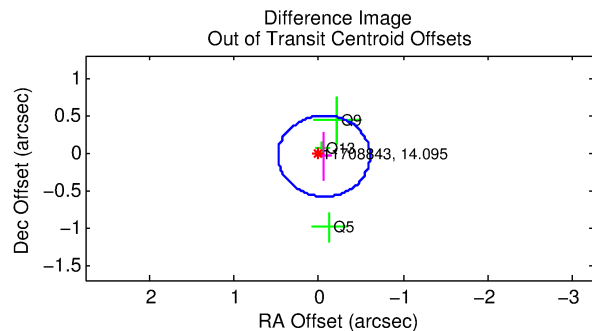
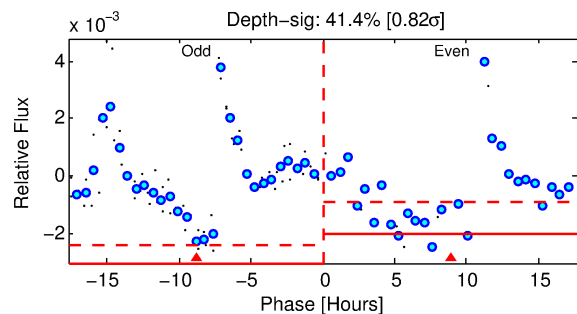
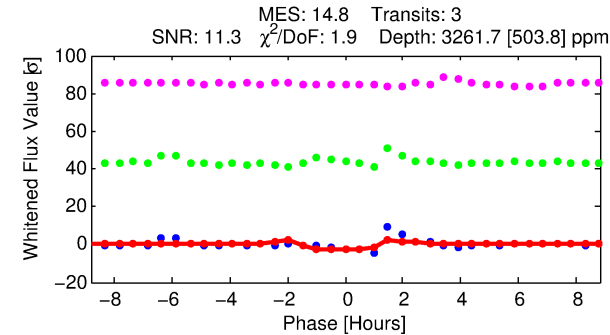
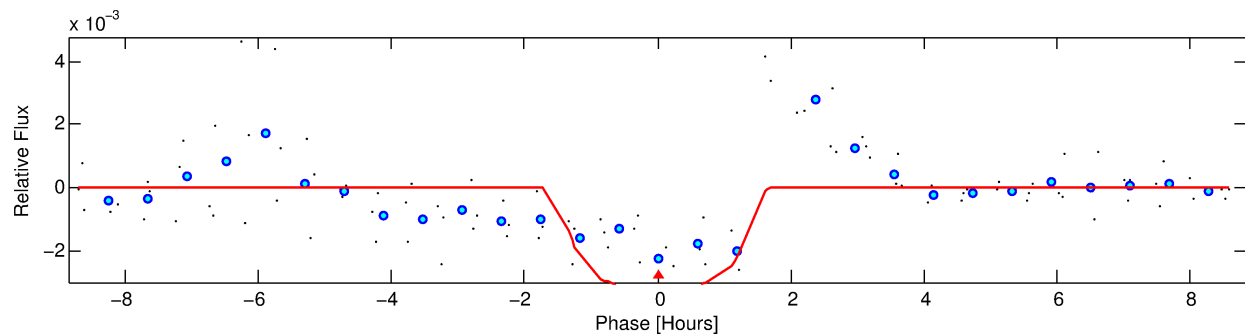
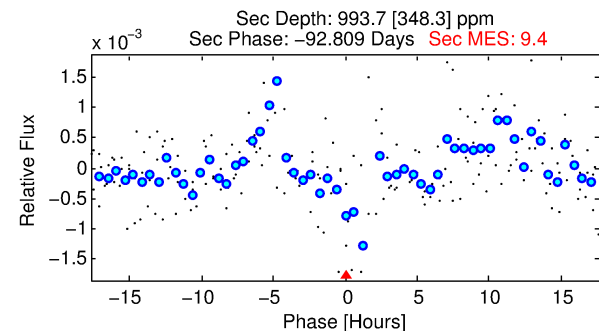
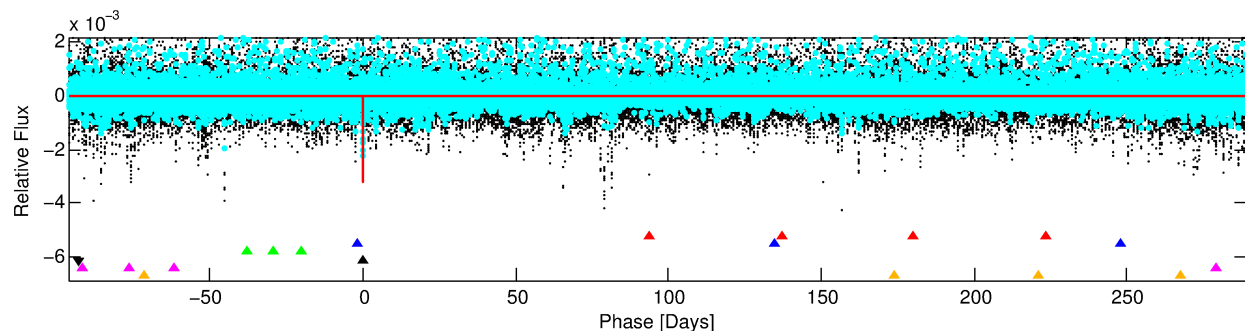
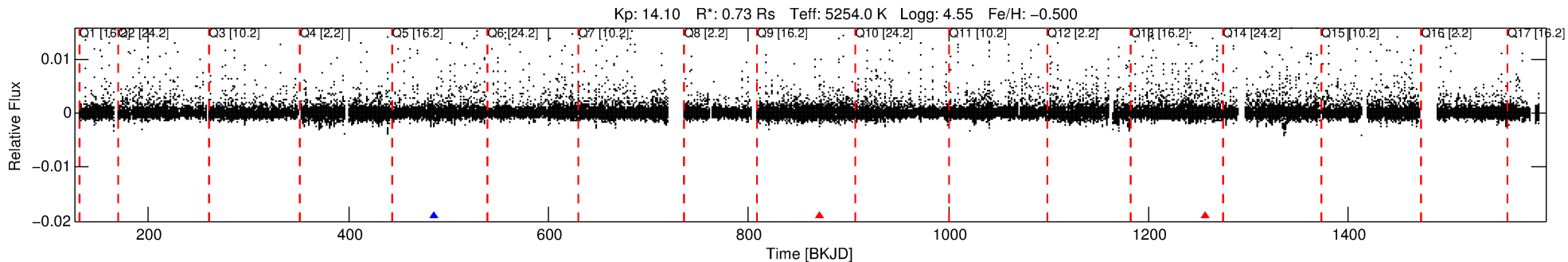
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708843-04

No Significant Match Found

DV One-Page Summary

KIC: 11708843 Candidate: 4 of 6 Period: 385.646 d



DV Fit Results:

Period = 385.64568 [0.00333] d
Epoch = 485.0645 [0.0046] BKJD
Rp/R* = 0.0515 [0.0562]
a/R* = 1050.86 [4521.72]
b = 0.01 [670.61]
Seff = 0.44 [0.09]
Teq = 207 [10] K
Rp = 4.13 [4.54] Re
a = 0.9177 [0.0953] AU
Ag = 26990.58 [59850.24] [0.45σ]
Teffp = 4111 [2277] K [1.71σ]

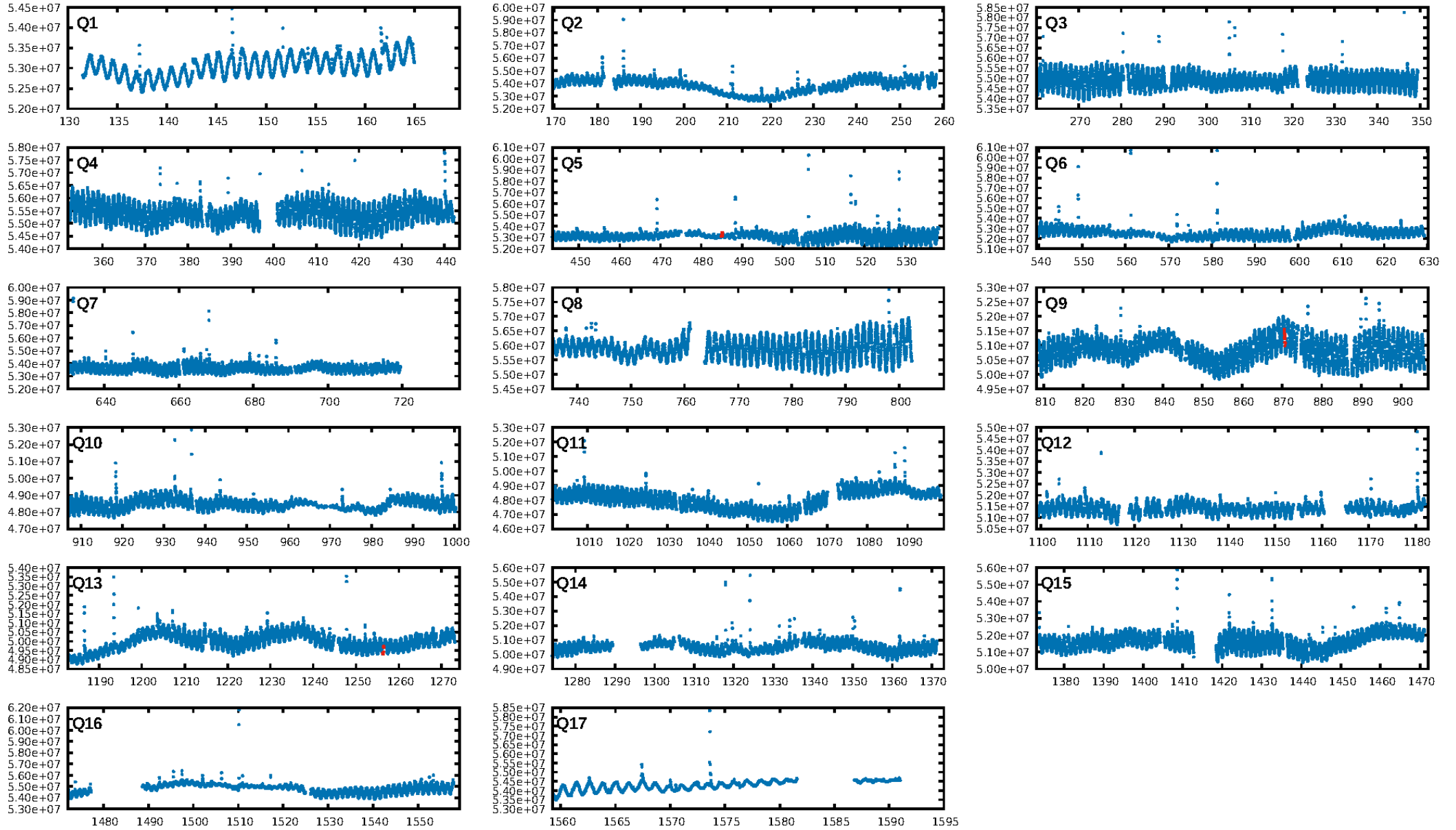
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [54.96σ]
LongPeriod-sig: 100.0% [197.07σ]
ModelChiSquare2-sig: 83.1%
ModelChiSquareGof-sig: 18.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.33 [1/3]
GhostDiagnostic-chr: 1.402
Centroid-sig: 29.3%
Centroid-so: 0.315 arcsec [0.76σ]
OotOffset-rm: 0.079 arcsec [0.44σ]
KicOffset-rm: 0.092 arcsec [0.29σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

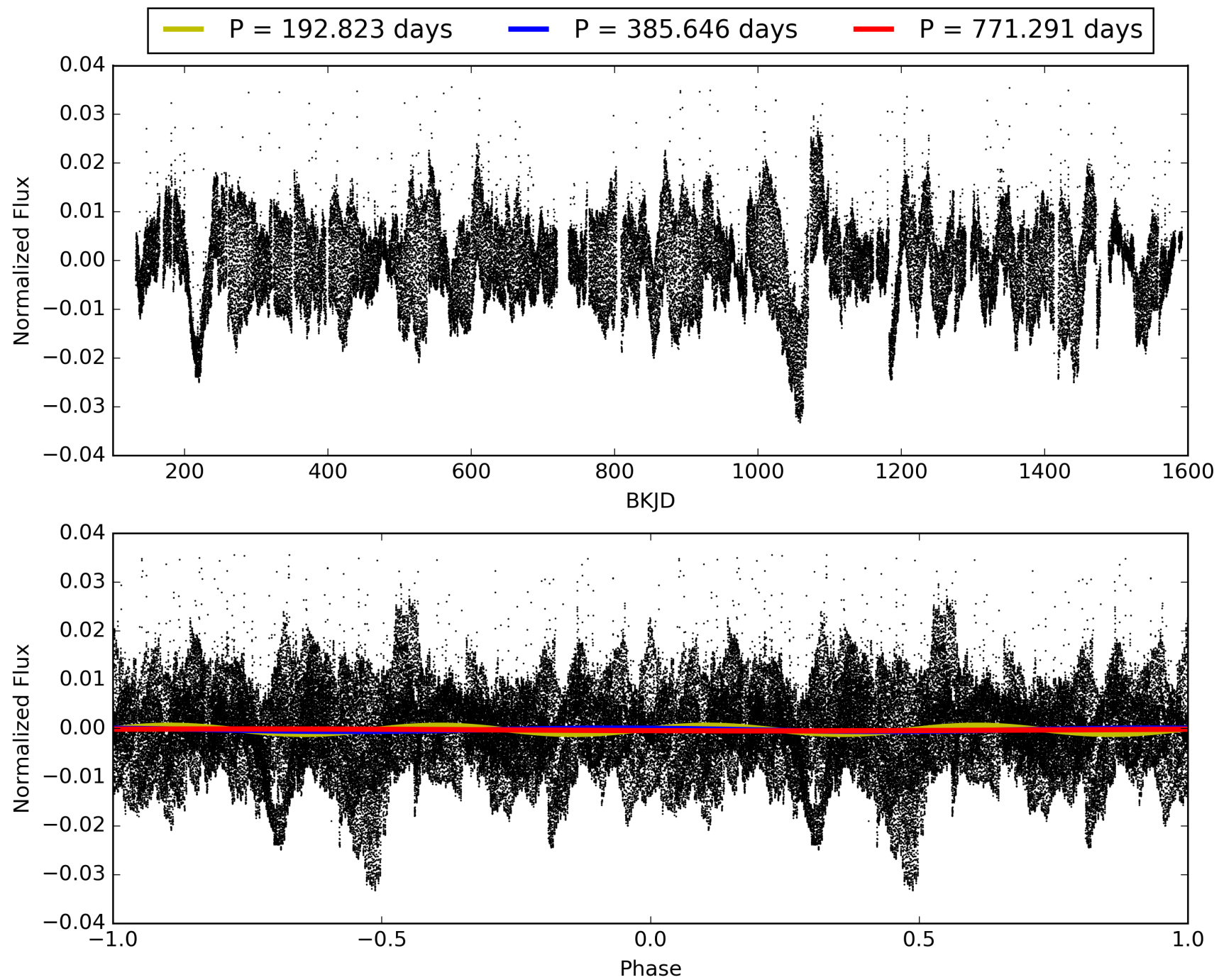
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:30:35 Z

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

TCE 011708843-04, PDC Light Curves

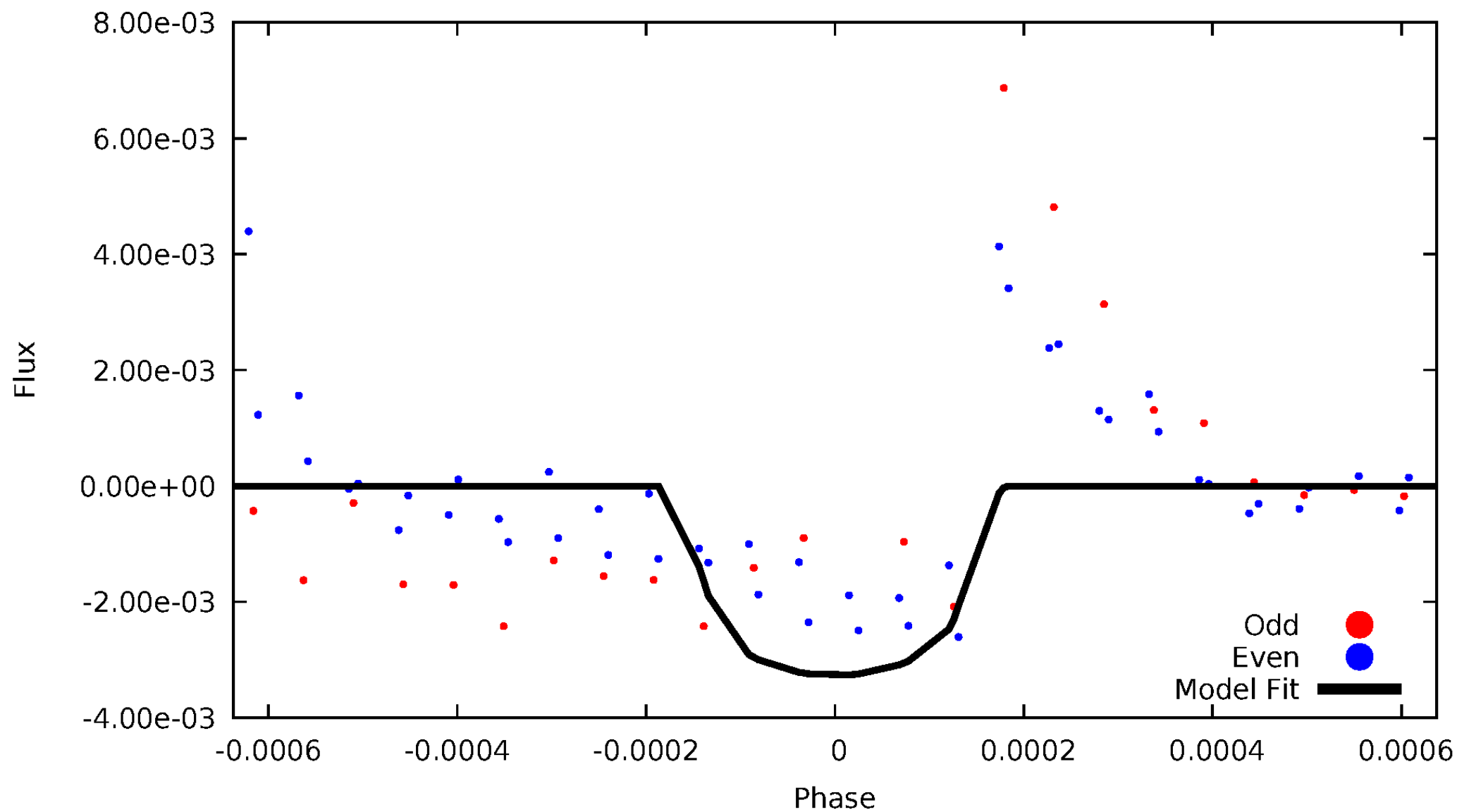


TCE 011708843-04



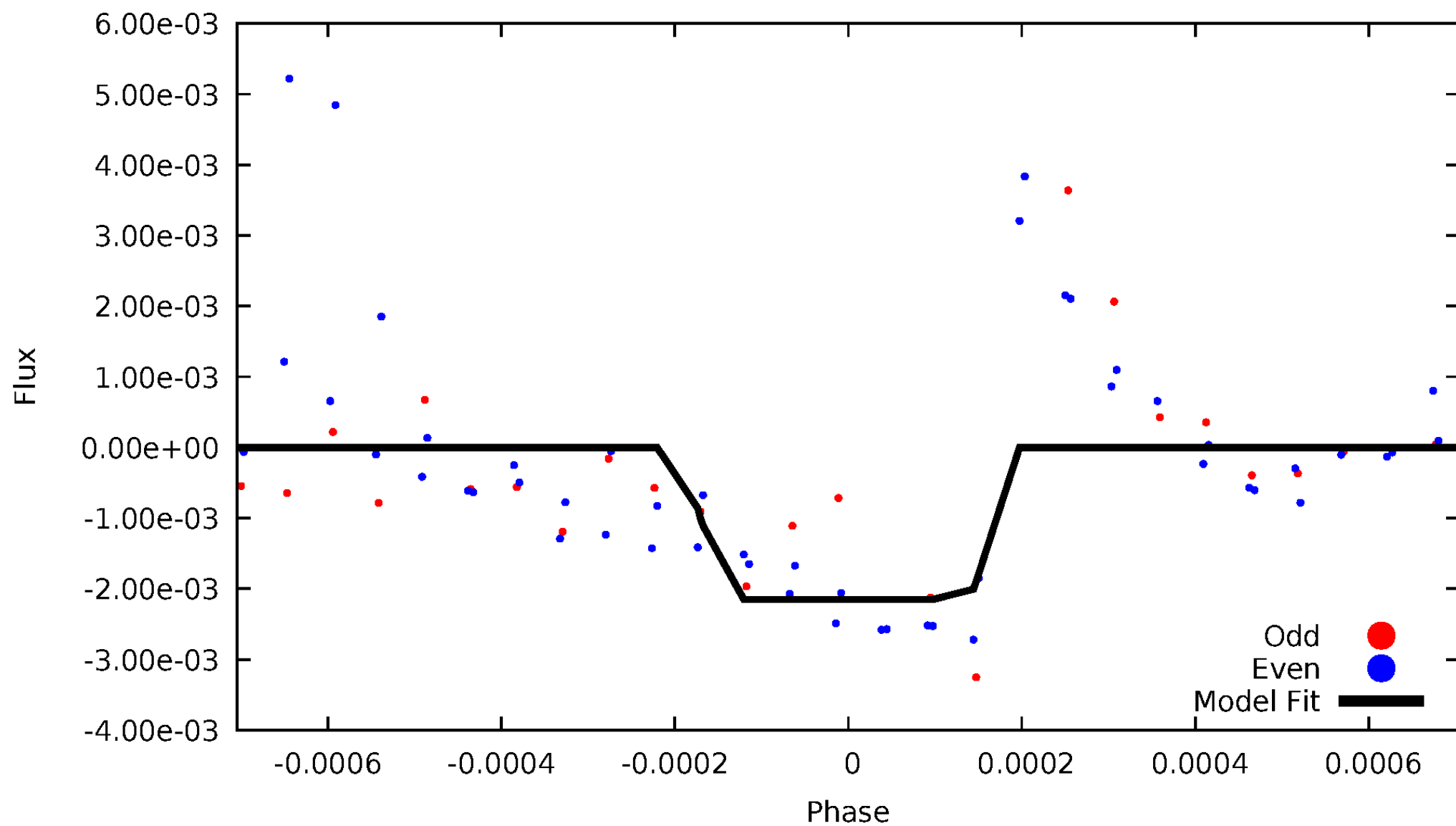
DV Odd/Even

TCE 011708843-04



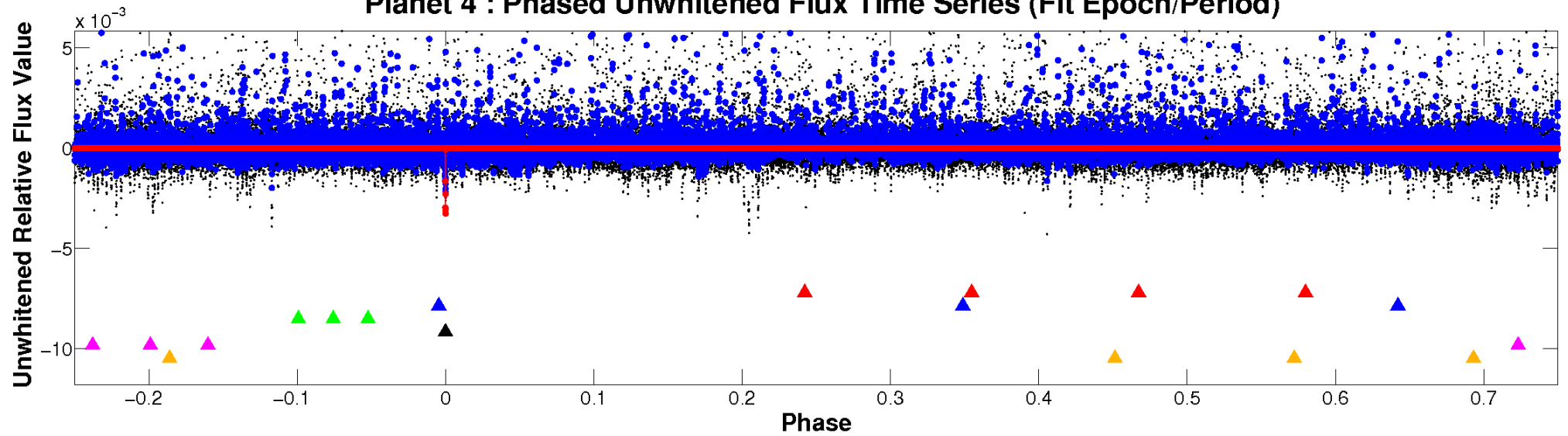
ALT Odd/Even

TCE 011708843-04

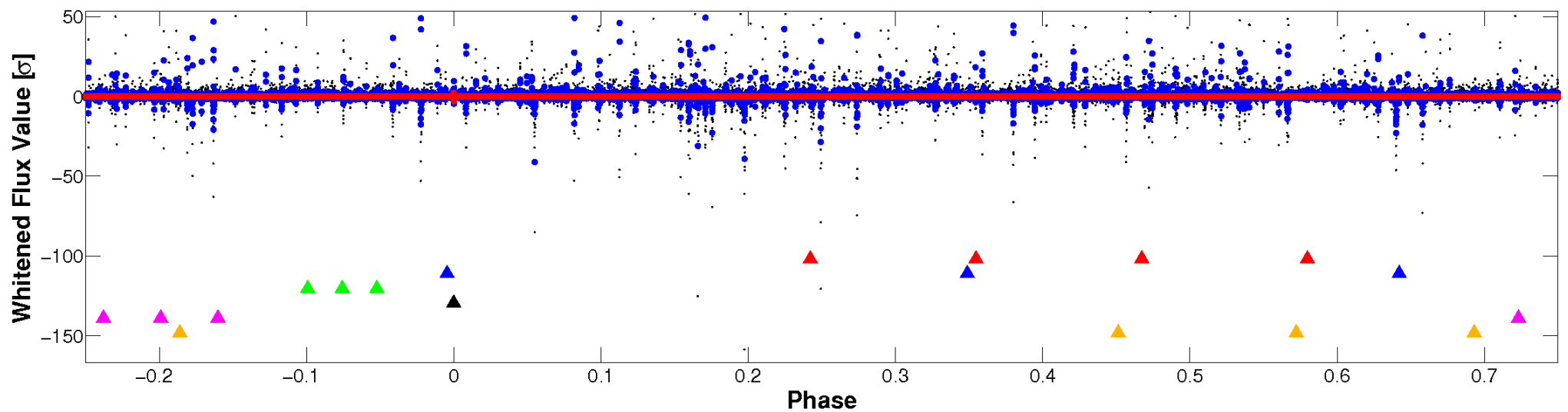


Non-Whitened Vs. Whitened Light Curve

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

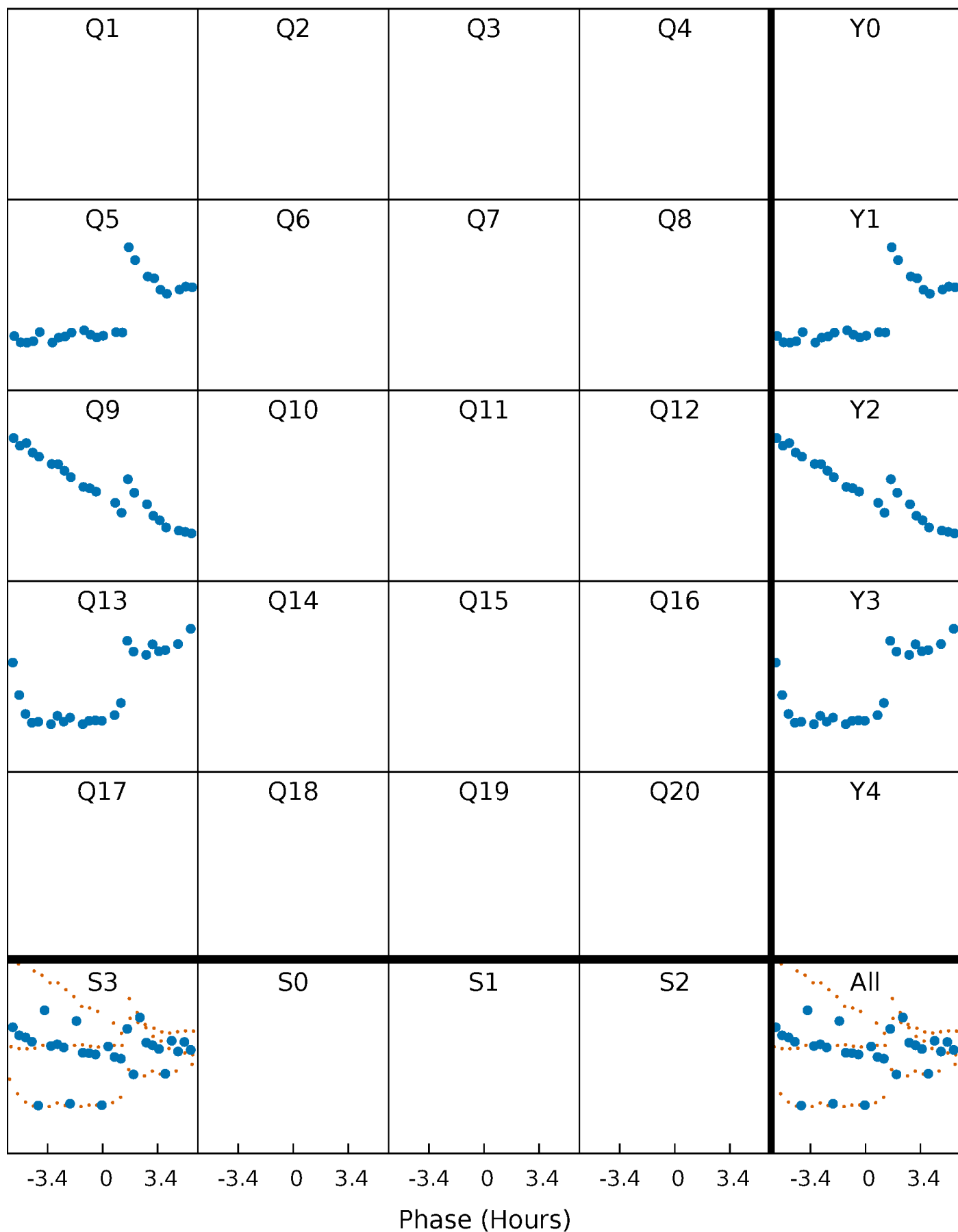


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



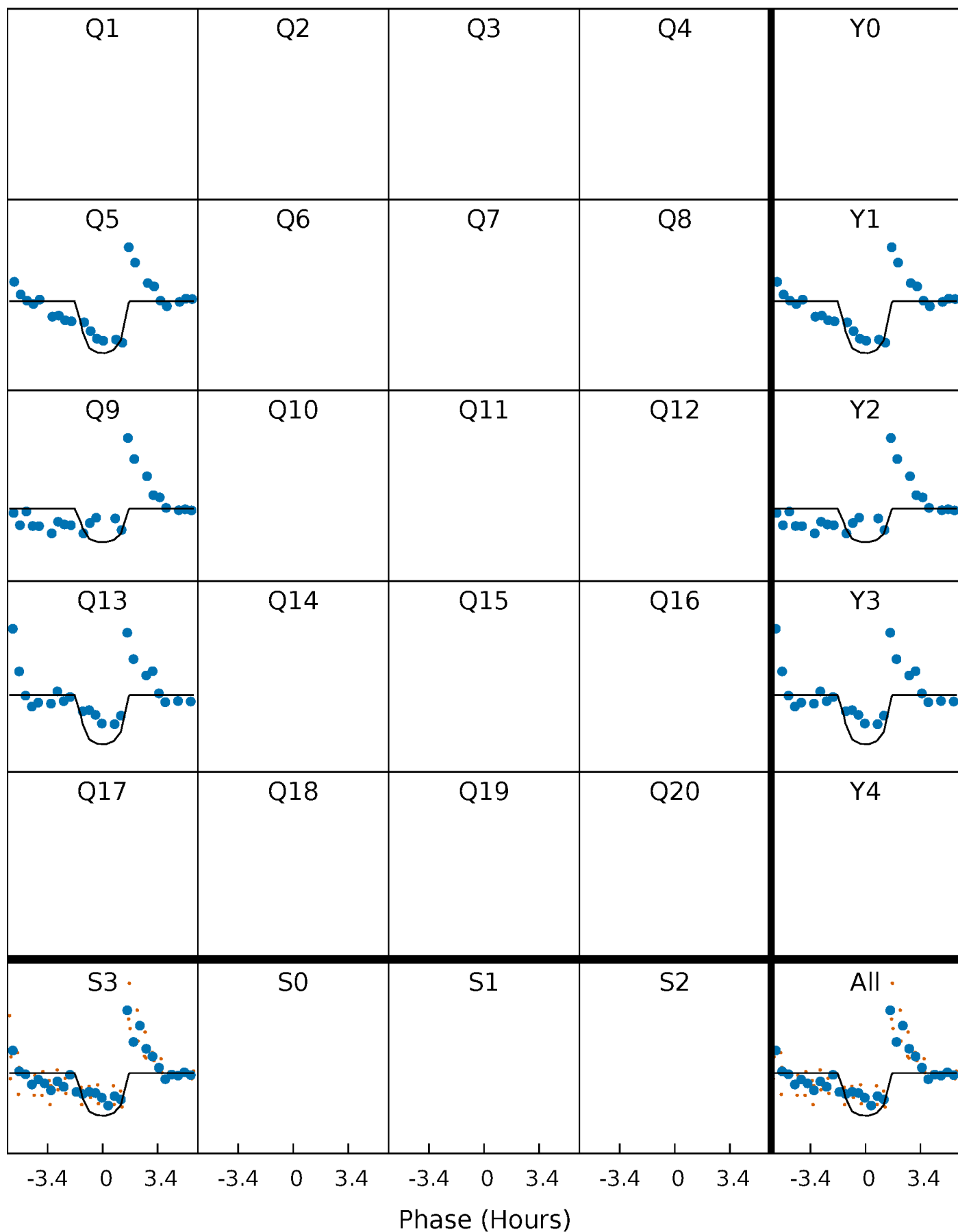
PDC Quarter-Phased Transit Curves

TCE 011708843-04 $P=385.645675$ Days $T_0=485.064526$ (BKJD)



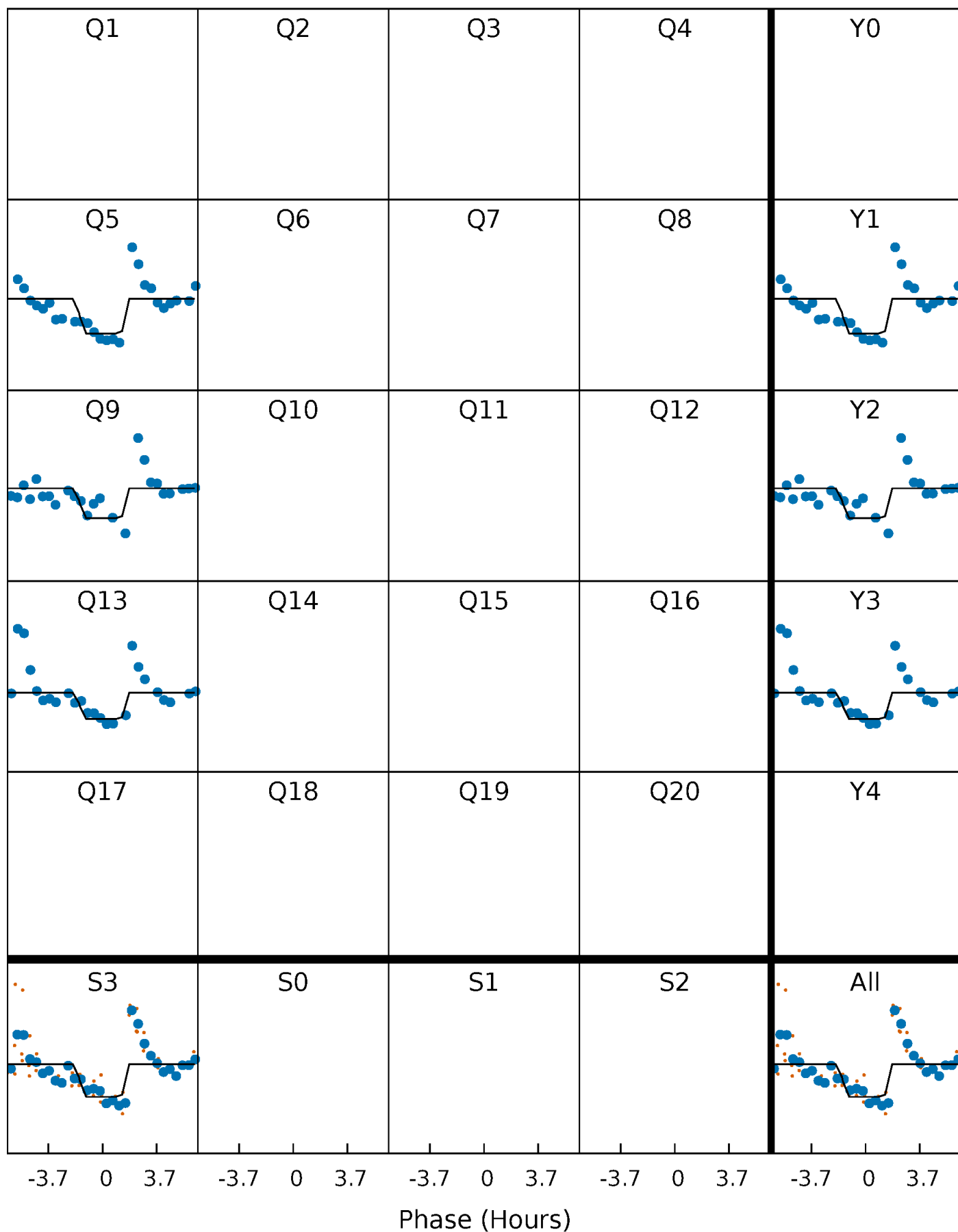
DV Quarter-Phased Transit Curves

TCE 011708843-04 P=385.645675 Days $T_0=485.064526$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

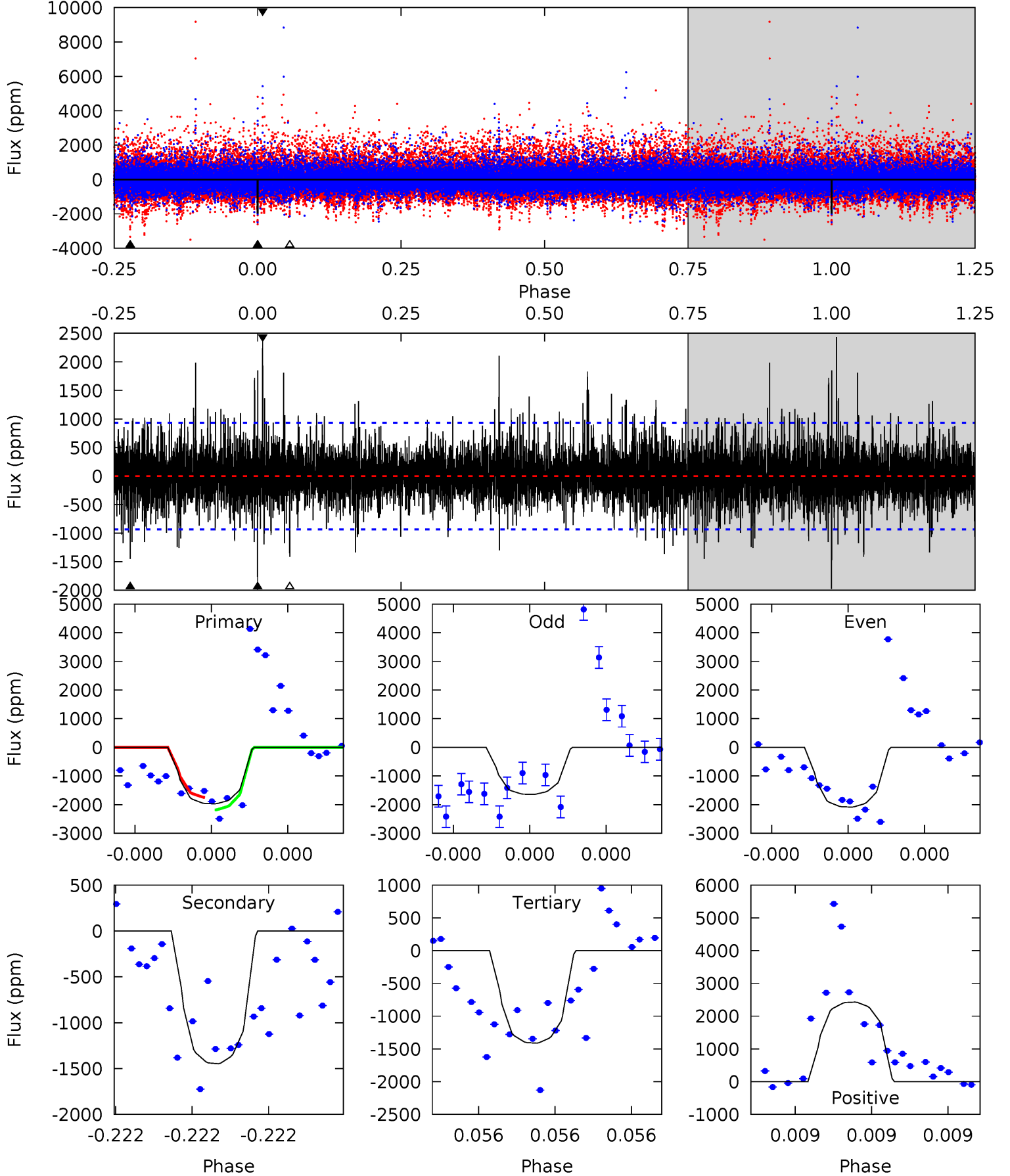
TCE 011708843-04 P=385.642578 Days $T_0=485.059322$ (BKJD)



DV Model-Shift Uniqueness Test

011708843-04, P = 385.645675 Days, E = 99.418851 Days

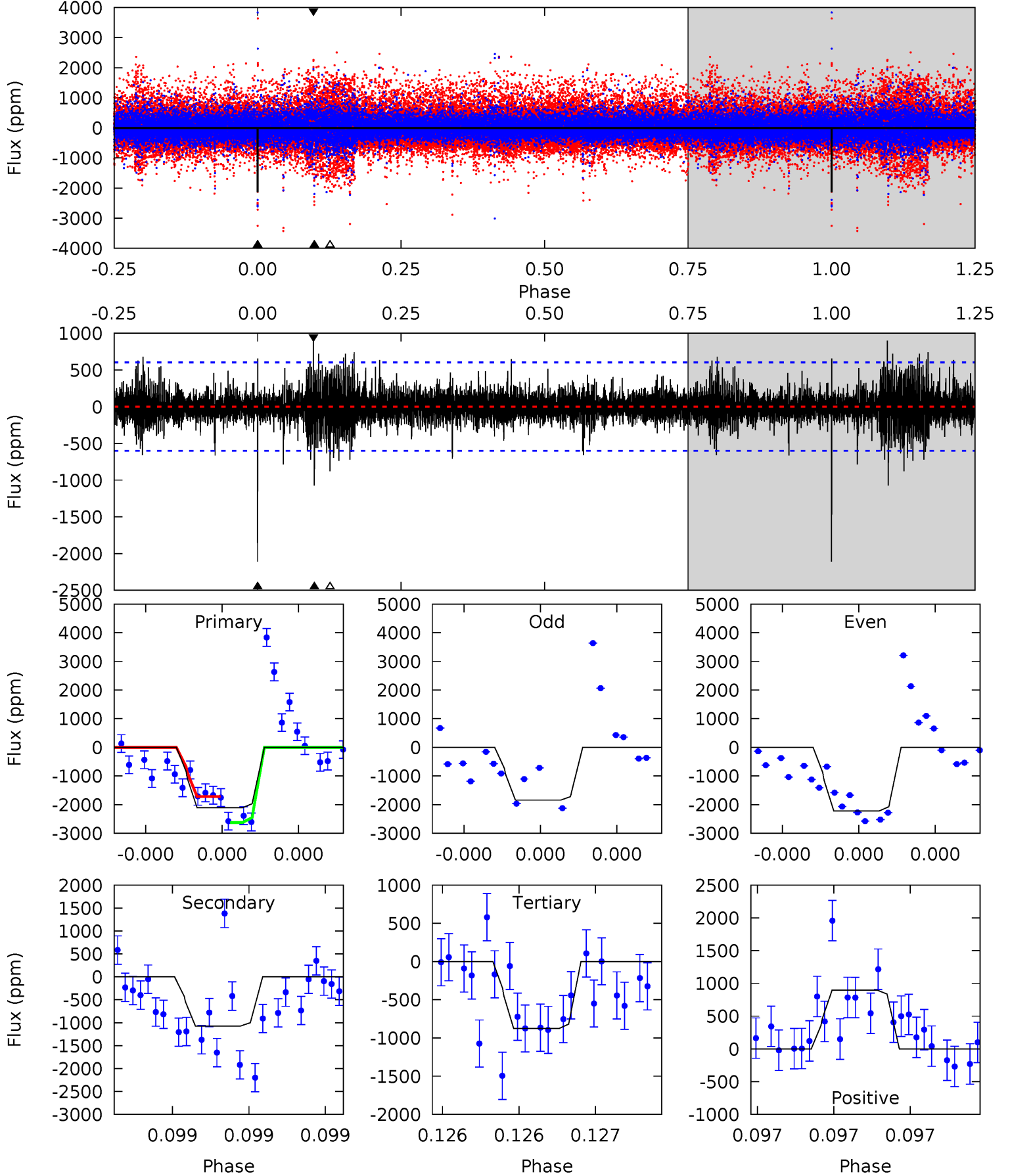
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	8.75	8.55	14.7	5.65	3.59	2.06	3.38	-2.76	0.21	-5.94	0.87	1.17	0.55	1.32



Alt Model-Shift Uniqueness Test

011708843-04, $P = 385.642578$ Days, $E = 99.416744$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	10.0	8.20	8.38	5.63	3.56	1.42	11.5	11.3	1.82	1.64	1.38	1.01	0.30	4.21



Stellar Parameters For KIC 011708843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5254^{+157}_{-157}	$4.546^{+0.088}_{-0.072}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.087}_{-0.087}$	$0.693^{+0.099}_{-0.042}$	$2.458^{+0.925}_{-0.567}$
	+3%/-3%	+2%/-2%	+70%/-60%	+12%/-12%	+14%/-6%	+38%/-23%
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 011708843-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1447 ± 165	$5.05^{+4.10}_{-2.98}$	289^{+13}_{-13}	4275^{+2200}_{-795}	$26238^{+140526}_{-18163}$
Alt.	-1072 ± 107	$4.83^{+3.82}_{-3.17}$	289^{+12}_{-13}	4110^{+2587}_{-704}	$21513^{+166434}_{-14777}$

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 $A_{obs} \gg 1.0$

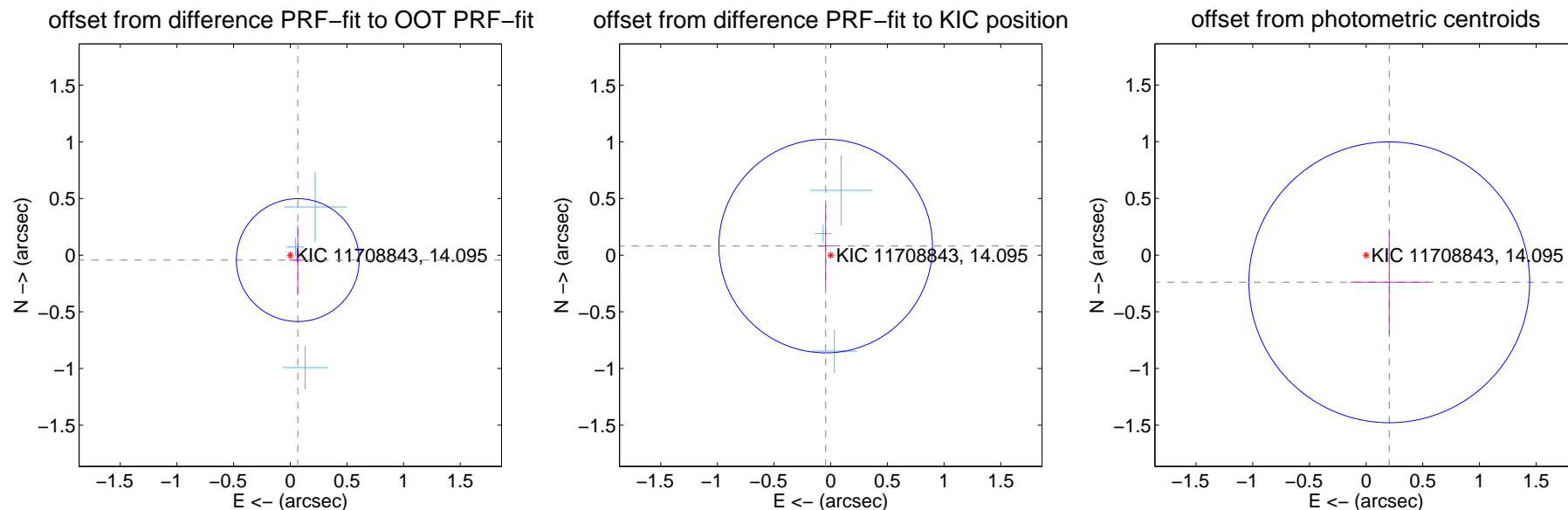
DV Centroid Data

Supplemental centroid analysis for 011708843-04. Kepler magnitude: 14.10. Transit SNR 11.26

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.079 ± 0.181	0.44	-0.066 ± 0.077	-0.043 ± 0.308
PRF-fit source offset from KIC position	0.092 ± 0.314	0.29	0.045 ± 0.071	0.080 ± 0.364
photometric centroid source offset	0.31 ± 0.41	0.76	-0.20 ± 0.34	-0.24 ± 0.46

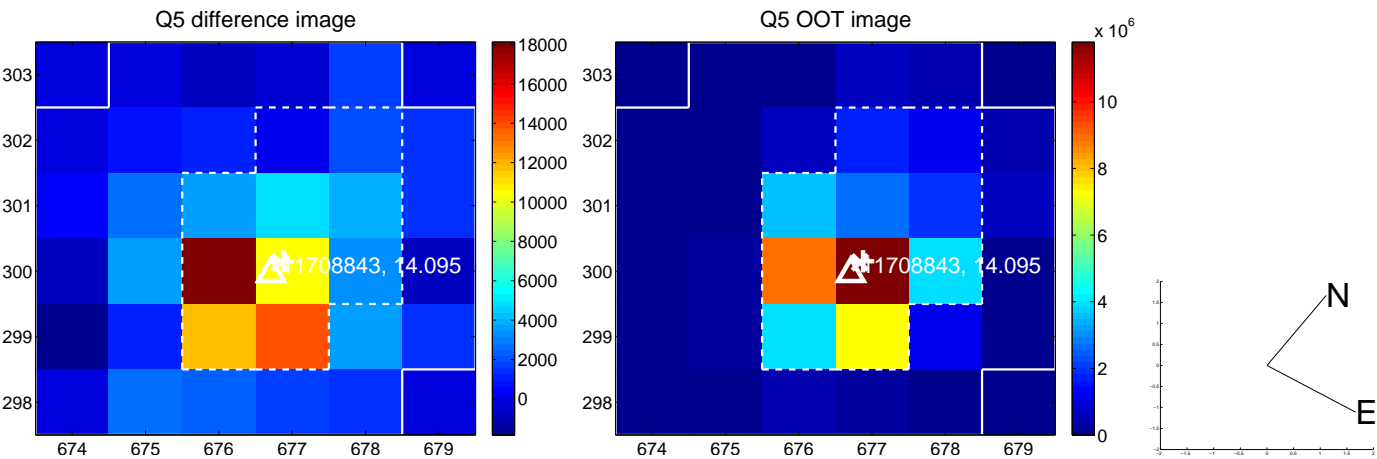


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

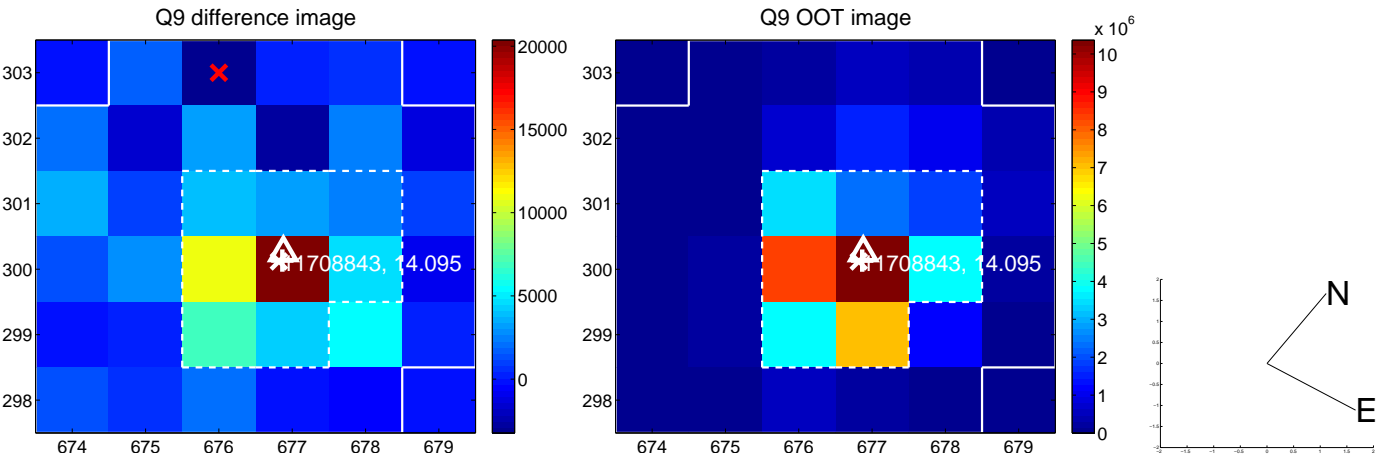
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



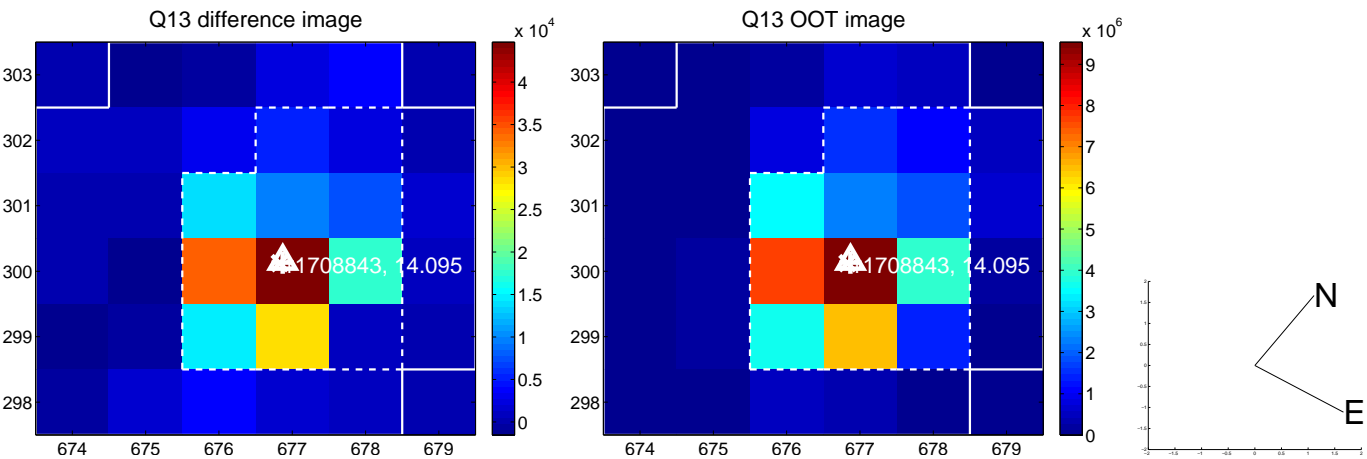
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



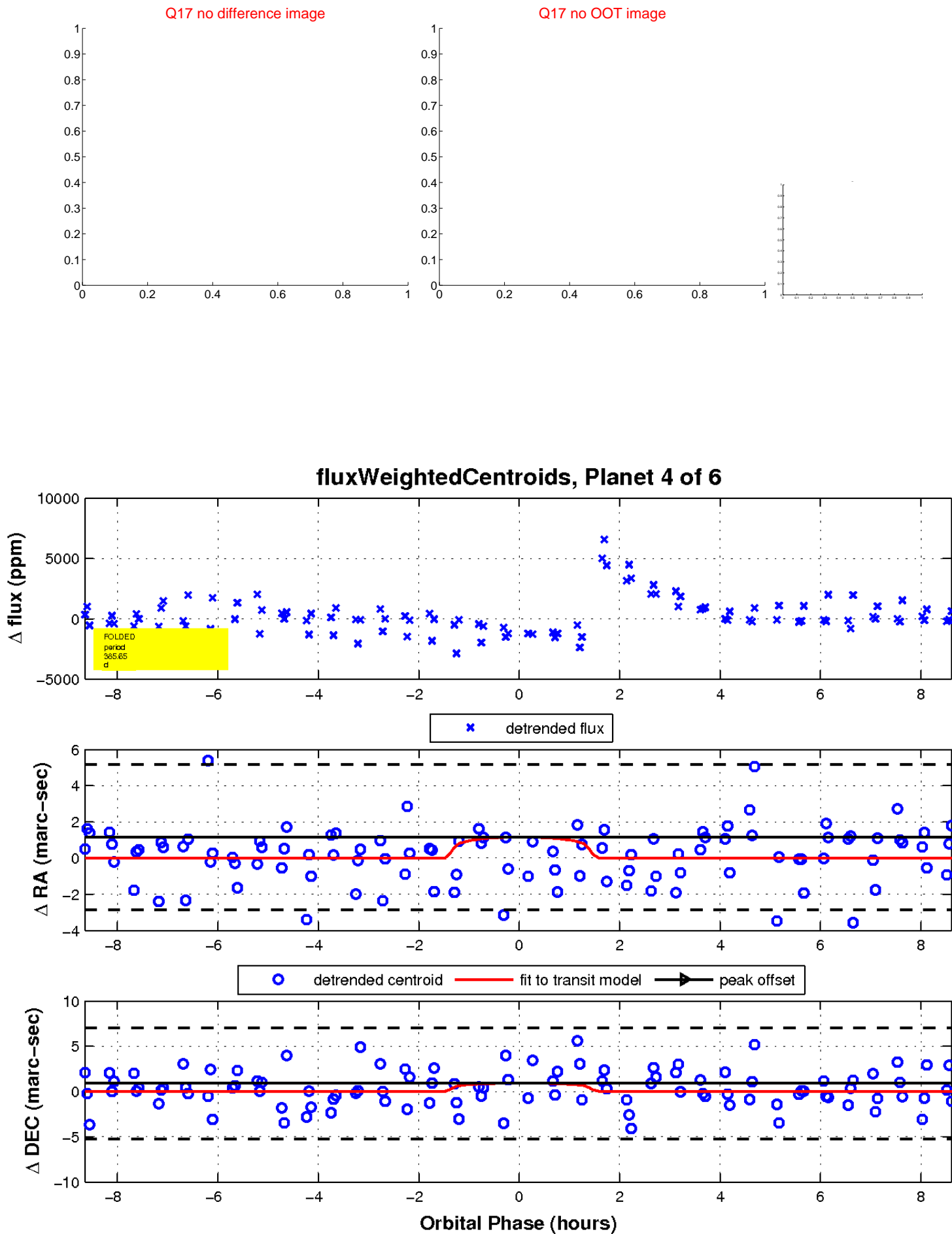
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

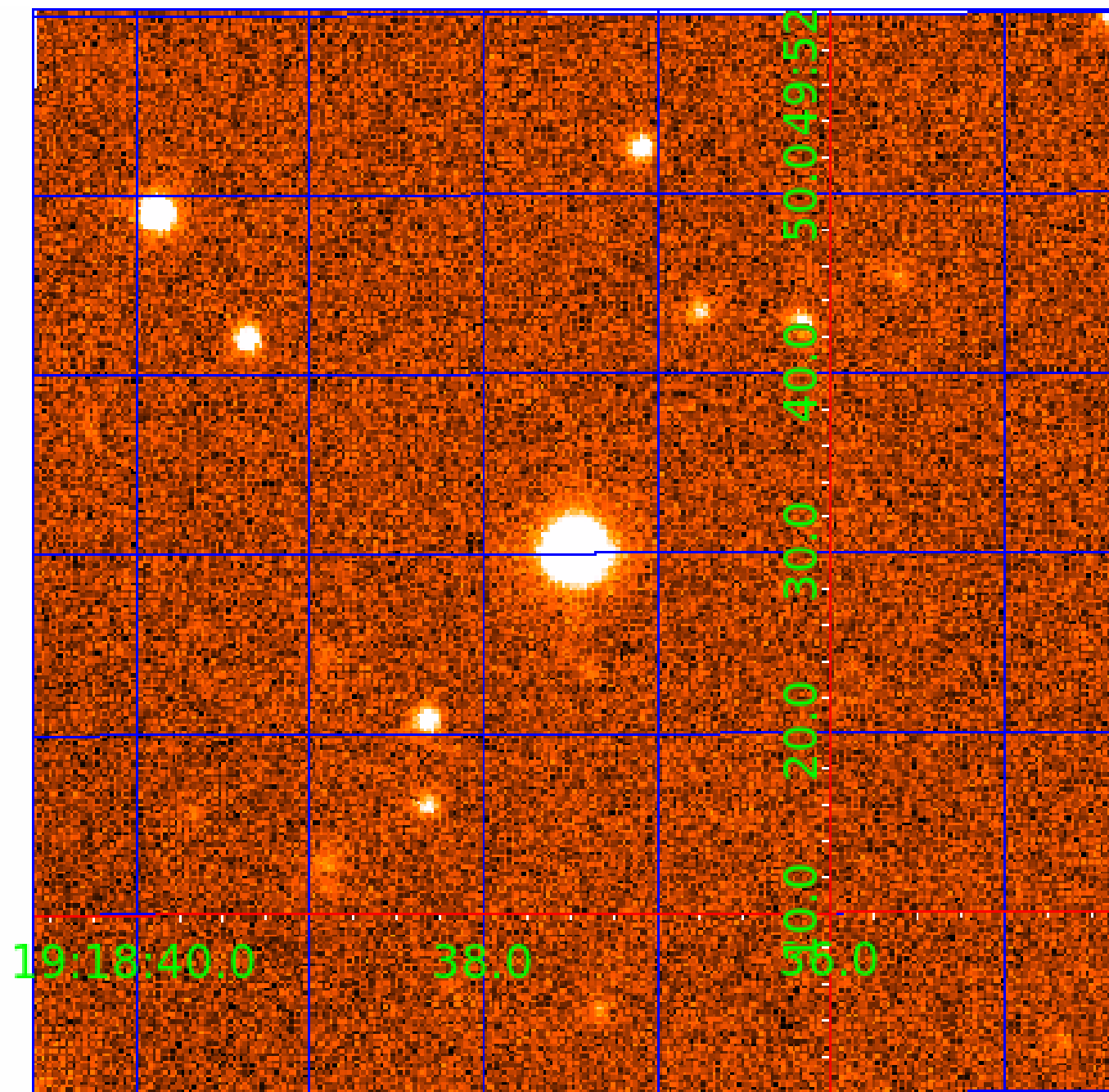


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011708843

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})
011708843-01	OBS	No	429.045786	192.833750	2367.9	4.387	17.0	9.3	0.73	5254	3.73	0.38
011708843-02	OBS	No	635.028100	233.946933	1846.0	3.464	16.9	7.4	0.73	5254	3.10	0.23
011708843-03	OBS	No	376.596986	464.913875	1741.1	2.631	19.0	6.3	0.73	5254	3.16	0.45
011708843-04	OBS	No	385.645675	485.064526	3261.7	2.948	14.8	11.3	0.73	5254	4.13	0.44
011708843-05	OBS	No	370.653495	423.311350	1895.7	4.723	18.5	6.3	0.73	5254	3.28	0.46
011708843-06	OBS	No	432.256968	273.494588	2344.1	11.723	20.6	6.6	0.73	5254	3.92	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708843-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
011708843-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011708843-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
011708843-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-06	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

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

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

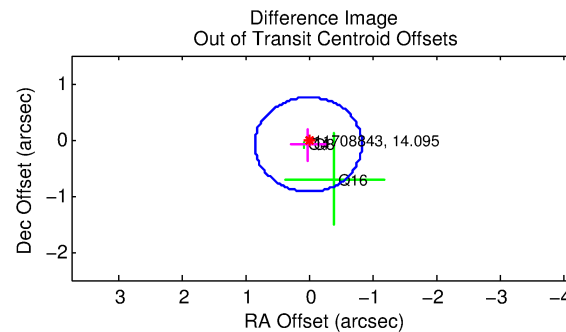
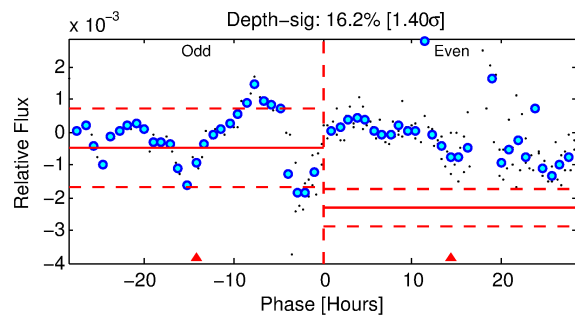
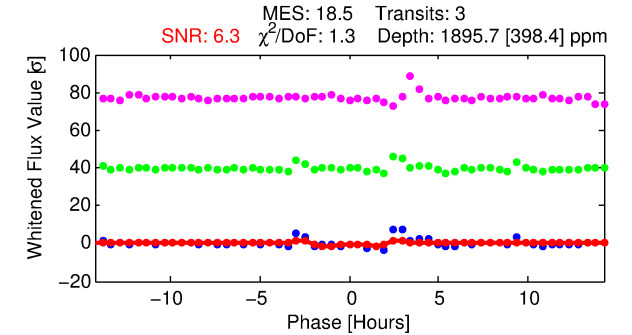
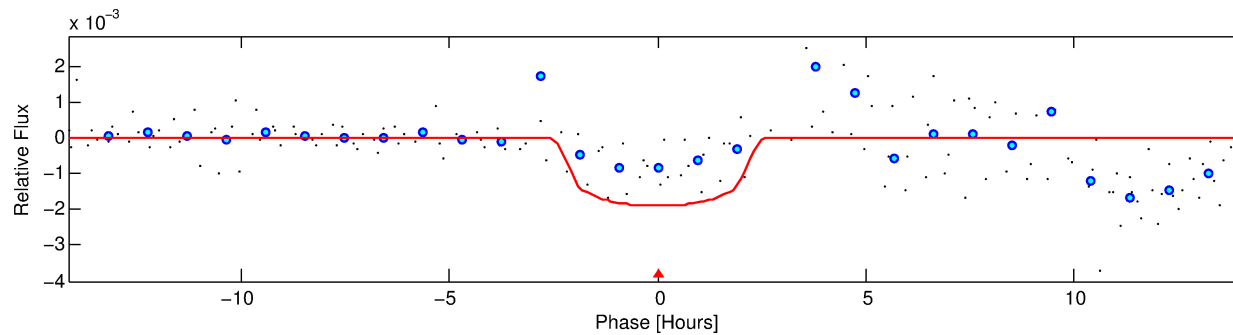
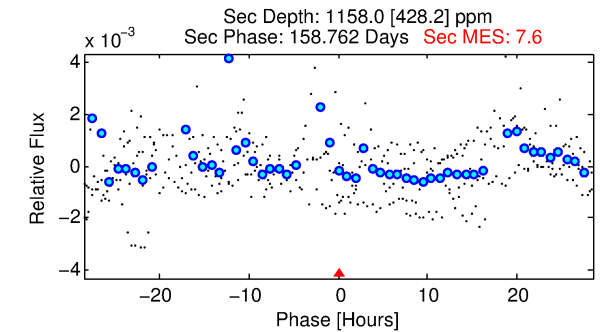
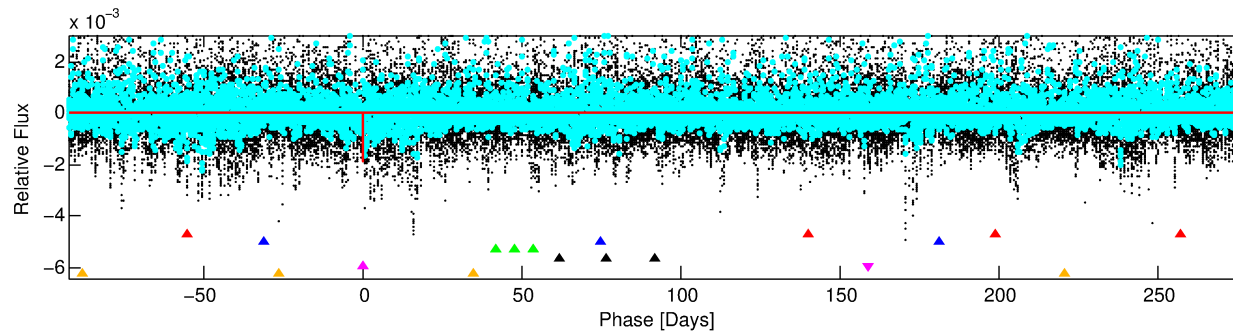
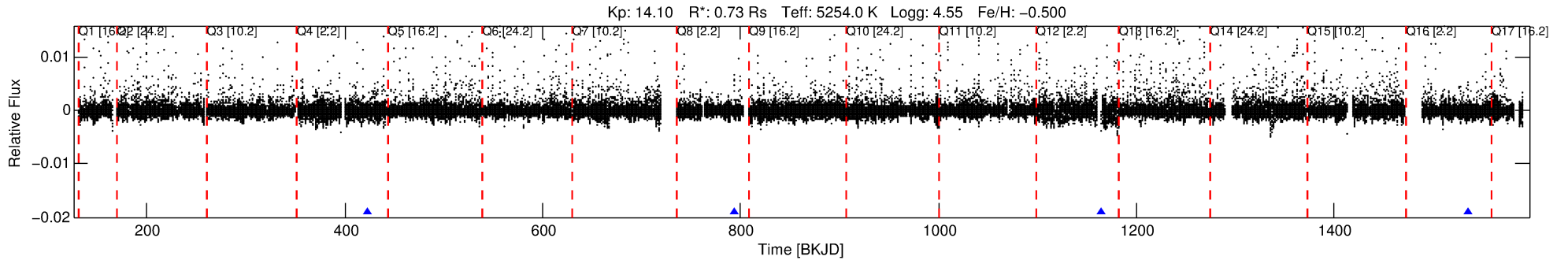
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708843-05

No Significant Match Found

DV One-Page Summary

KIC: 11708843 Candidate: 5 of 6 Period: 370.653 d



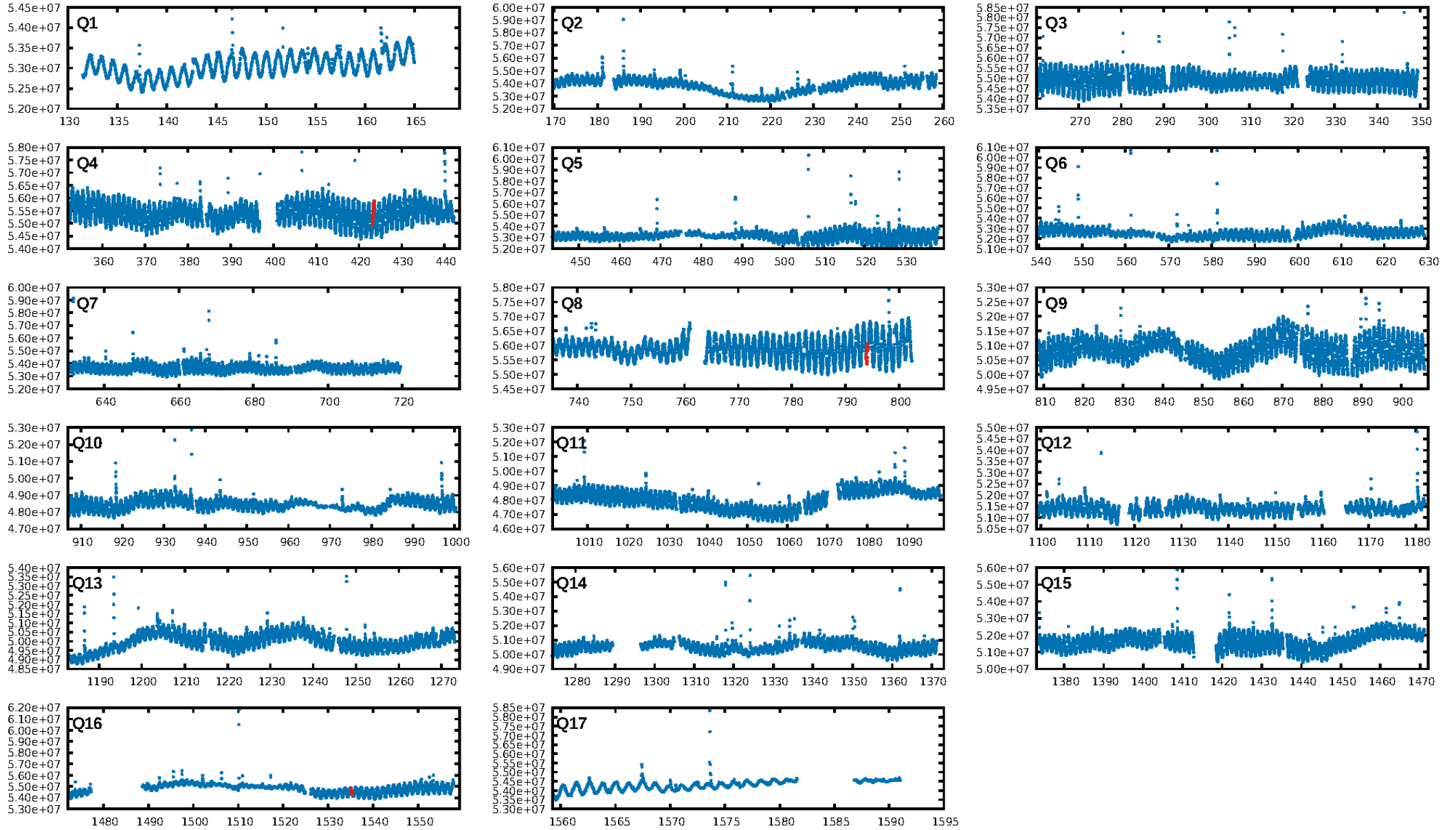
DV Fit Results:

Period = 370.65350 [0.00303] d
Epoch = 423.3114 [0.0065] BKJD
Rp/R* = 0.0409 [0.0342]
a/R* = 533.27 [1710.88]
b = 0.54 [4.25]
Seff = 0.46 [0.09]
Teq = 210 [10] K
Rp = 3.28 [2.77] Re
a = 0.8937 [0.0928] AU
Ag = 47331.28 [81419.47] [0.58σ]
Teffp = 4794 [2058] K [2.23σ]

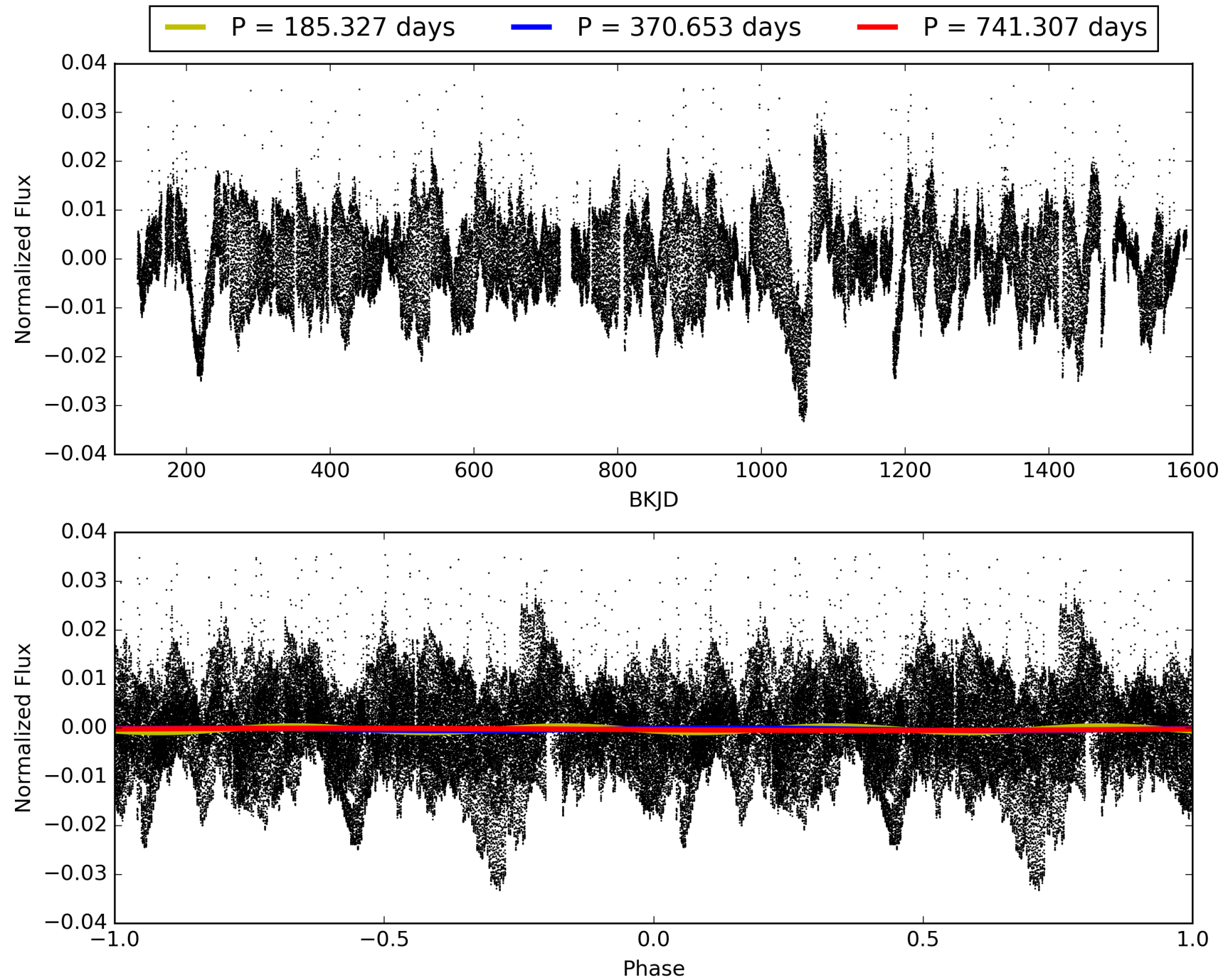
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [26.39σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 77.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.09351
Centroid-sig: 11.2%
Centroid-so: 0.372 arcsec [0.91σ]
OotOffset-rm: 0.091 arcsec [0.32σ]
KicOffset-rm: 0.109 arcsec [0.40σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 011708843-05, PDC Light Curves

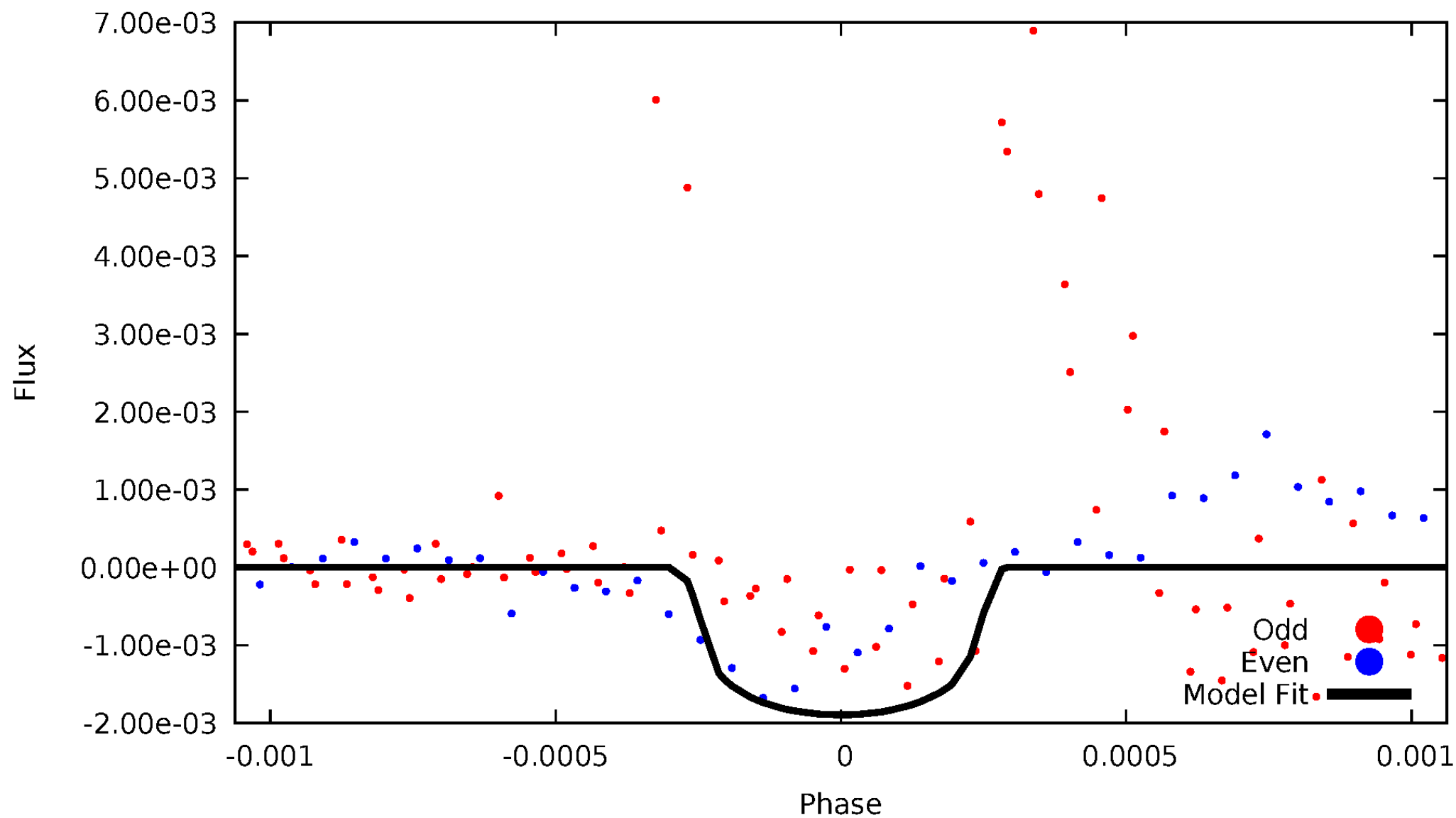


TCE 011708843-05



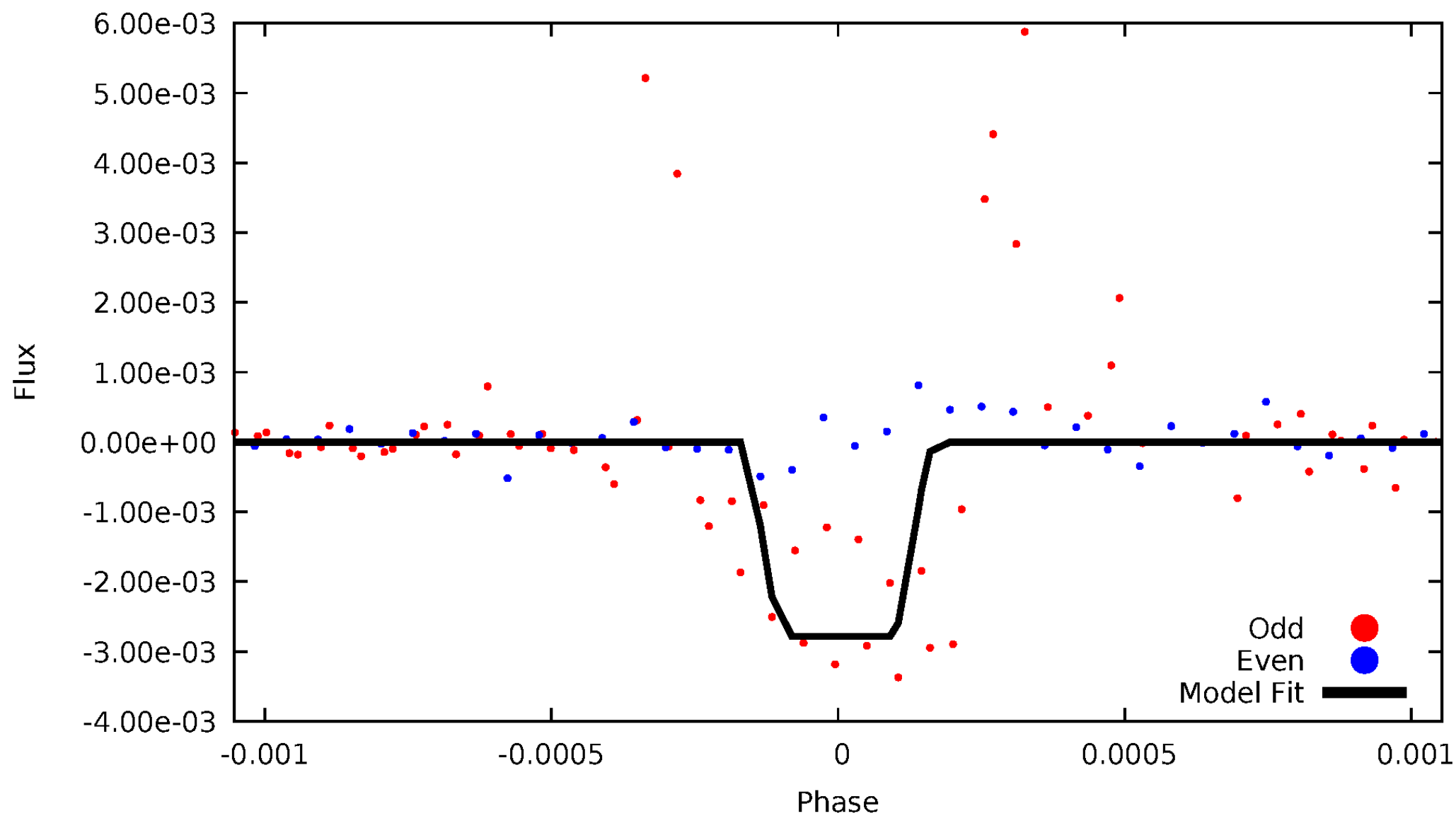
DV Odd/Even

TCE 011708843-05



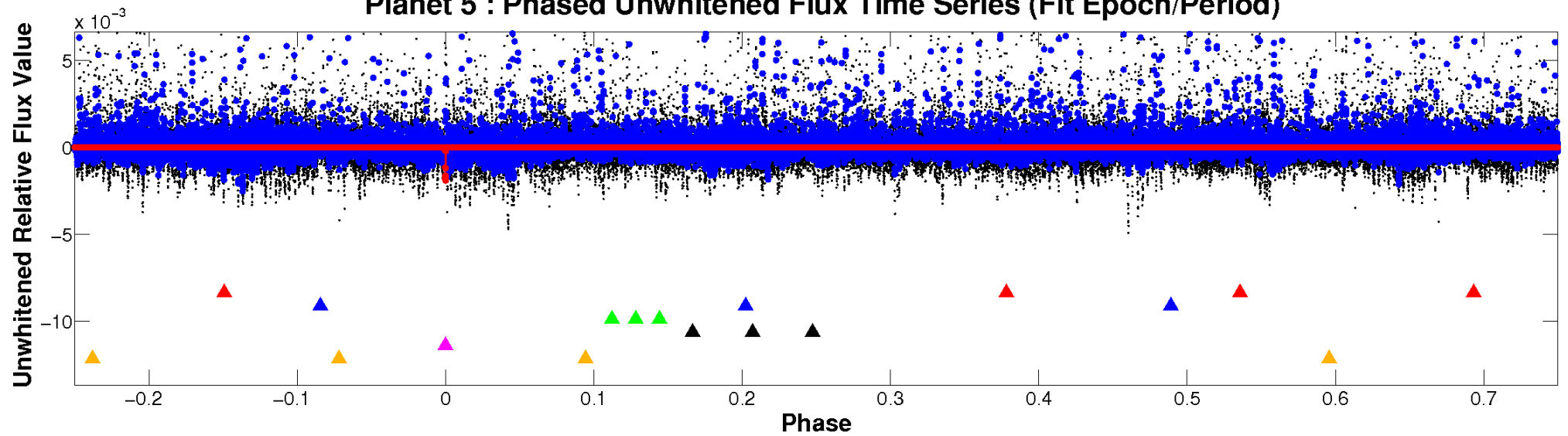
ALT Odd/Even

TCE 011708843-05

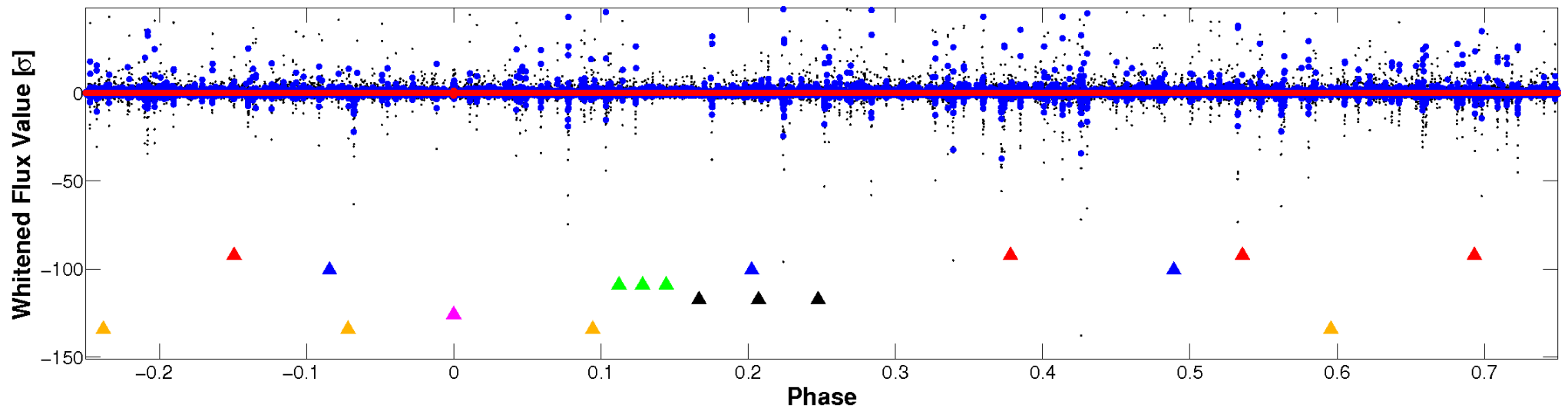


Non-Whitened Vs. Whitened Light Curve

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

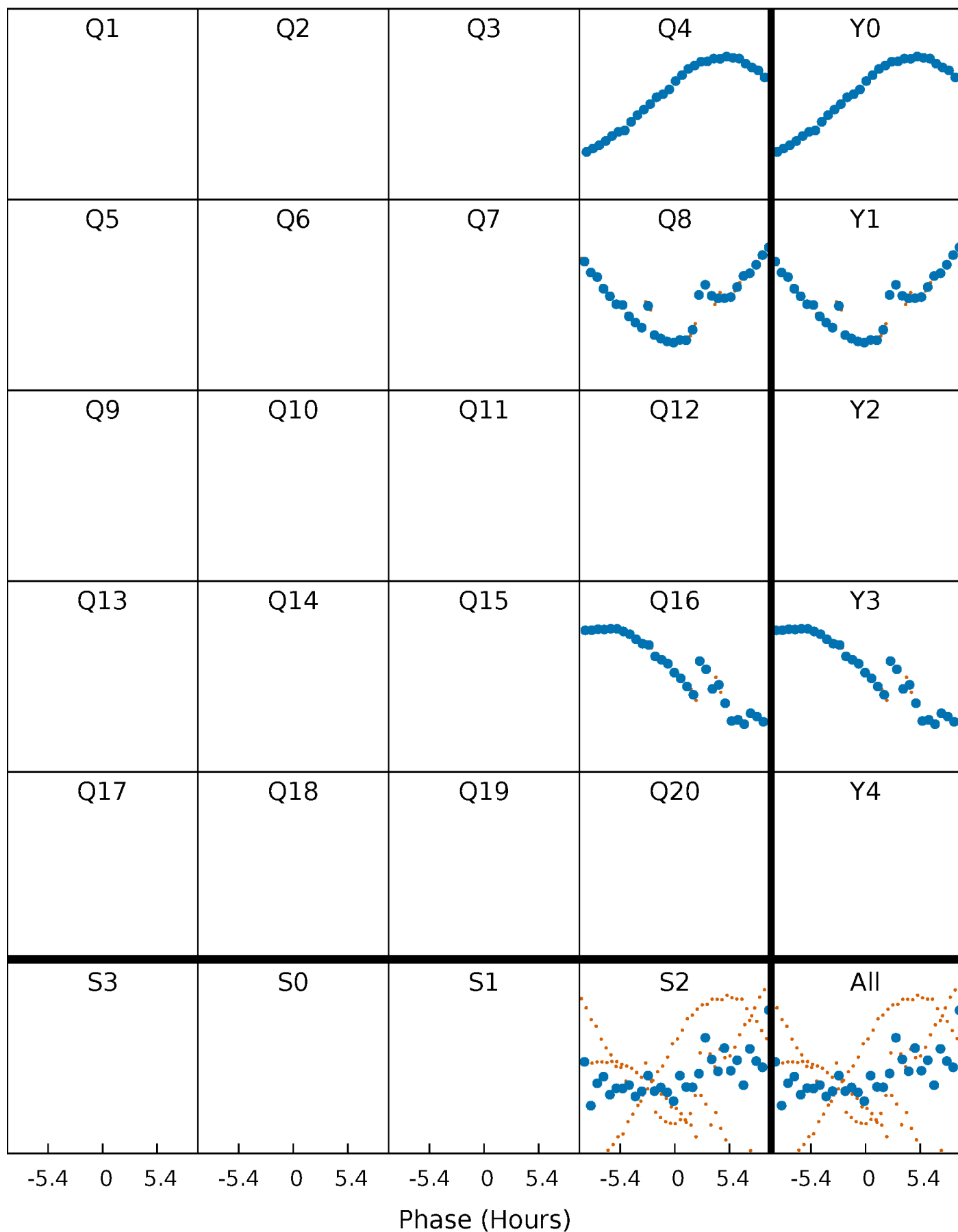


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



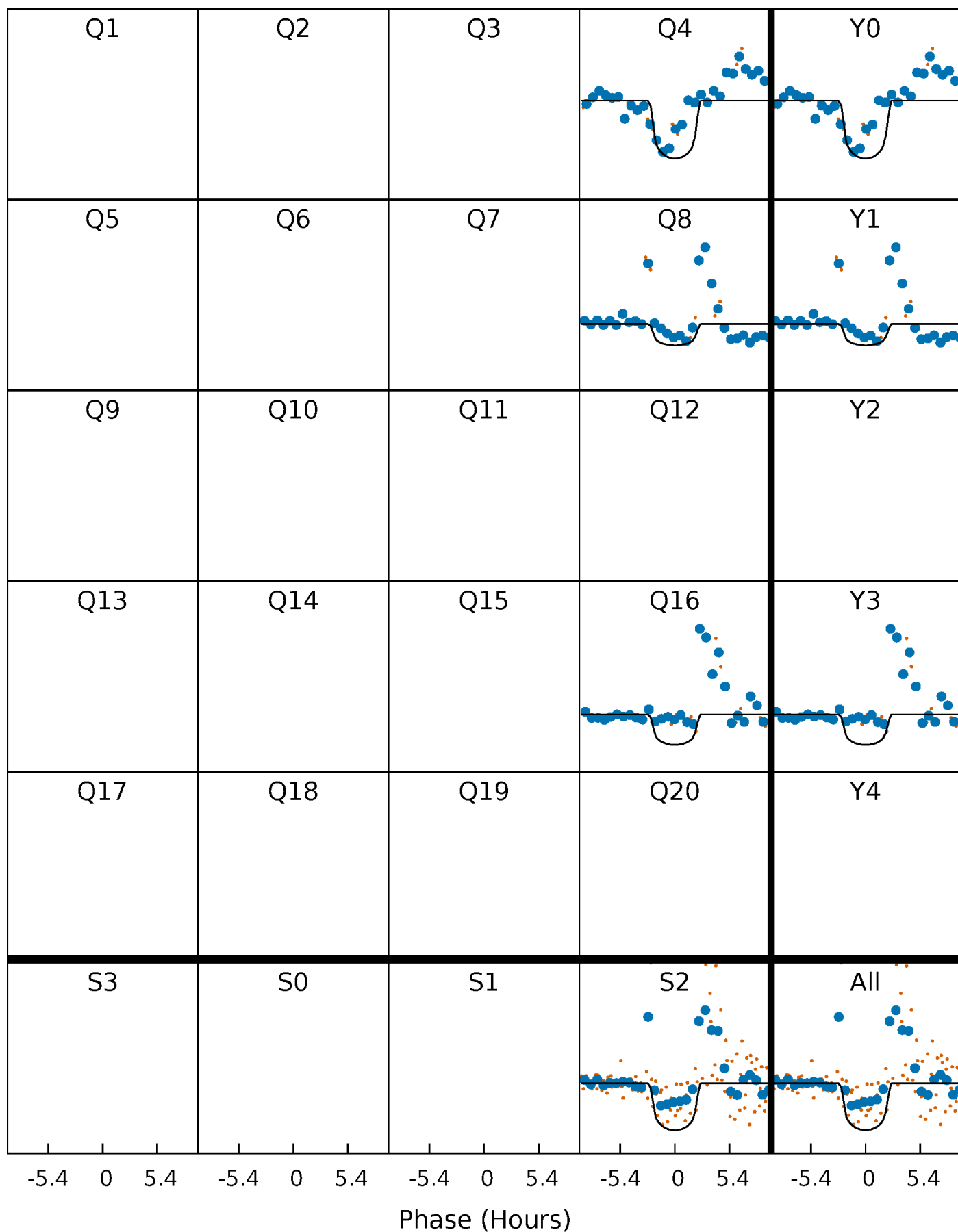
PDC Quarter-Phased Transit Curves

TCE 011708843-05 P=370.653495 Days $T_0=423.311351$ (BKJD)



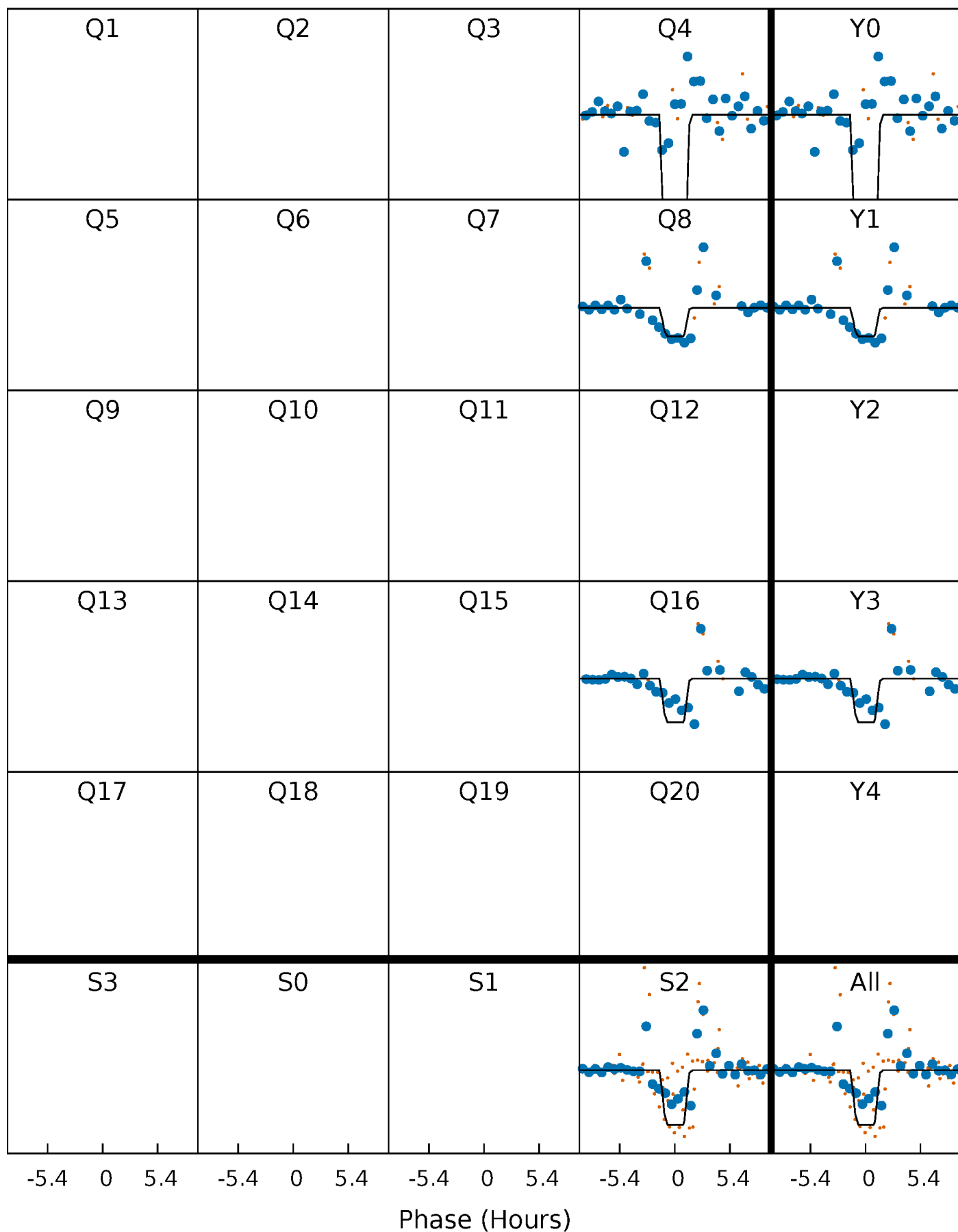
DV Quarter-Phased Transit Curves

TCE 011708843-05 $P=370.653495$ Days $T_0=423.311351$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

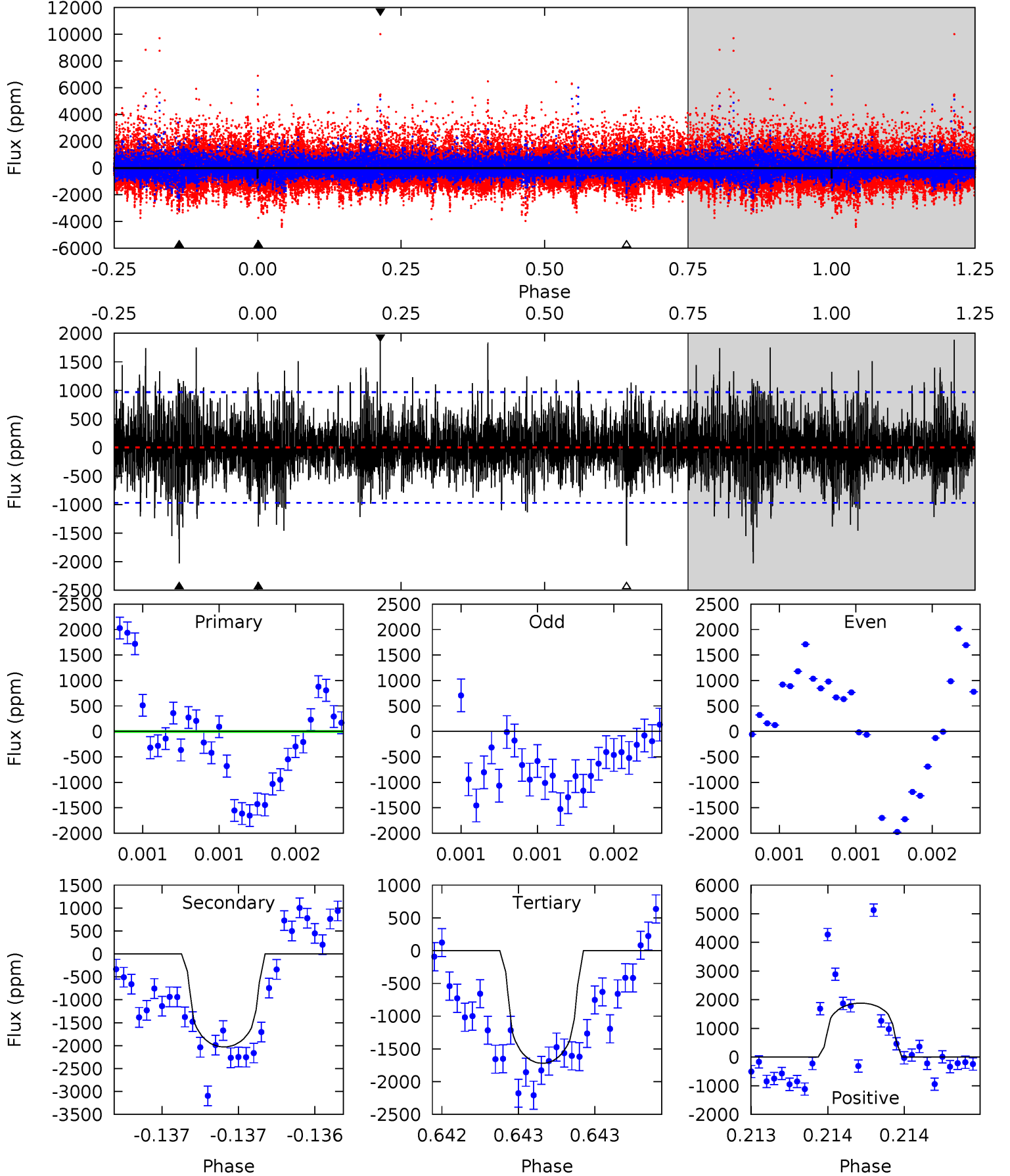
TCE 011708843-05 $P=370.657967$ Days $T_0=423.311130$ (BKJD)



DV Model-Shift Uniqueness Test

011708843-05, P = 370.653495 Days, E = 52.657856 Days

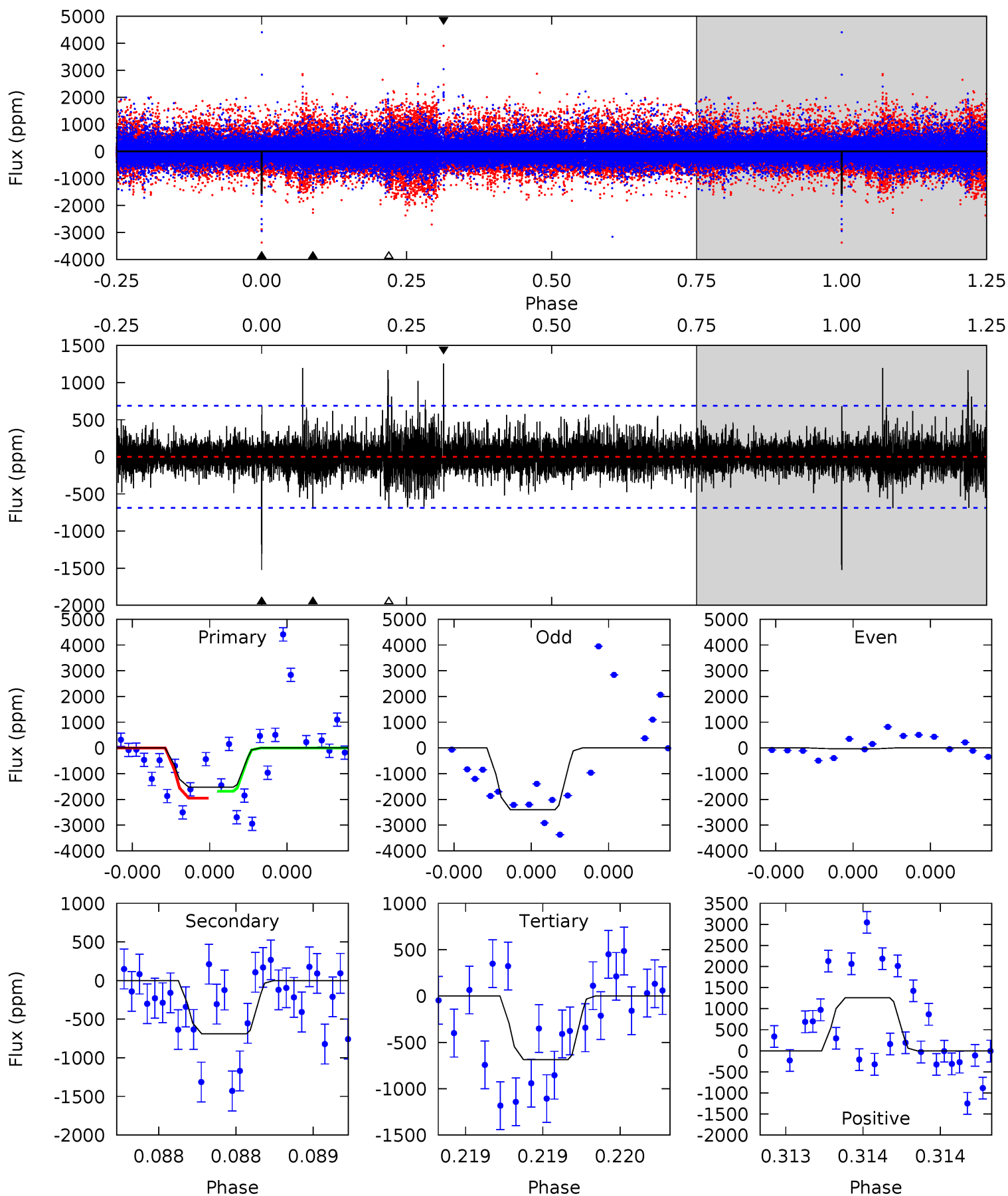
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.35	11.6	9.86	10.8	5.56	3.46	2.21	-5.51	-6.44	1.77	0.84	0.75	0.87	0.48	0.52



Alt Model-Shift Uniqueness Test

011708843-05, P = 370.657967 Days, E = 52.653163 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	5.68	5.63	10.3	5.66	3.62	1.24	6.90	2.20	0.04	-4.66	9.56	0.97	0.45	1.13



Stellar Parameters For KIC 011708843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5254^{+157}_{-157}	$4.546^{+0.088}_{-0.072}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.087}_{-0.087}$	$0.693^{+0.099}_{-0.042}$	$2.458^{+0.925}_{-0.567}$
	+3%/-3%	+2%/-2%	+70%/-60%	+12%/-12%	+14%/-6%	+38%/-23%
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 011708843-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2029 ± 174	$3.69^{+2.63}_{-2.09}$	293^{+12}_{-12}	5215^{+2884}_{-1055}	$66029^{+280915}_{-43802}$
Alt.	-690 ± 122	$4.34^{+2.90}_{-2.47}$	293^{+13}_{-13}	3968^{+1581}_{-609}	16104^{+71154}_{-10108}

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

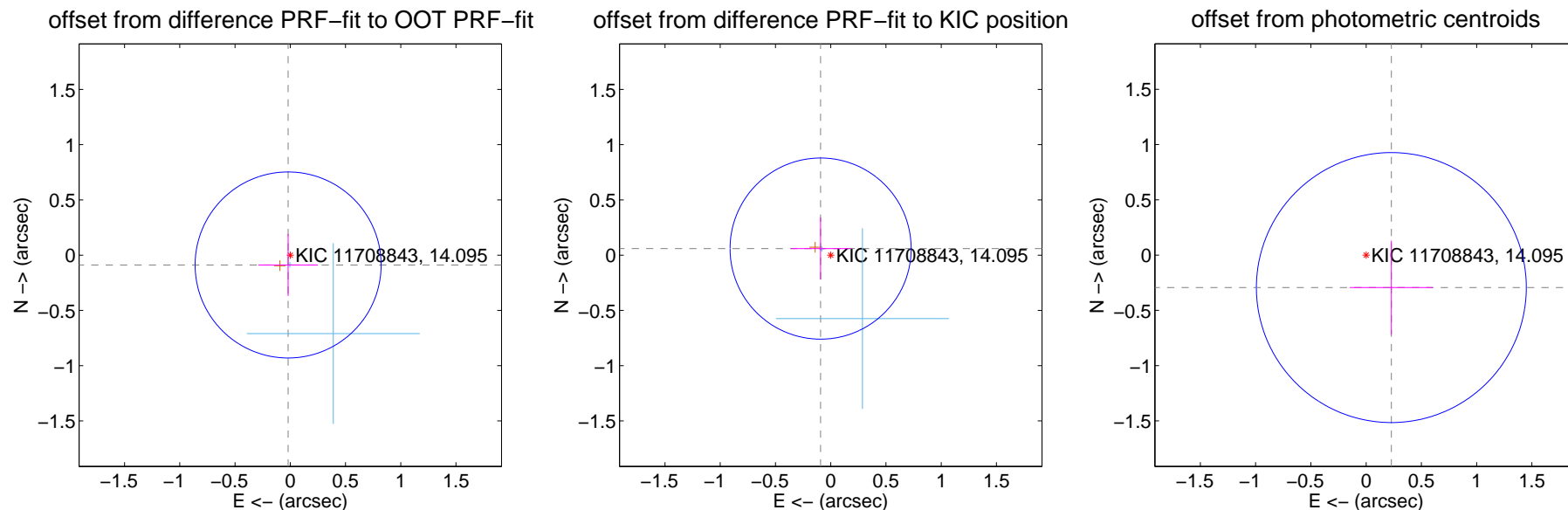
DV Centroid Data

Supplemental centroid analysis for 011708843-05. Kepler magnitude: 14.10. Transit SNR 6.28

There are 2 quarters with good PRF difference image offsets

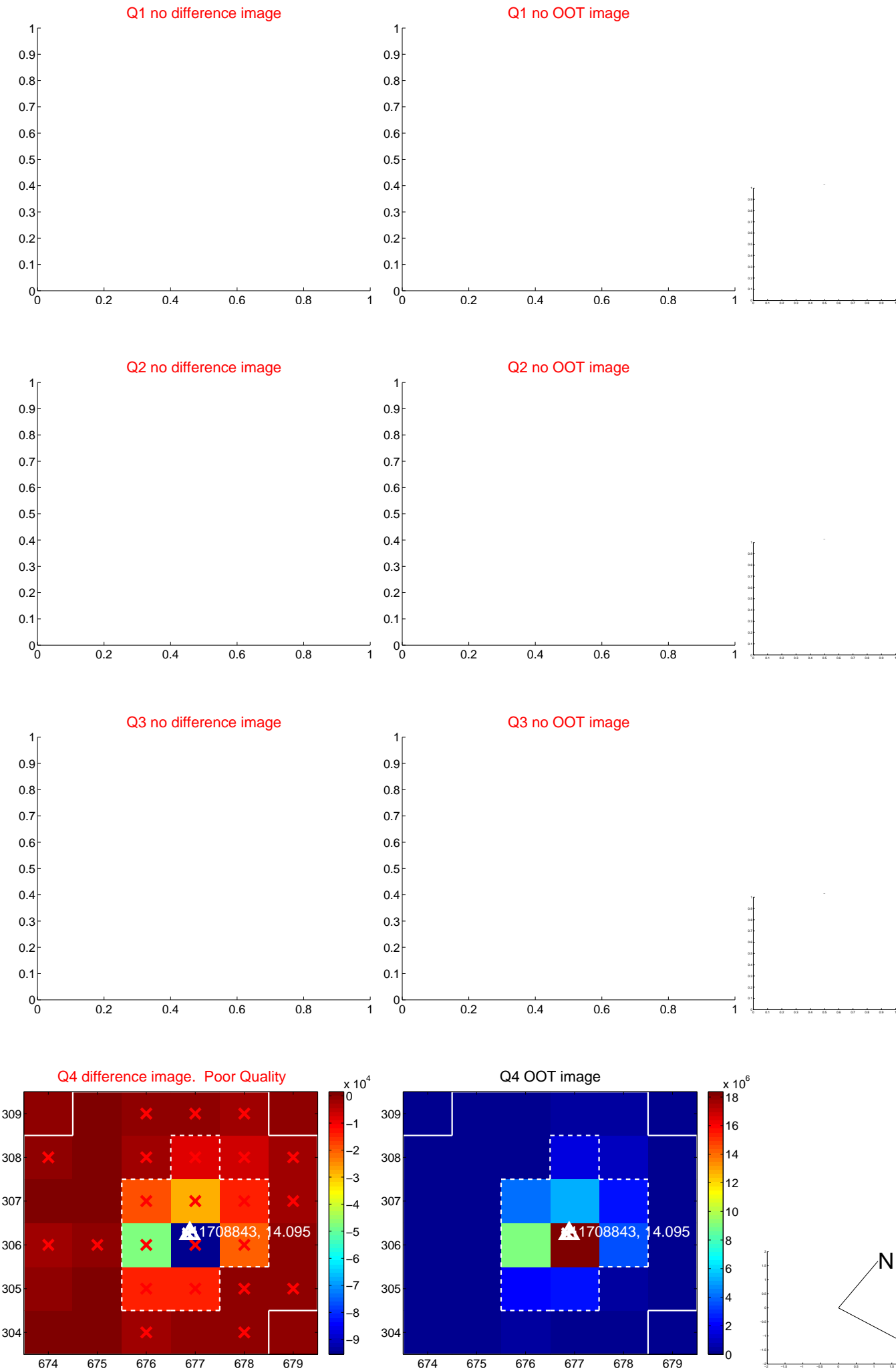
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.281	0.32	0.019 ± 0.270	-0.089 ± 0.281
PRF-fit source offset from KIC position	0.109 ± 0.273	0.40	0.091 ± 0.270	0.059 ± 0.281
photometric centroid source offset	0.37 ± 0.41	0.91	-0.23 ± 0.38	-0.29 ± 0.42

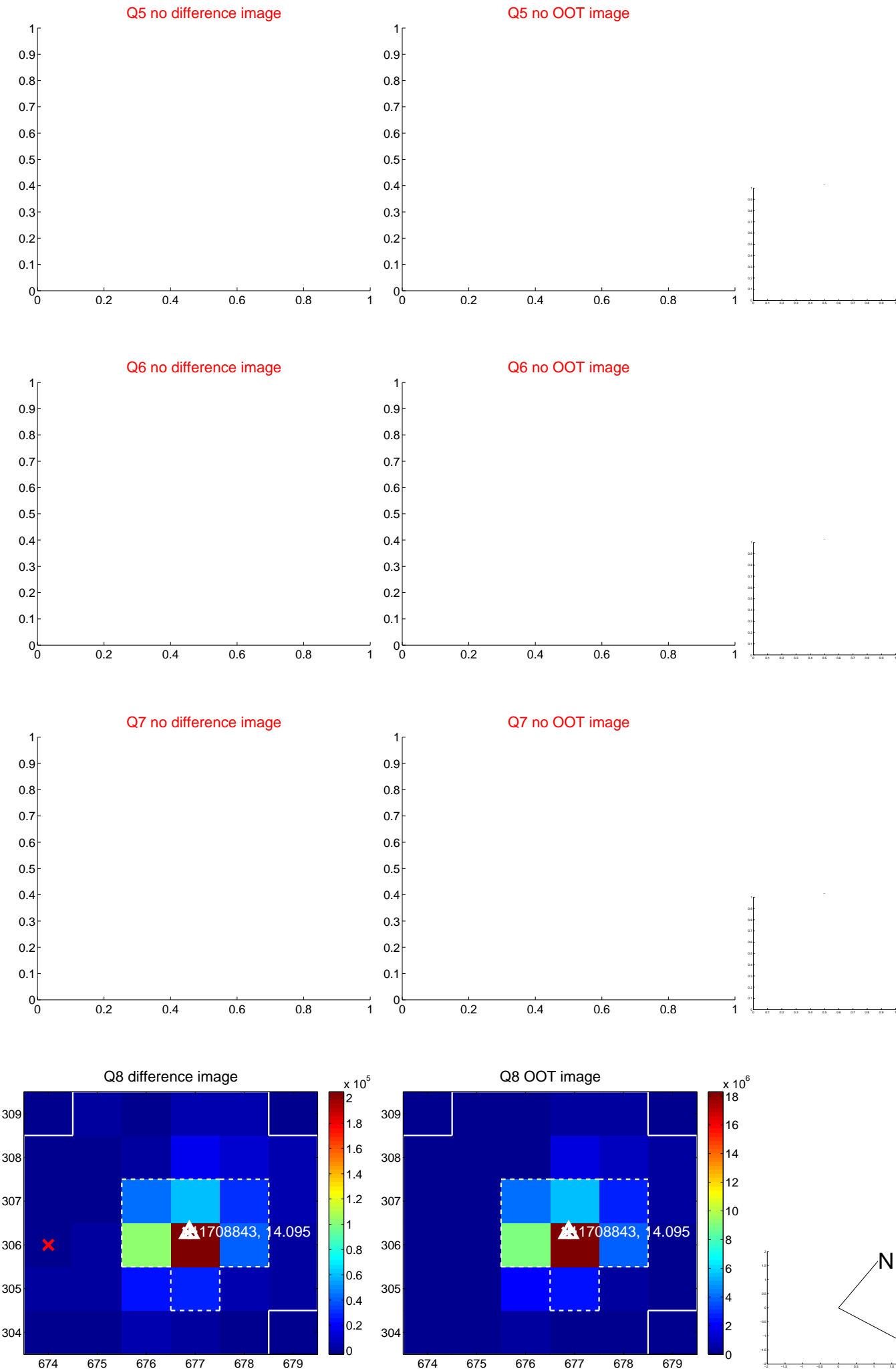


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



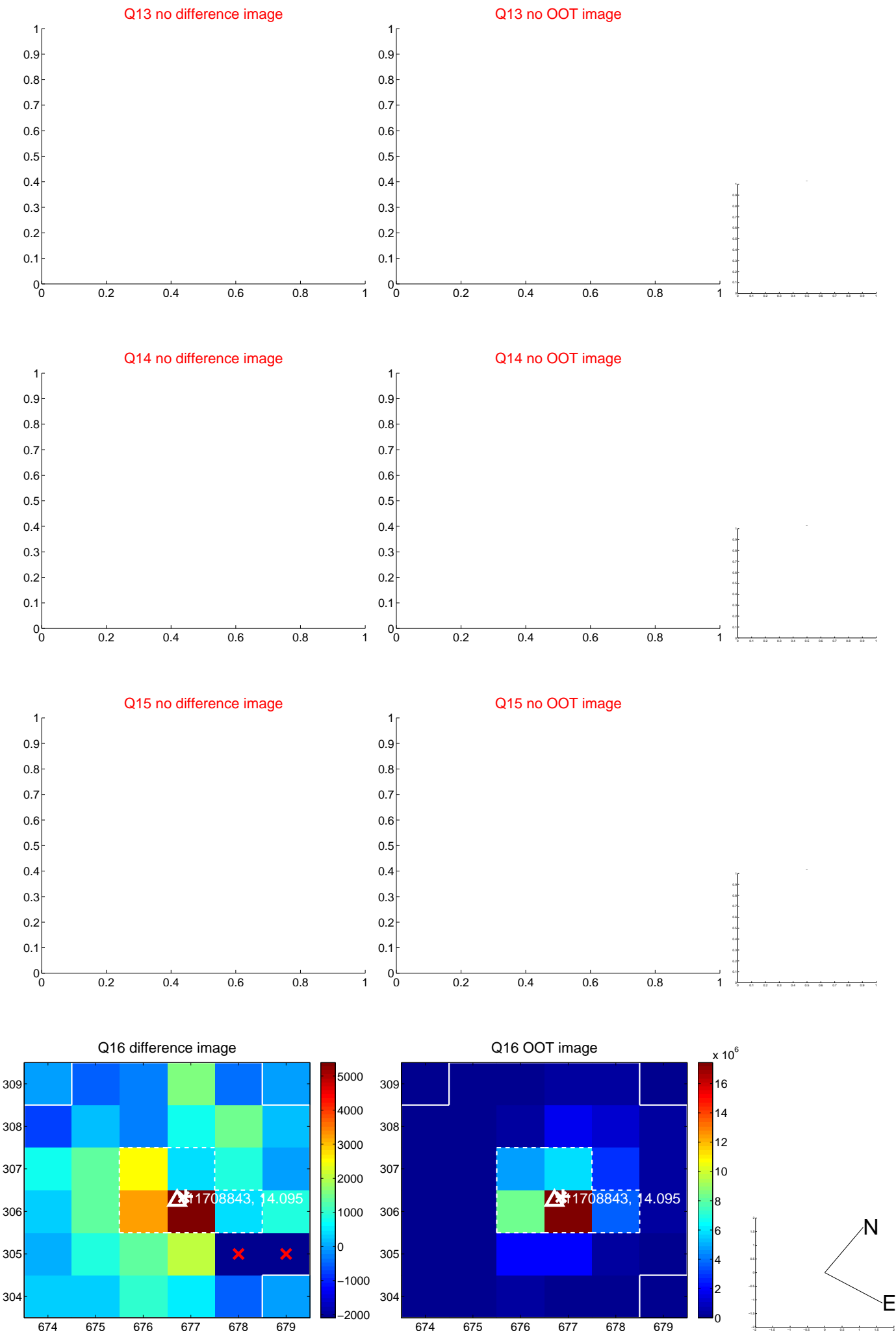
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



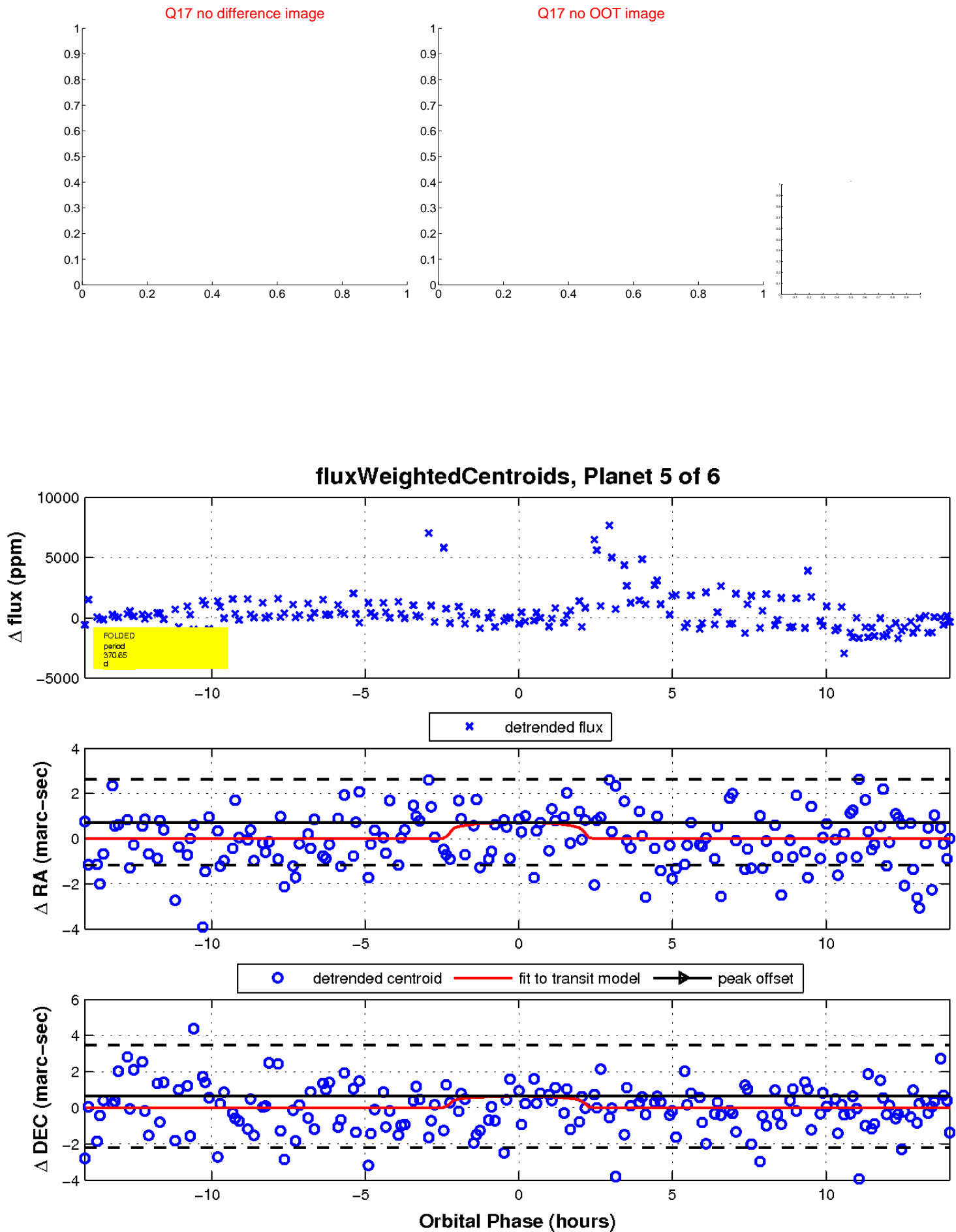
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

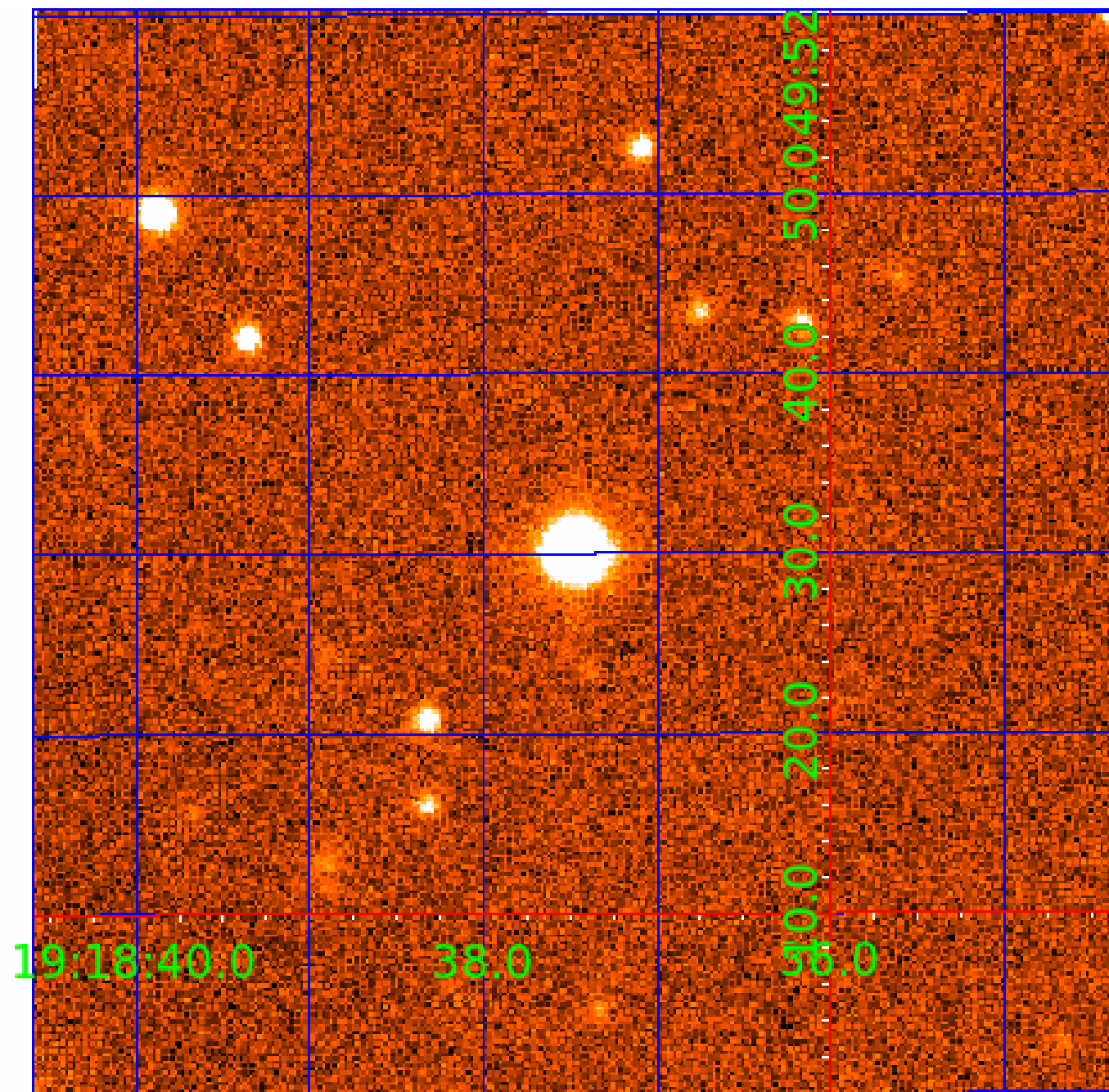


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011708843

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})
011708843-01	OBS	No	429.045786	192.833750	2367.9	4.387	17.0	9.3	0.73	5254	3.73	0.38
011708843-02	OBS	No	635.028100	233.946933	1846.0	3.464	16.9	7.4	0.73	5254	3.10	0.23
011708843-03	OBS	No	376.596986	464.913875	1741.1	2.631	19.0	6.3	0.73	5254	3.16	0.45
011708843-04	OBS	No	385.645675	485.064526	3261.7	2.948	14.8	11.3	0.73	5254	4.13	0.44
011708843-05	OBS	No	370.653495	423.311350	1895.7	4.723	18.5	6.3	0.73	5254	3.28	0.46
011708843-06	OBS	No	432.256968	273.494588	2344.1	11.723	20.6	6.6	0.73	5254	3.92	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708843-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—CENT_FEW_DIFFS
011708843-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011708843-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
011708843-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011708843-06	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

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

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

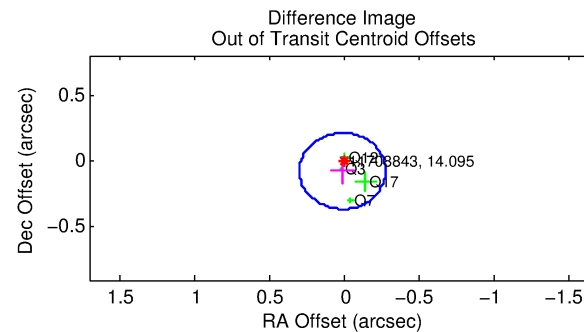
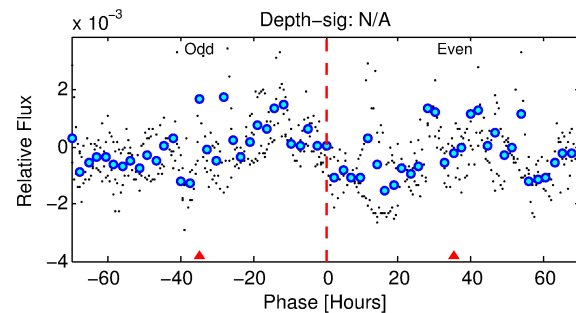
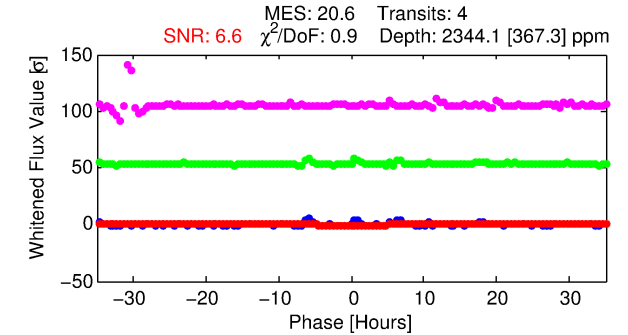
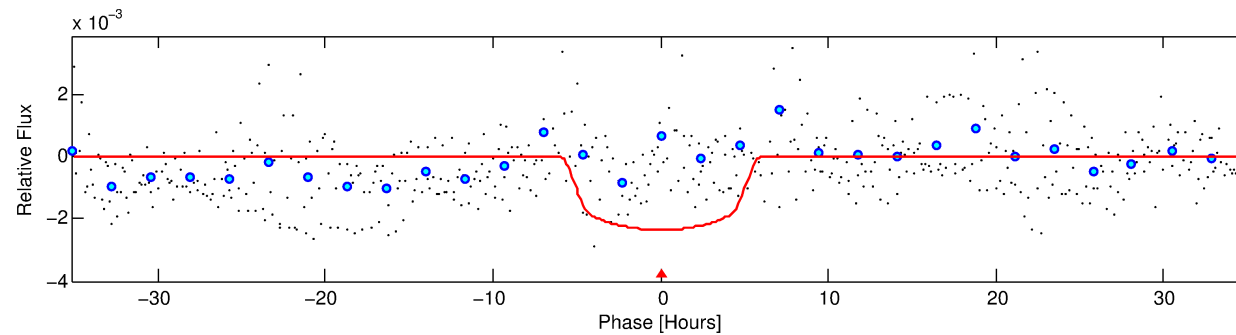
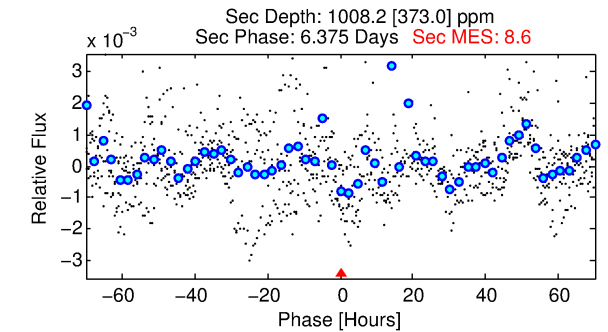
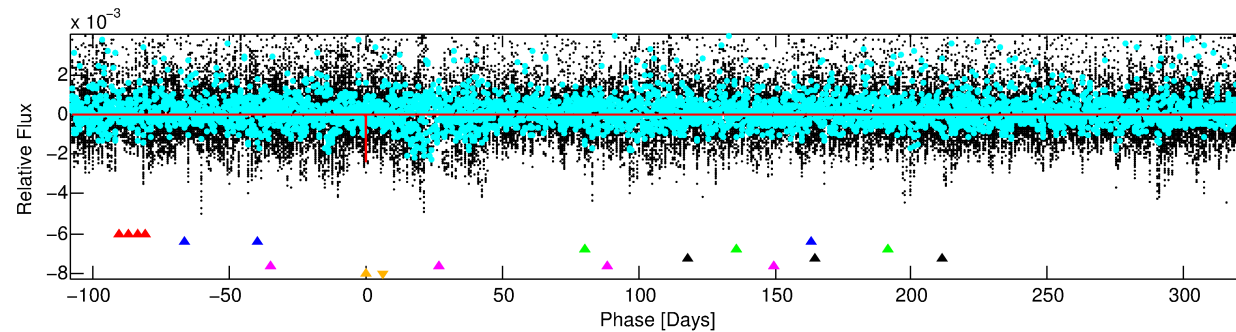
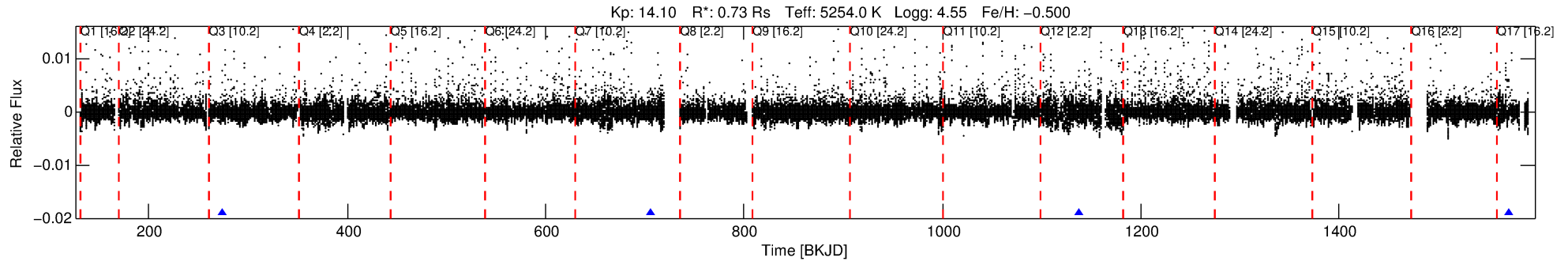
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708843-06

No Significant Match Found

DV One-Page Summary

KIC: 11708843 Candidate: 6 of 6 Period: 432.257 d



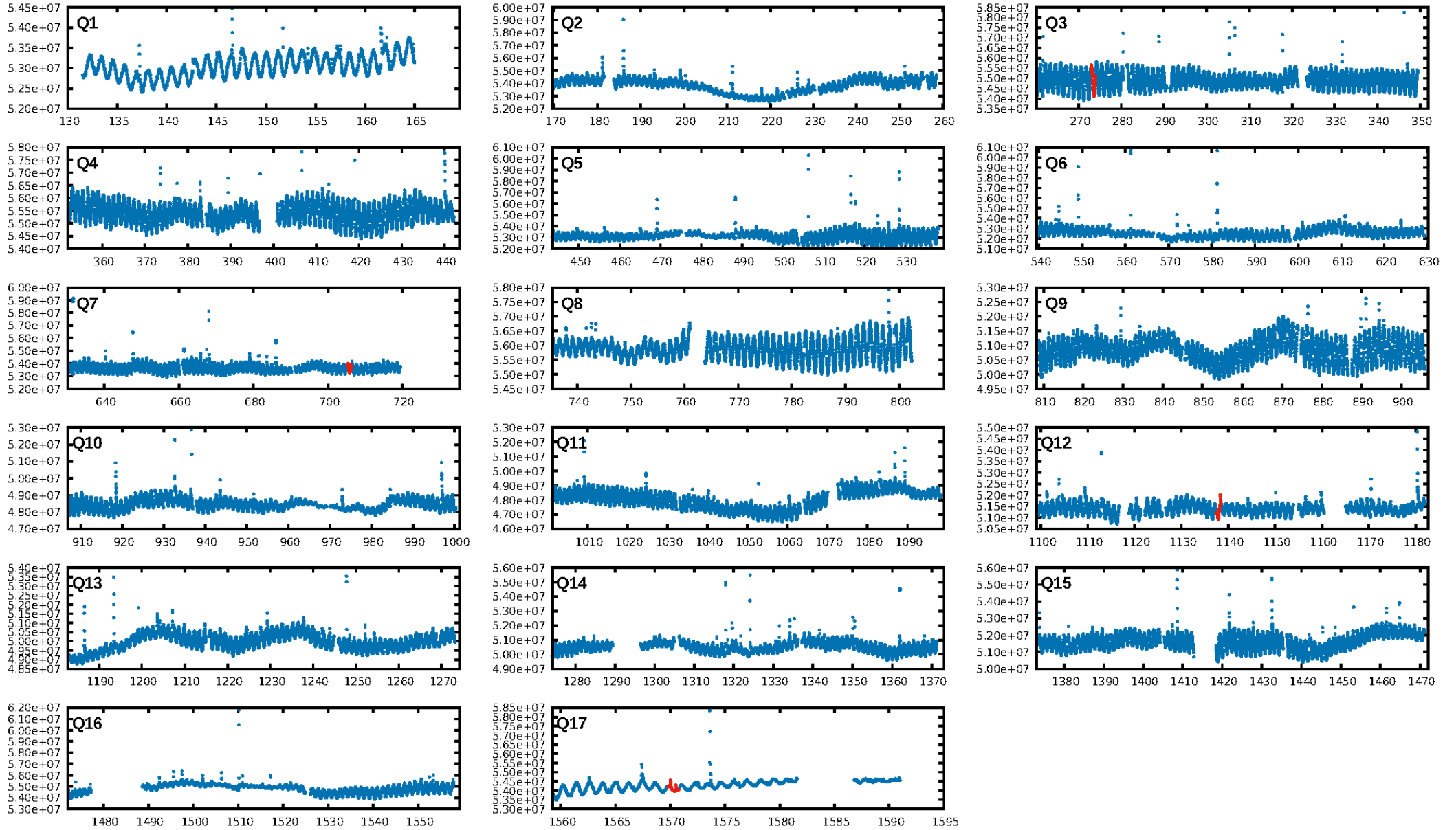
DV Fit Results:

Period = 432.25697 [0.00397] d
Epoch = 273.4946 [0.0087] BKJD
Rp/R* = 0.0489 [0.0047]
a/R* = 197.45 [32.12]
b = 0.78 [0.08]
Seff = 0.38 [0.07]
Teff = 200 [10] K
Rp = 3.92 [0.60] Re
a = 0.9902 [0.1029] AU
Ag = 35356.19 [15724.86] [2.25σ]
Teffp = 4234 [458] K [8.80σ]

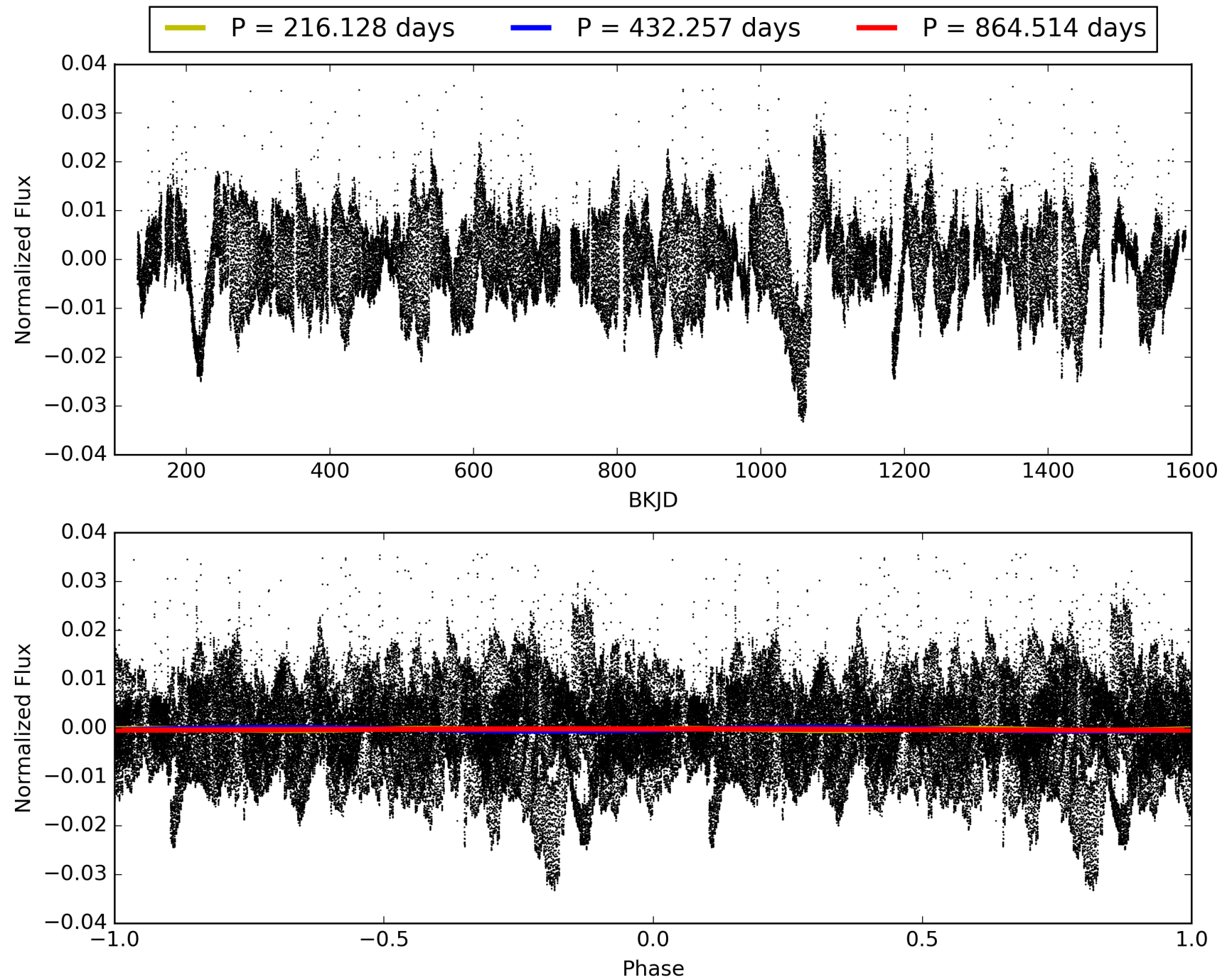
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.16σ]
LongPeriod-sig: 100.0% [398.11σ]
ModelChiSquare2-sig: 5.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 4.19
Centroid-sig: 46.4%
Centroid-so: 0.332 arcsec [1.89σ]
OotOffset-rm: 0.077 arcsec [0.80σ]
OotOffset-st: 0/2/1/1 [4]
KicOffset-rm: 0.171 arcsec [1.57σ]
KicOffset-st: 0/2/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 011708843-06, PDC Light Curves

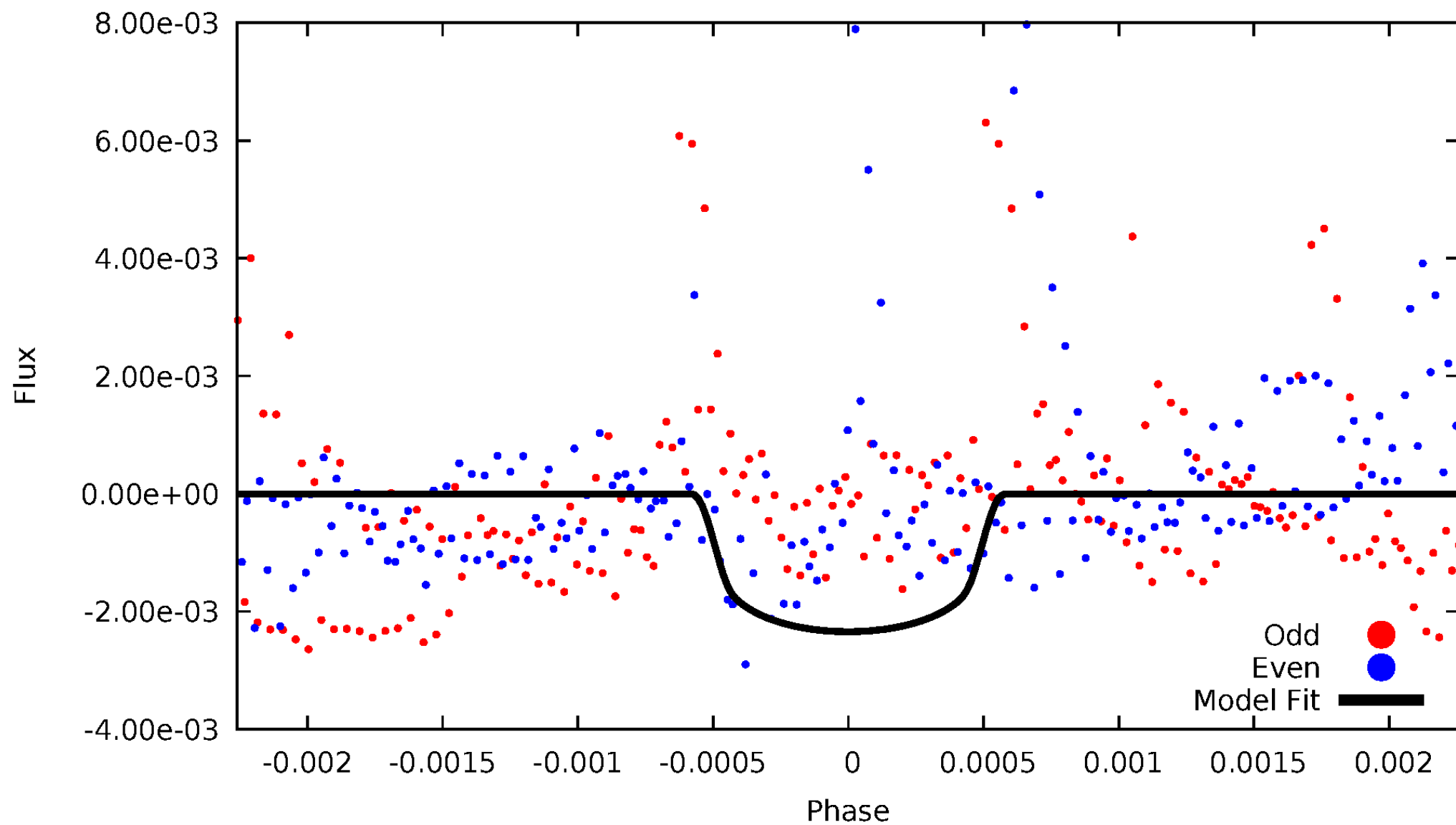


TCE 011708843-06



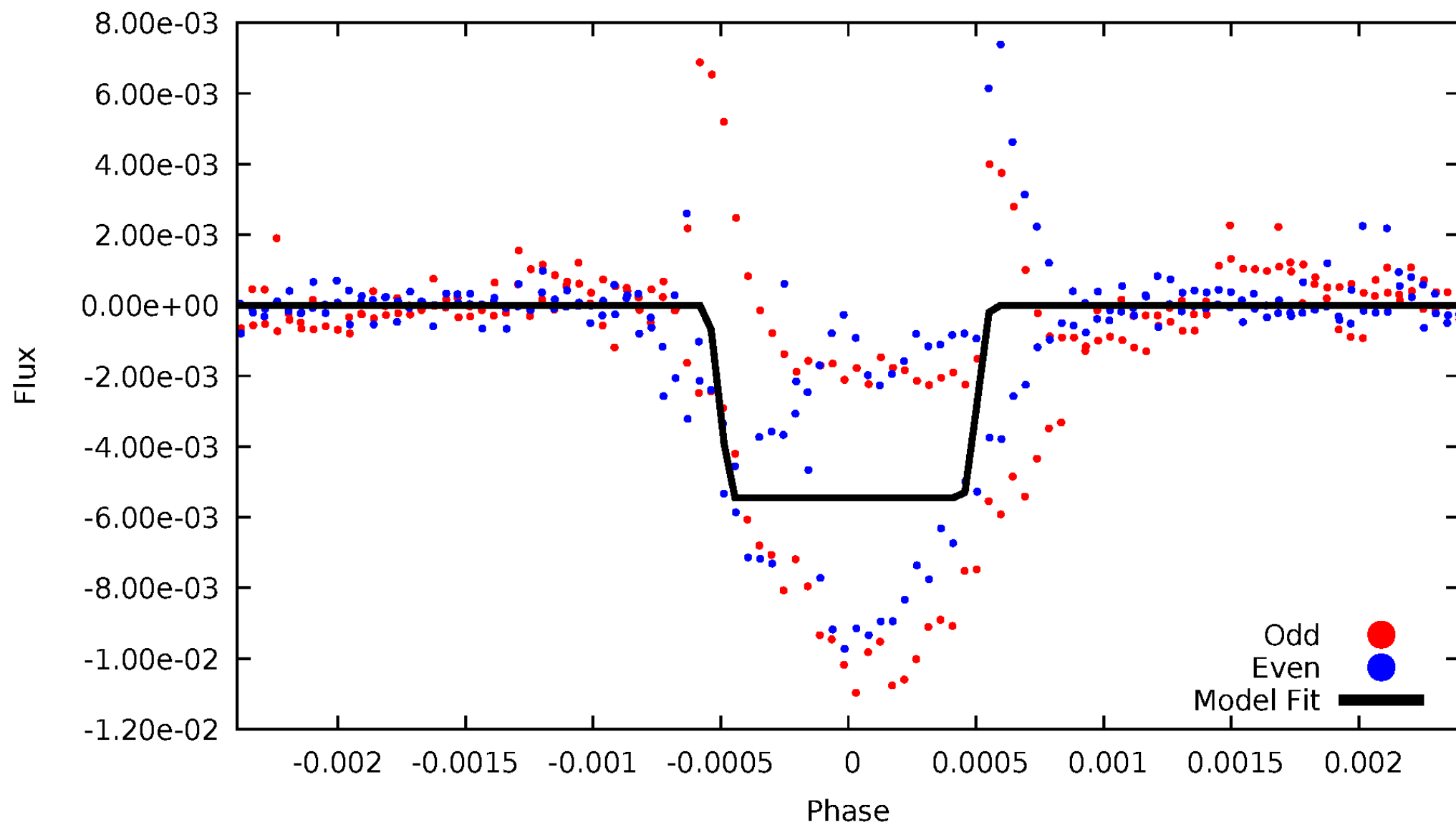
DV Odd/Even

TCE 011708843-06



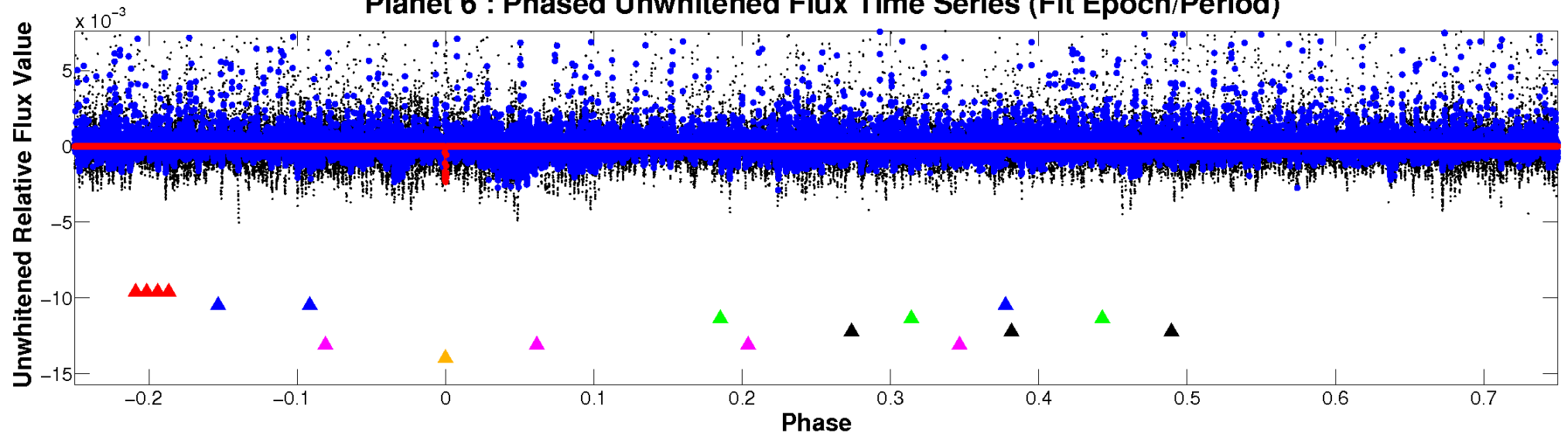
ALT Odd/Even

TCE 011708843-06

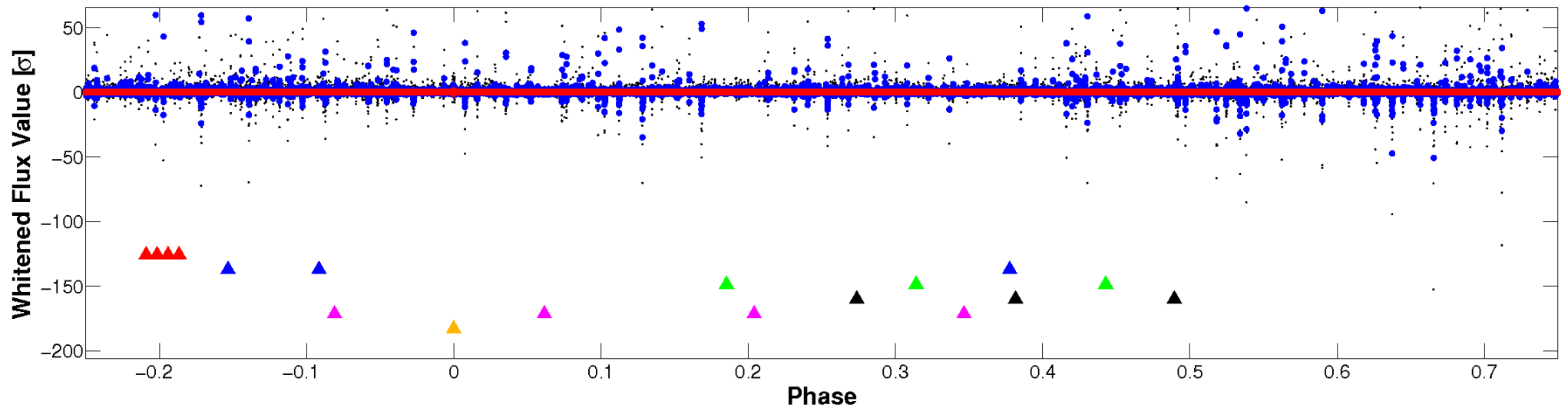


Non-Whitened Vs. Whitened Light Curve

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

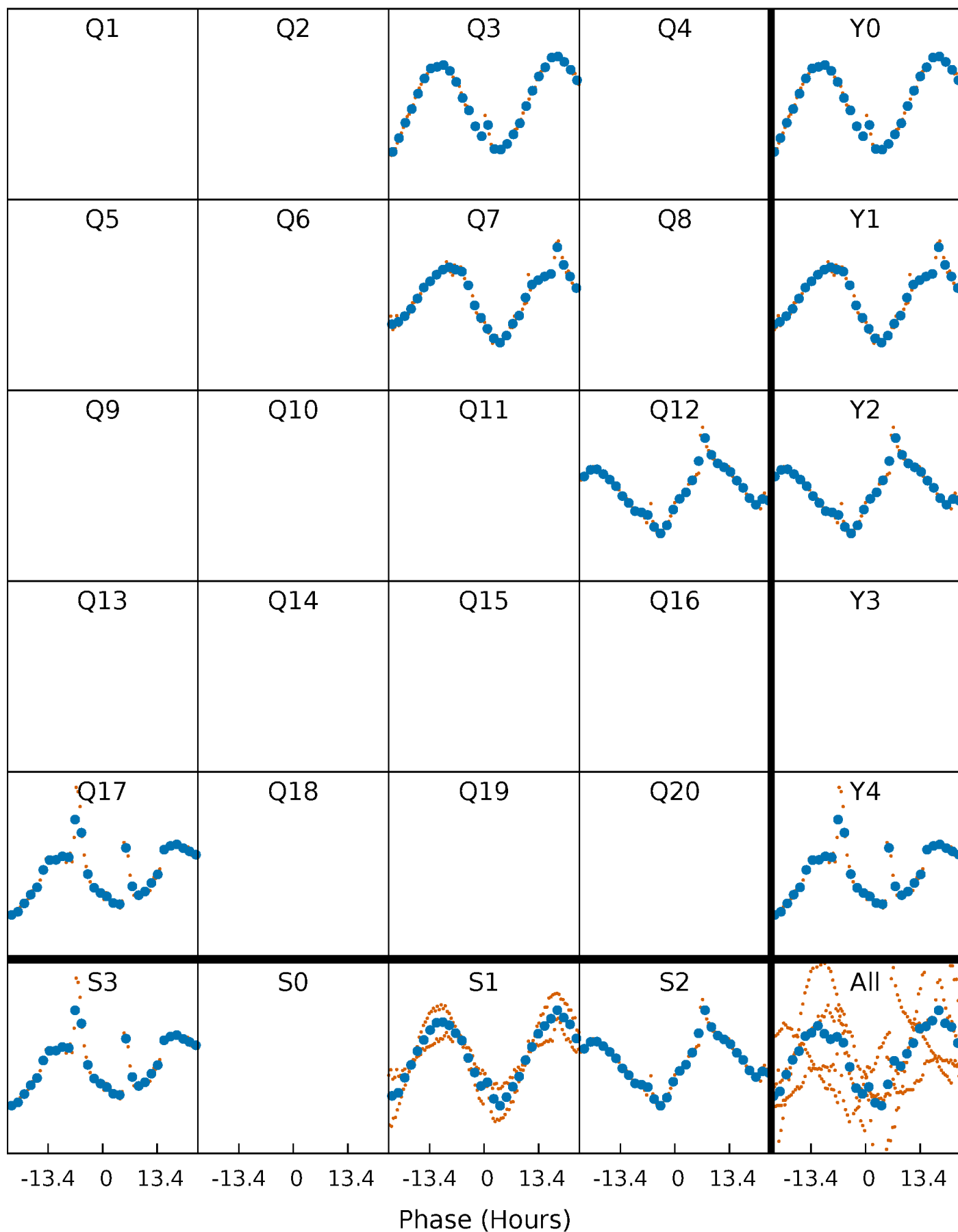


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



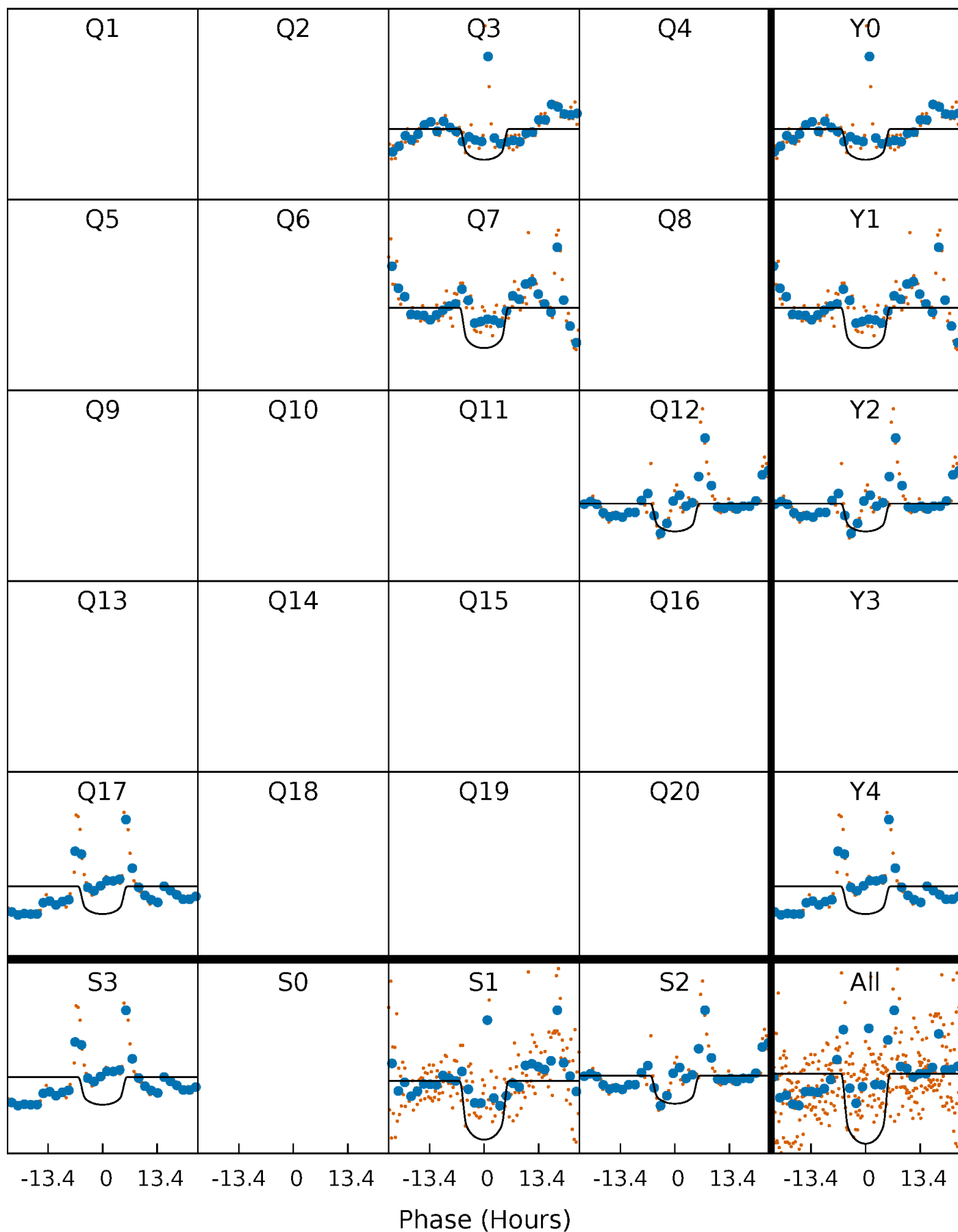
PDC Quarter-Phased Transit Curves

TCE 011708843-06 $P=432.256968$ Days $T_0=273.494588$ (BKJD)



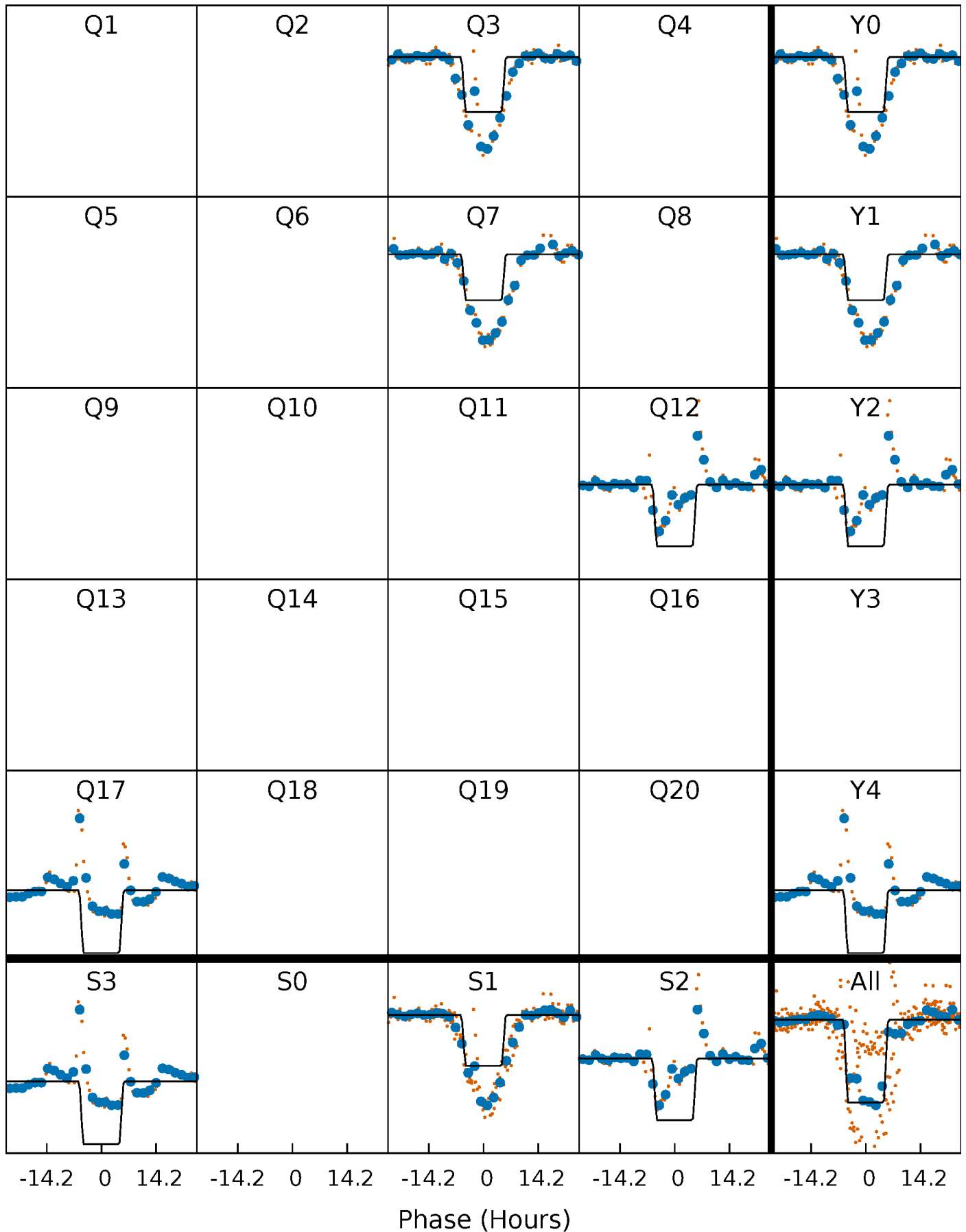
DV Quarter-Phased Transit Curves

TCE 011708843-06 $P=432.256968$ Days $T_0=273.494588$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

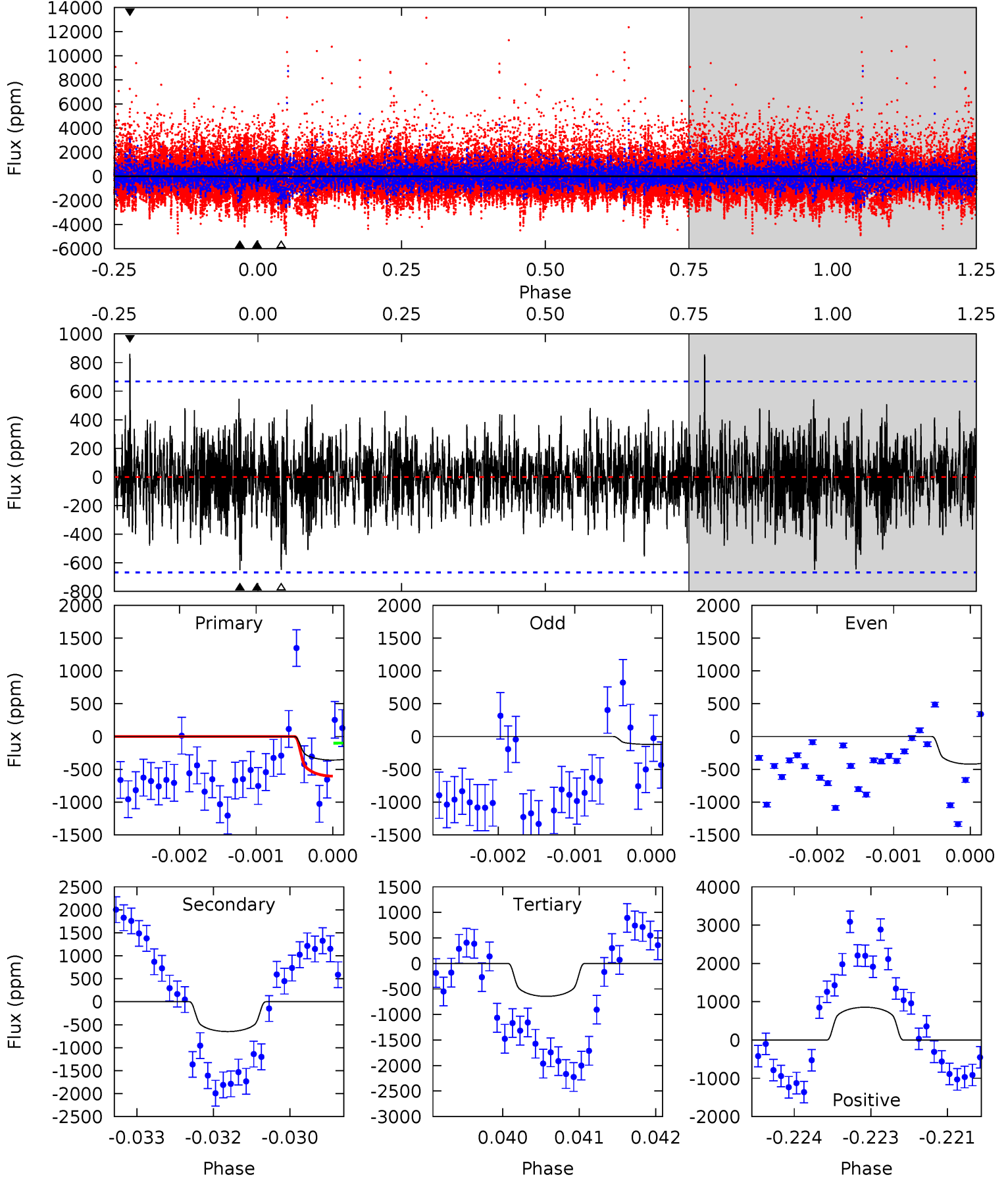
TCE 011708843-06 P=432.210661 Days $T_0=273.614568$ (BKJD)



DV Model-Shift Uniqueness Test

011708843-06, P = 432.256968 Days, E = 273.494588 Days

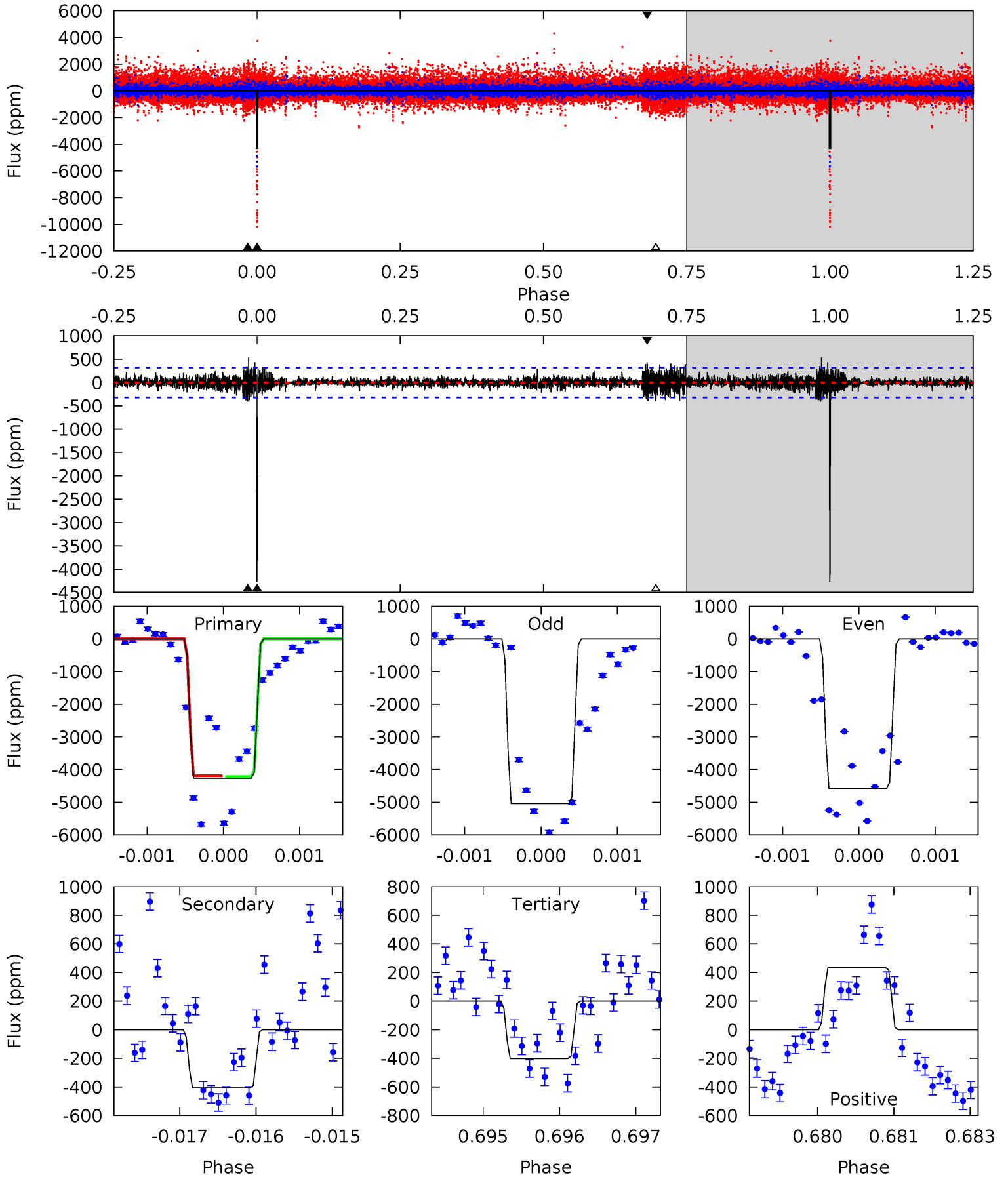
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.91	5.27	5.24	6.96	5.42	3.25	1.42	-2.33	-4.04	0.03	-1.69	0.94	0.72	0.57	2.06



Alt Model-Shift Uniqueness Test

011708843-06, P = 432.210661 Days, E = 273.614568 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
72.0	6.85	6.78	7.33	5.43	3.25	1.54	65.3	64.7	0.07	-0.47	3.96	1.04	0.11	0.21



Stellar Parameters For KIC 011708843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5254^{+157}_{-157}	$4.546^{+0.088}_{-0.072}$	$-0.500^{+0.350}_{-0.300}$	$0.735^{+0.087}_{-0.087}$	$0.693^{+0.099}_{-0.042}$	$2.458^{+0.925}_{-0.567}$
	+3%/-3%	+2%/-2%	+70%/-60%	+12%/-12%	+14%/-6%	+38%/-23%
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 011708843-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-649 ± 123	$3.98^{+0.49}_{-0.49}$	280^{+12}_{-13}	4050^{+225}_{-216}	22275^{+8376}_{-5876}
Alt.	-406 ± 59	$5.94^{+0.61}_{-0.55}$	278^{+11}_{-13}	3284^{+108}_{-123}	6360^{+1534}_{-1356}

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 $A_{obs} \gg 1.0$

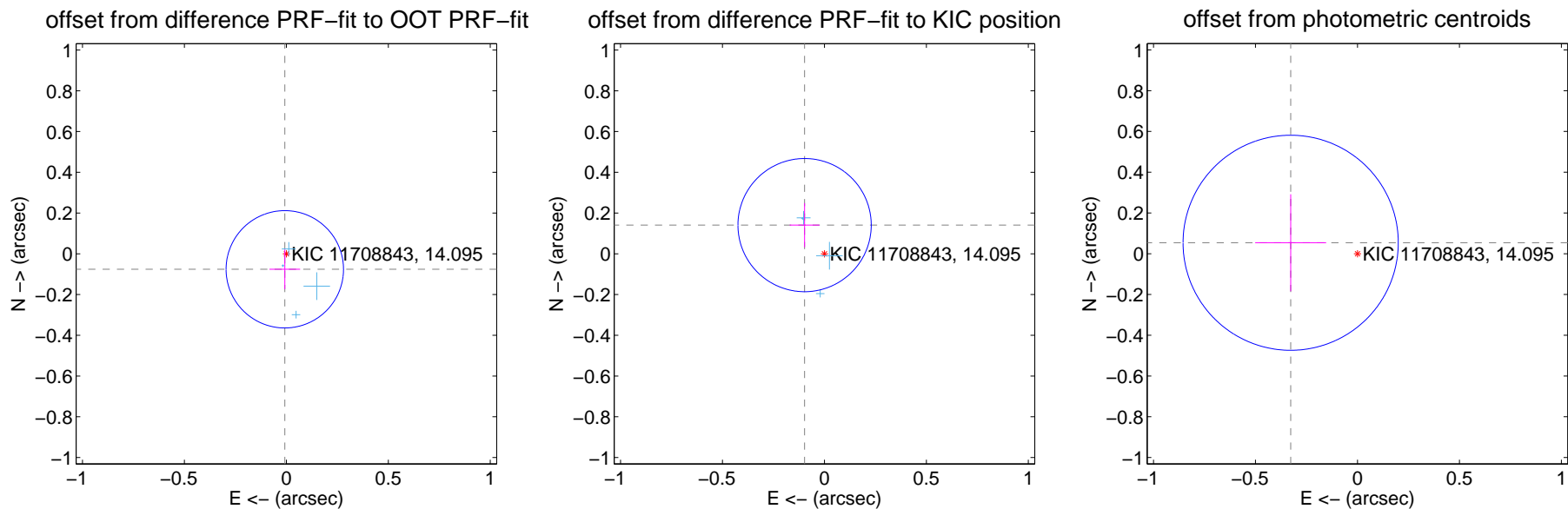
DV Centroid Data

Supplemental centroid analysis for 011708843-06. Kepler magnitude: 14.10. Transit SNR 6.57

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.077 ± 0.096	0.80	0.008 ± 0.075	-0.076 ± 0.097
PRF-fit source offset from KIC position	0.171 ± 0.109	1.57	0.097 ± 0.073	0.141 ± 0.108
photometric centroid source offset	0.33 ± 0.18	1.89	0.33 ± 0.17	0.05 ± 0.24



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



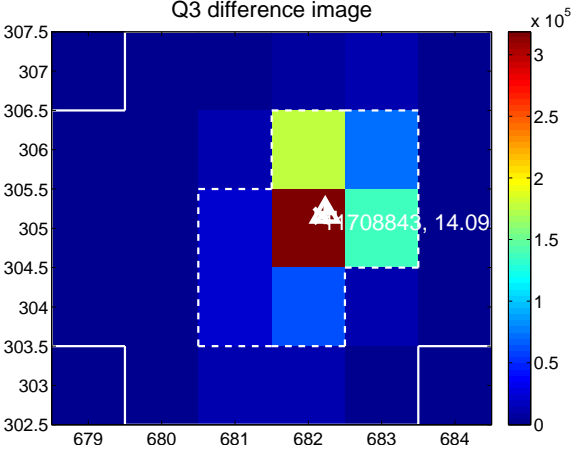
Q2 no difference image



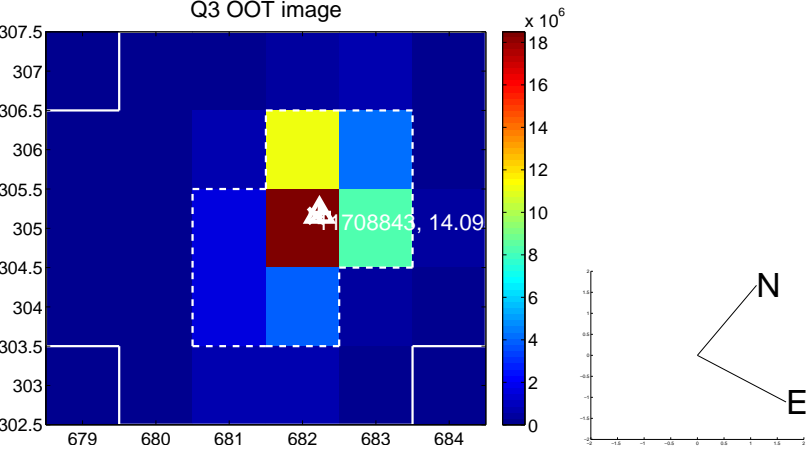
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image

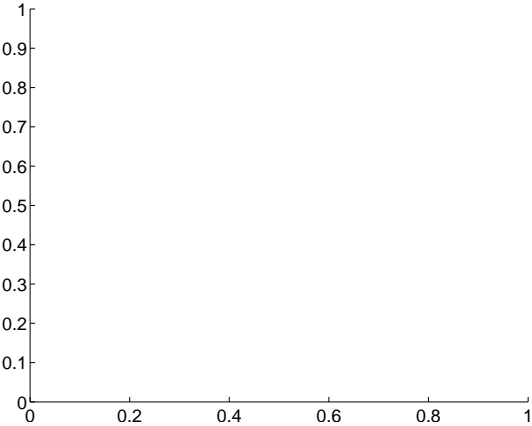


Q4 no OOT image

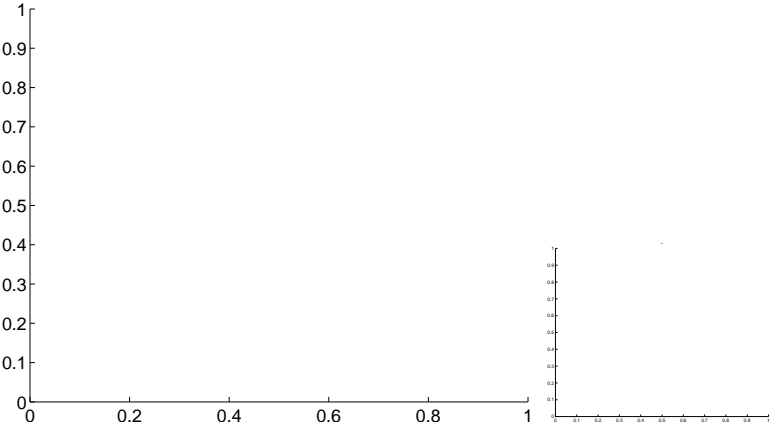


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

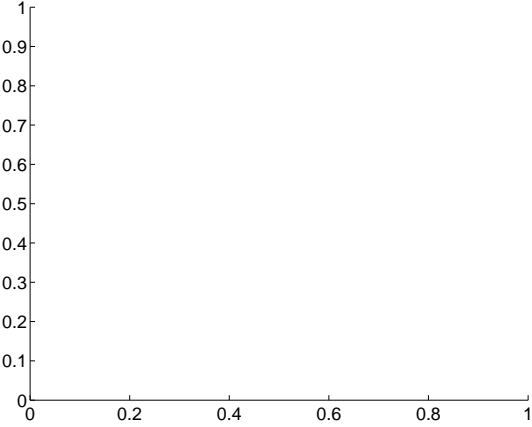
Q5 no difference image



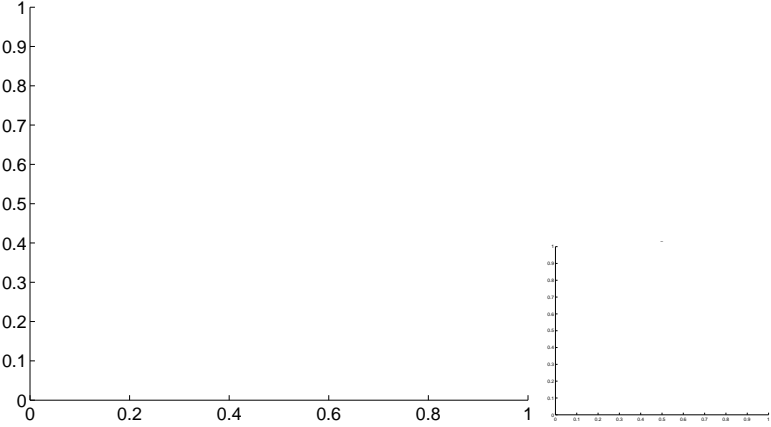
Q5 no OOT image



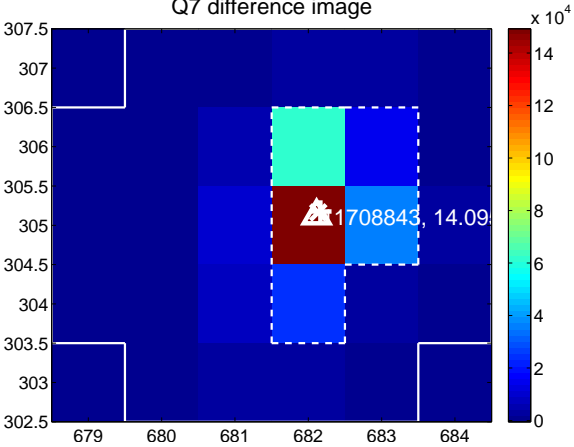
Q6 no difference image



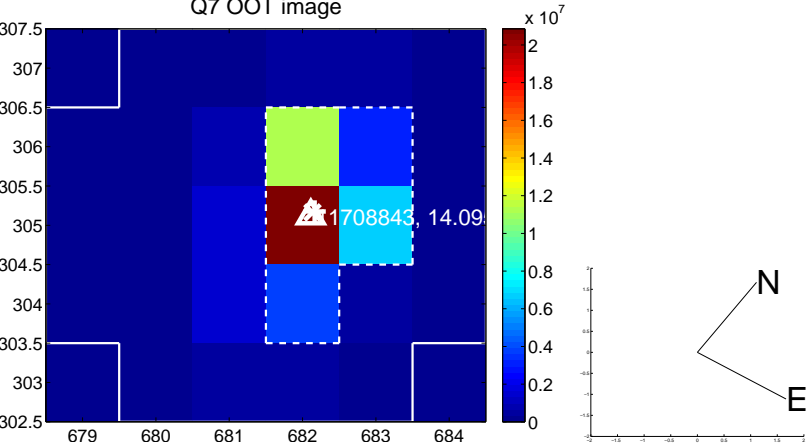
Q6 no OOT image



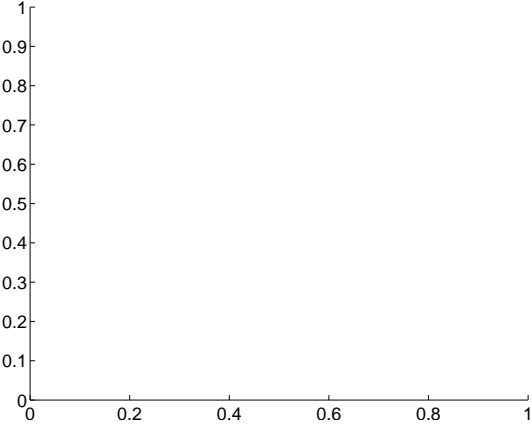
Q7 difference image



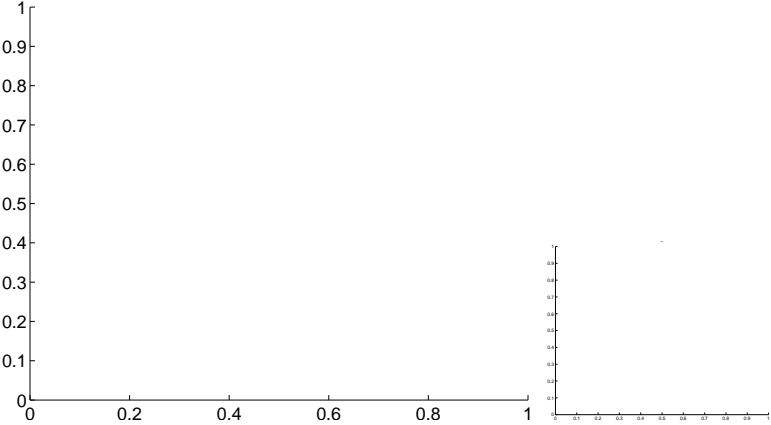
Q7 OOT image



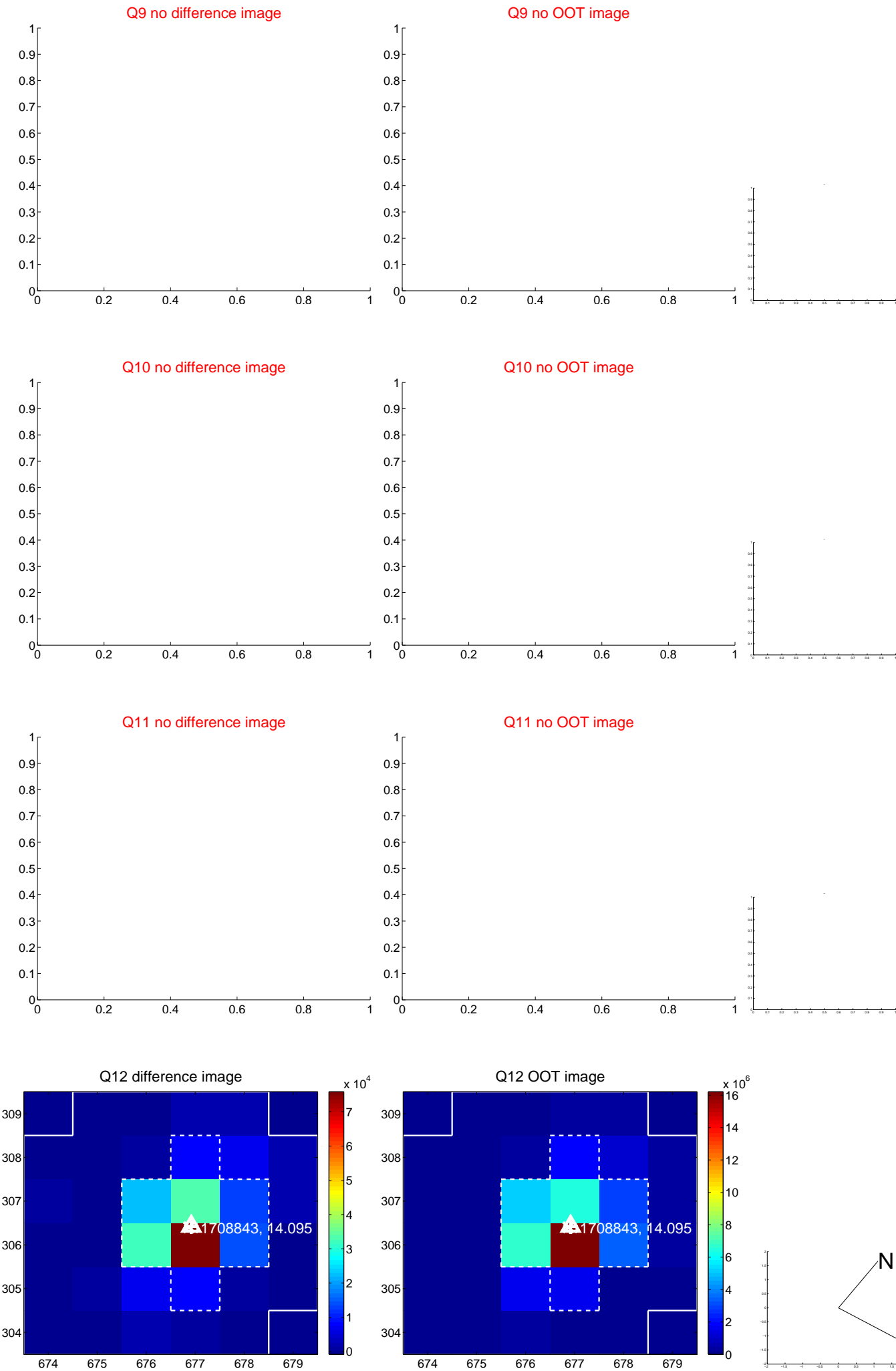
Q8 no difference image



Q8 no OOT image



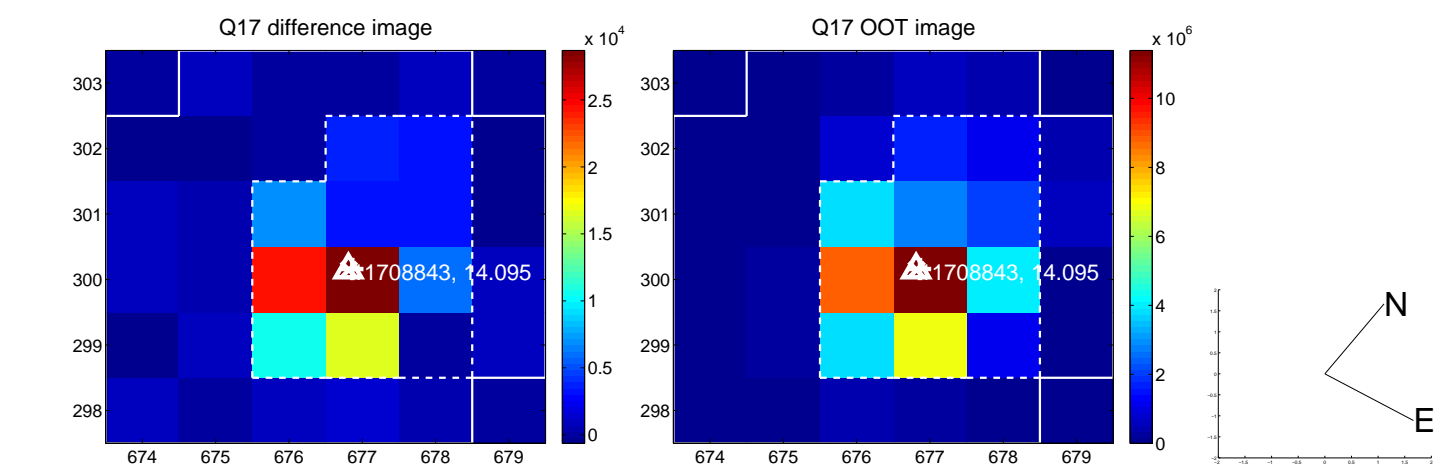
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



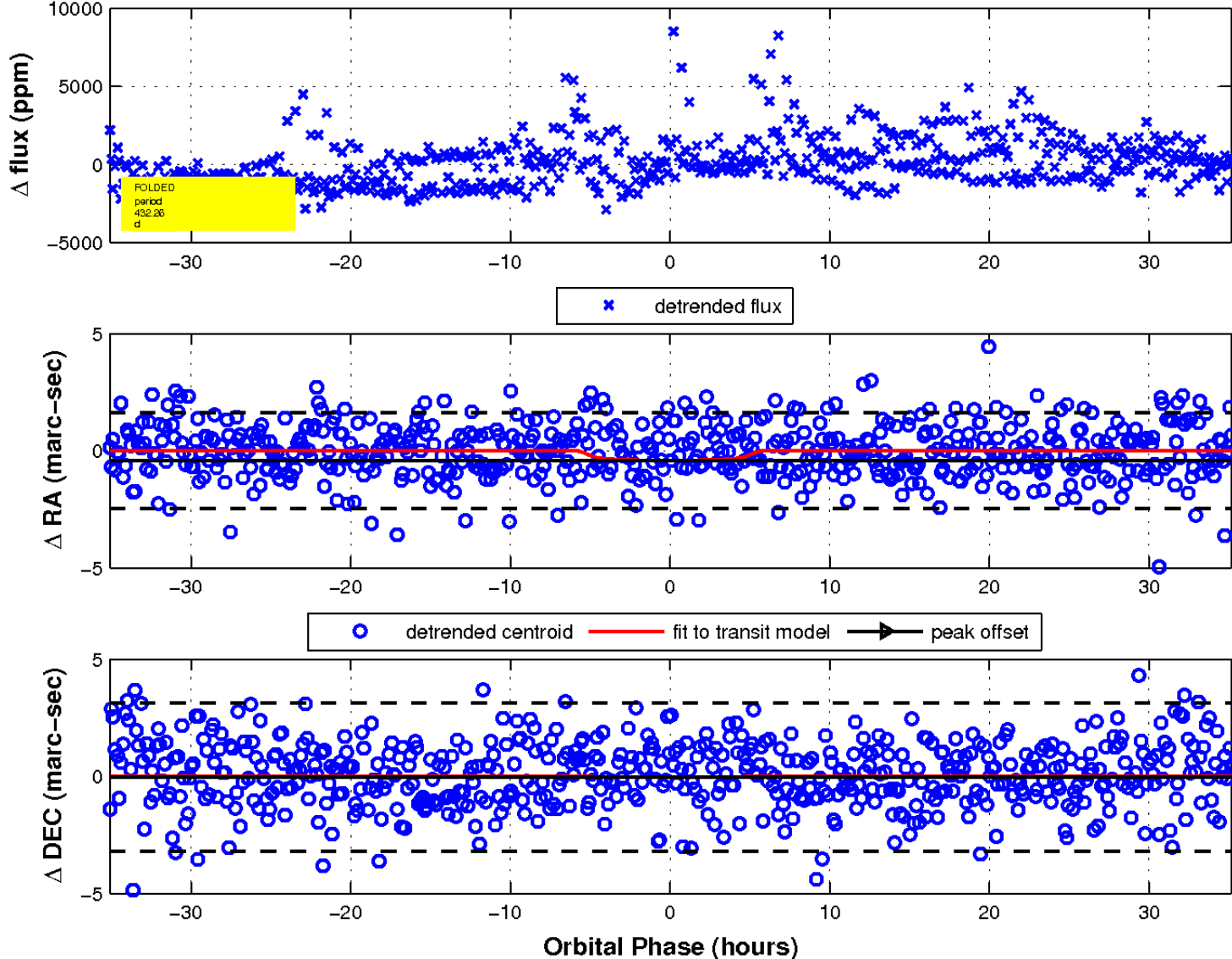
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 6 of 6



UKIRT Image

Declination

