

KIC 008040343

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})
008040343-01	OBS	No	369.442461	233.136553	1403.9	22.049	12.6	12.7	0.96	5665	6.64	0.97
008040343-02	OBS	No	367.240154	173.215295	2026.3	15.212	11.5	14.4	0.96	5665	5.44	0.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008040343-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008040343-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

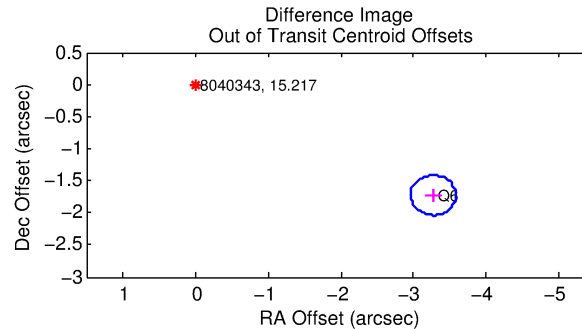
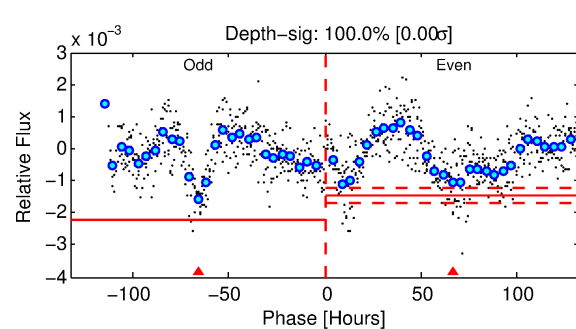
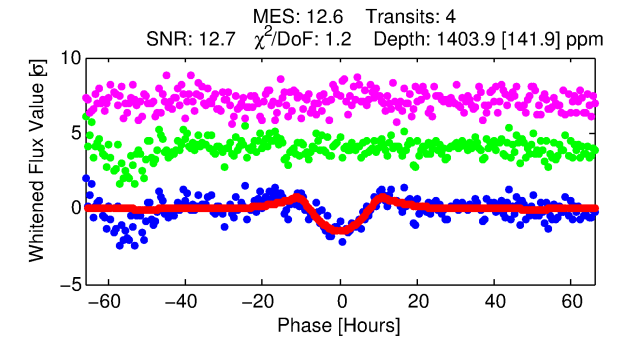
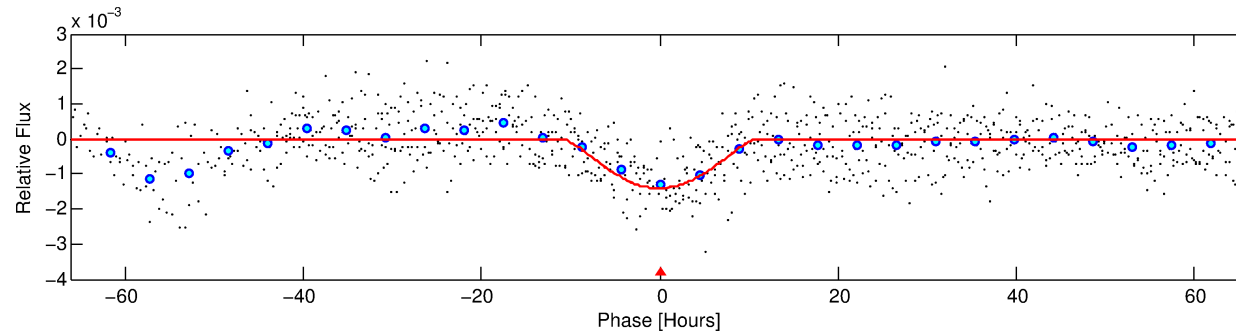
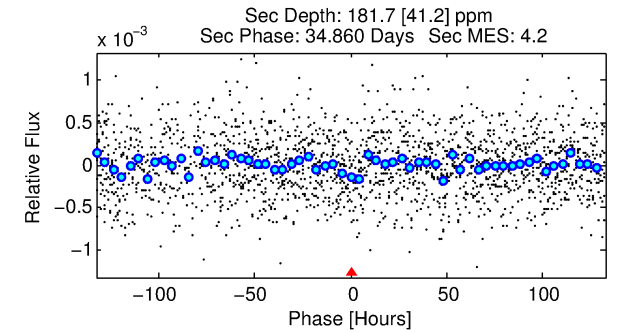
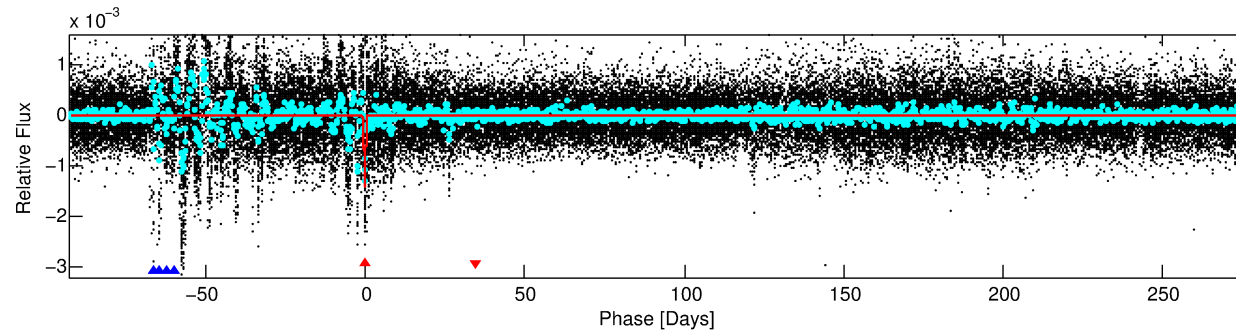
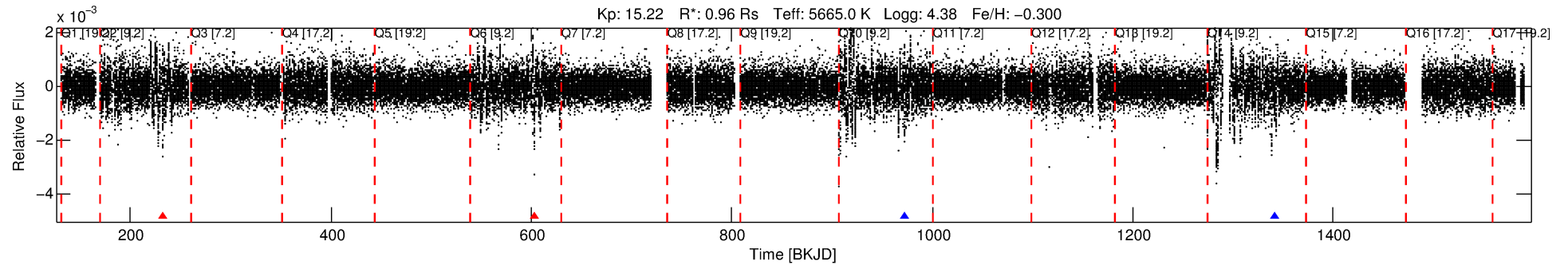
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008040343-01

No Significant Match Found

DV One-Page Summary

KIC: 8040343 Candidate: 1 of 2 Period: 369.442 d



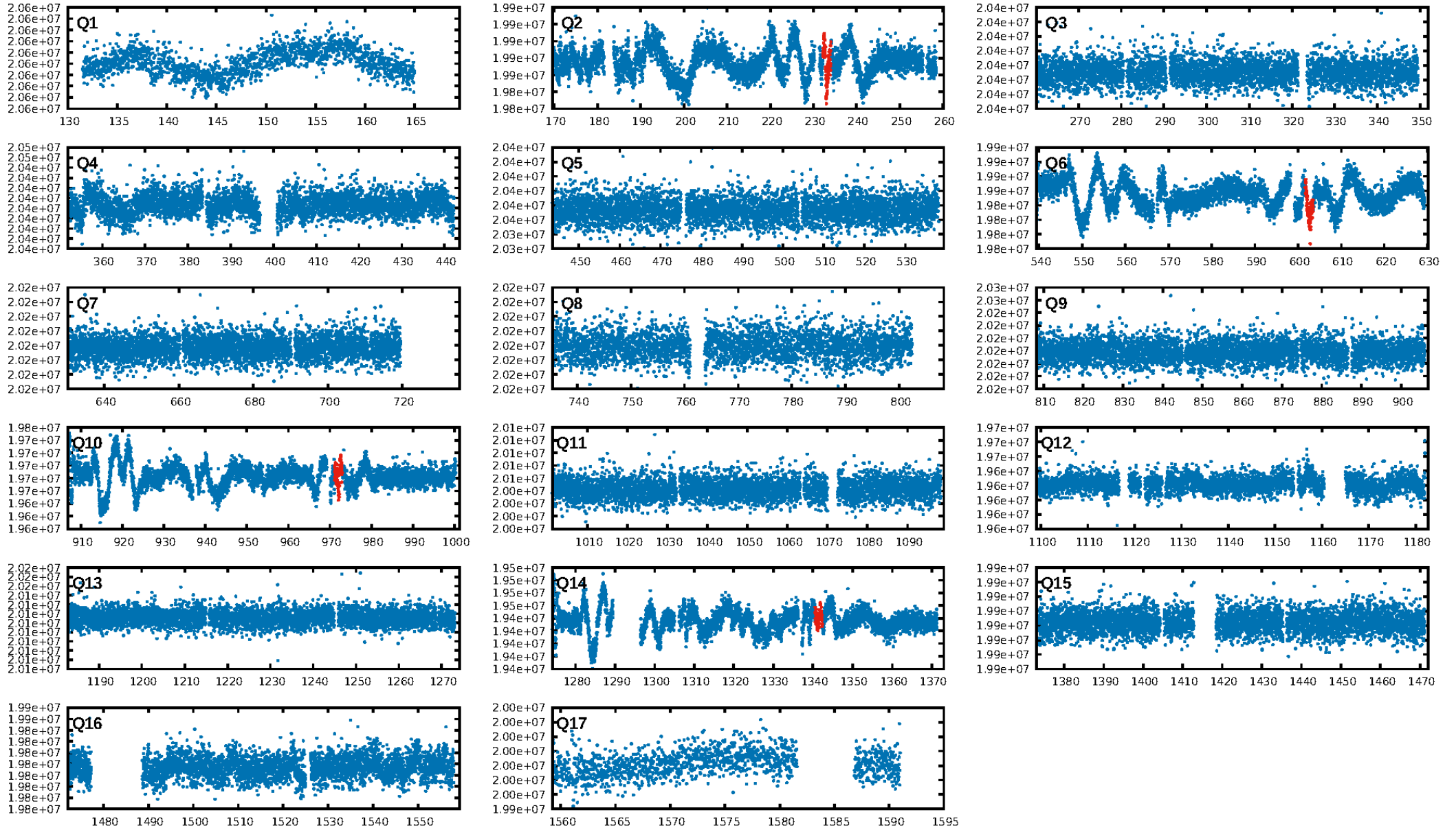
DV Fit Results:

Period = 369.44246 [0.01523] d
Epoch = 233.1366 [0.0280] BKJD
Rp/R* = 0.0630 [0.1081]
a/R* = 47.77 [19.88]
b = 1.00 [0.16]
Seff = 0.97 [0.36]
Teq = 253 [23] K
Rp = 6.64 [11.54] Re
a = 0.9428 [0.2251] AU
Ag = 2017.14 [6972.70] [0.29σ]
Teff = 2620 [2254] K [1.05σ]

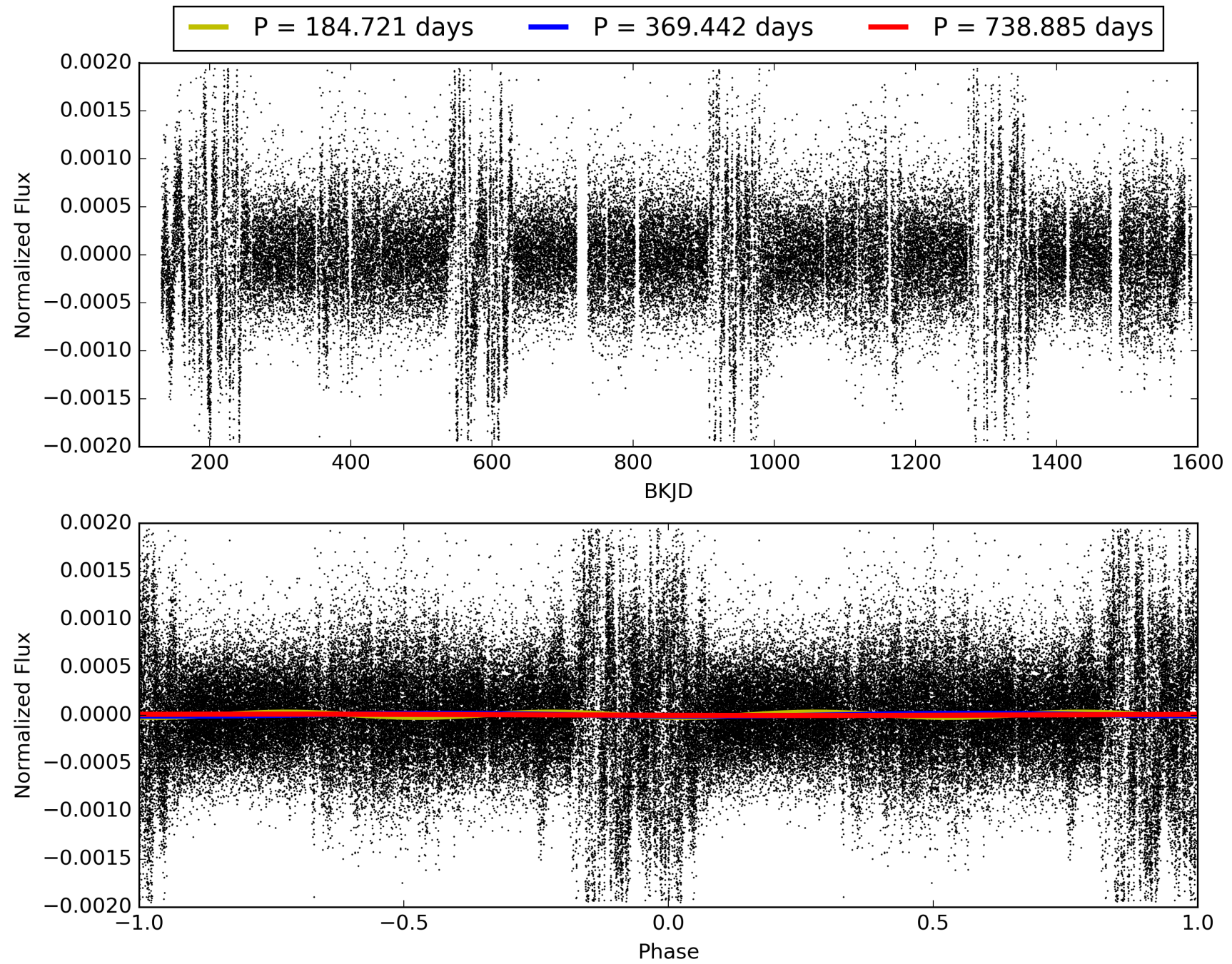
DV Diagnostic Results:

ShortPeriod-sig: 95.2% [1.97σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 80.5%
Bootstrap-pfa: 6.87e-25
RollingBand-fgt: 0.50 [2/4]
GhostDiagnostic-chr: 2.067
Centroid-sig: 27.9%
Centroid-so: 1.475 arcsec [0.83σ]
OotOffset-rm: 3.700 arcsec [35.75σ]
KicOffset-rm: 3.677 arcsec [35.76σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 008040343-01, PDC Light Curves

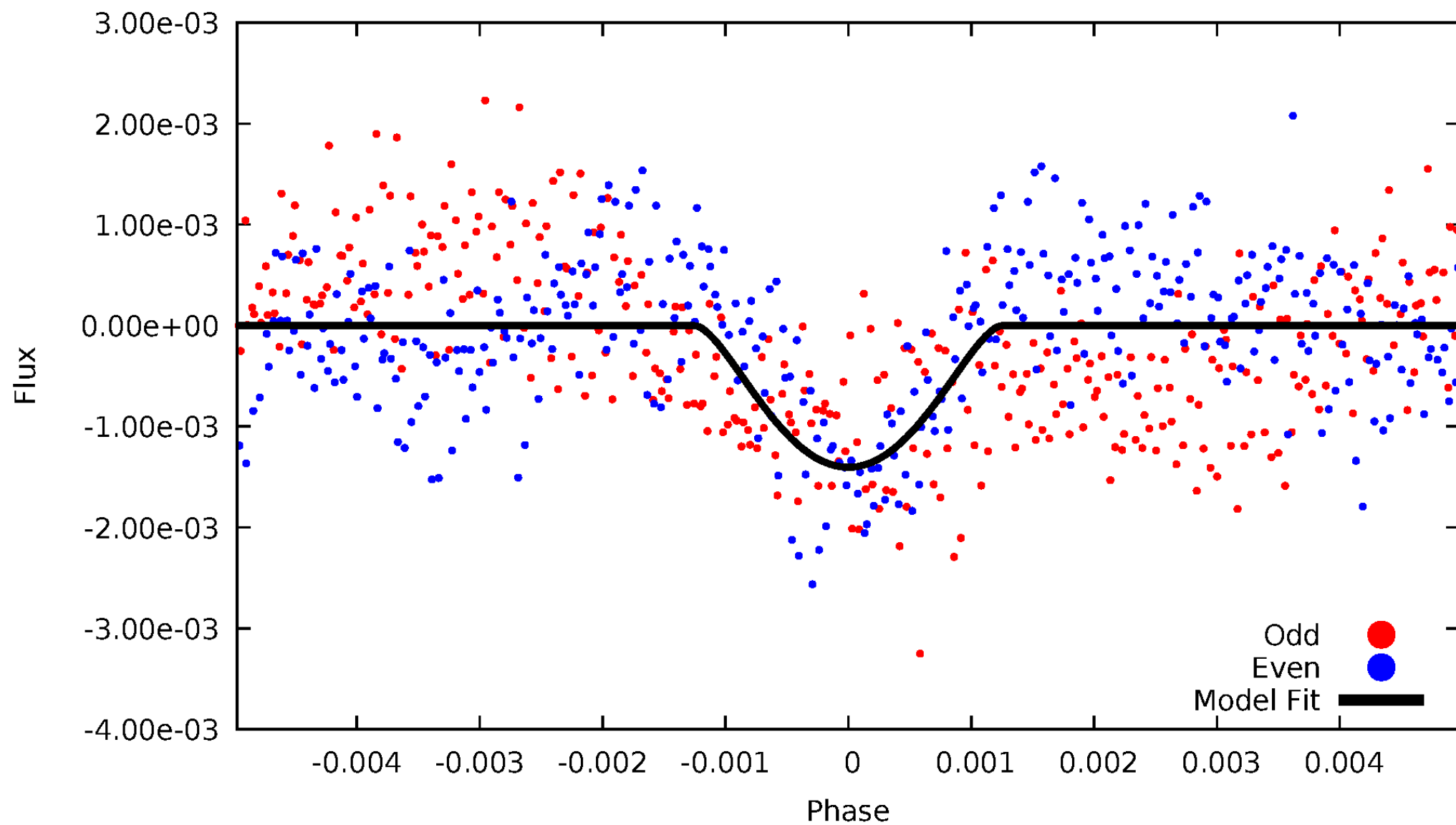


TCE 008040343-01



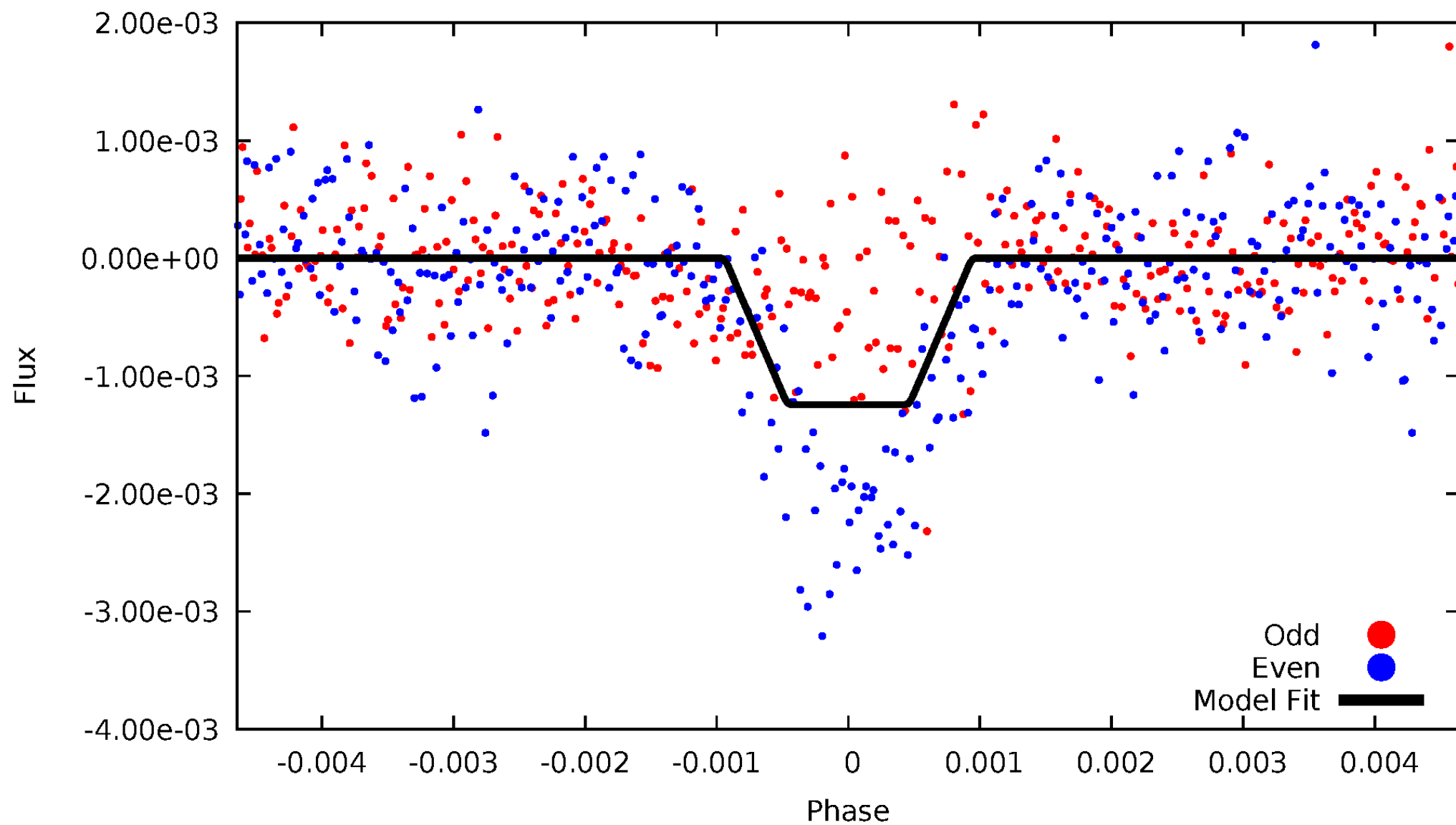
DV Odd/Even

TCE 008040343-01



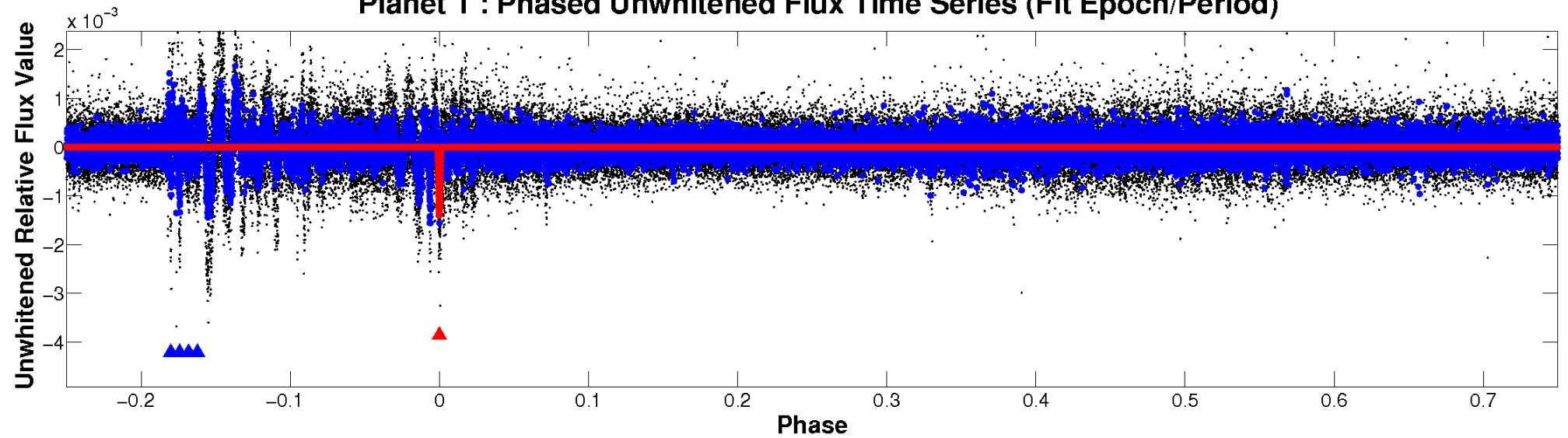
ALT Odd/Even

TCE 008040343-01

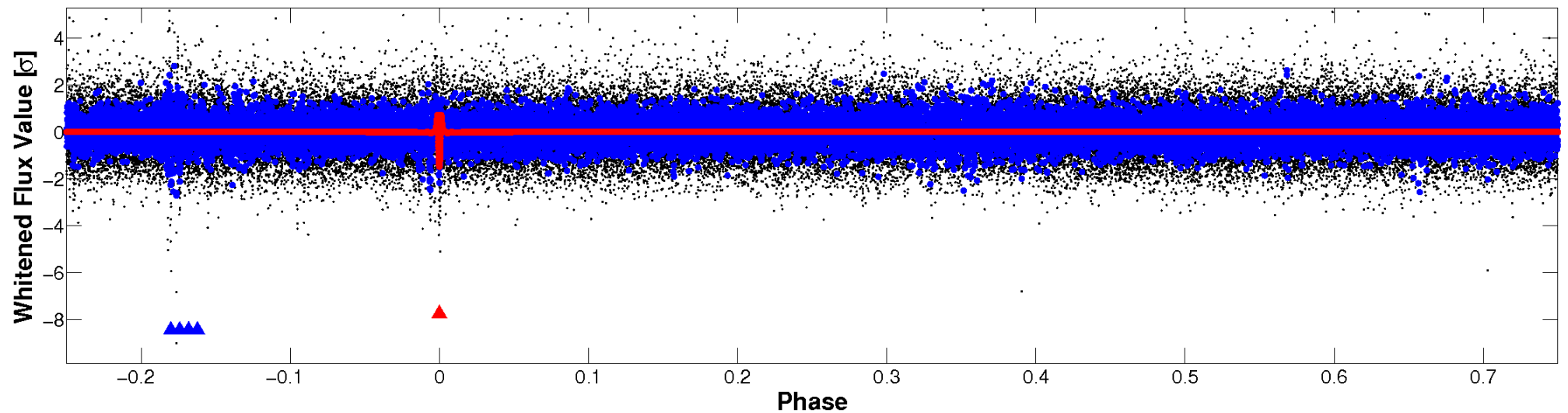


Non-Whitened Vs. Whitened Light Curve

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

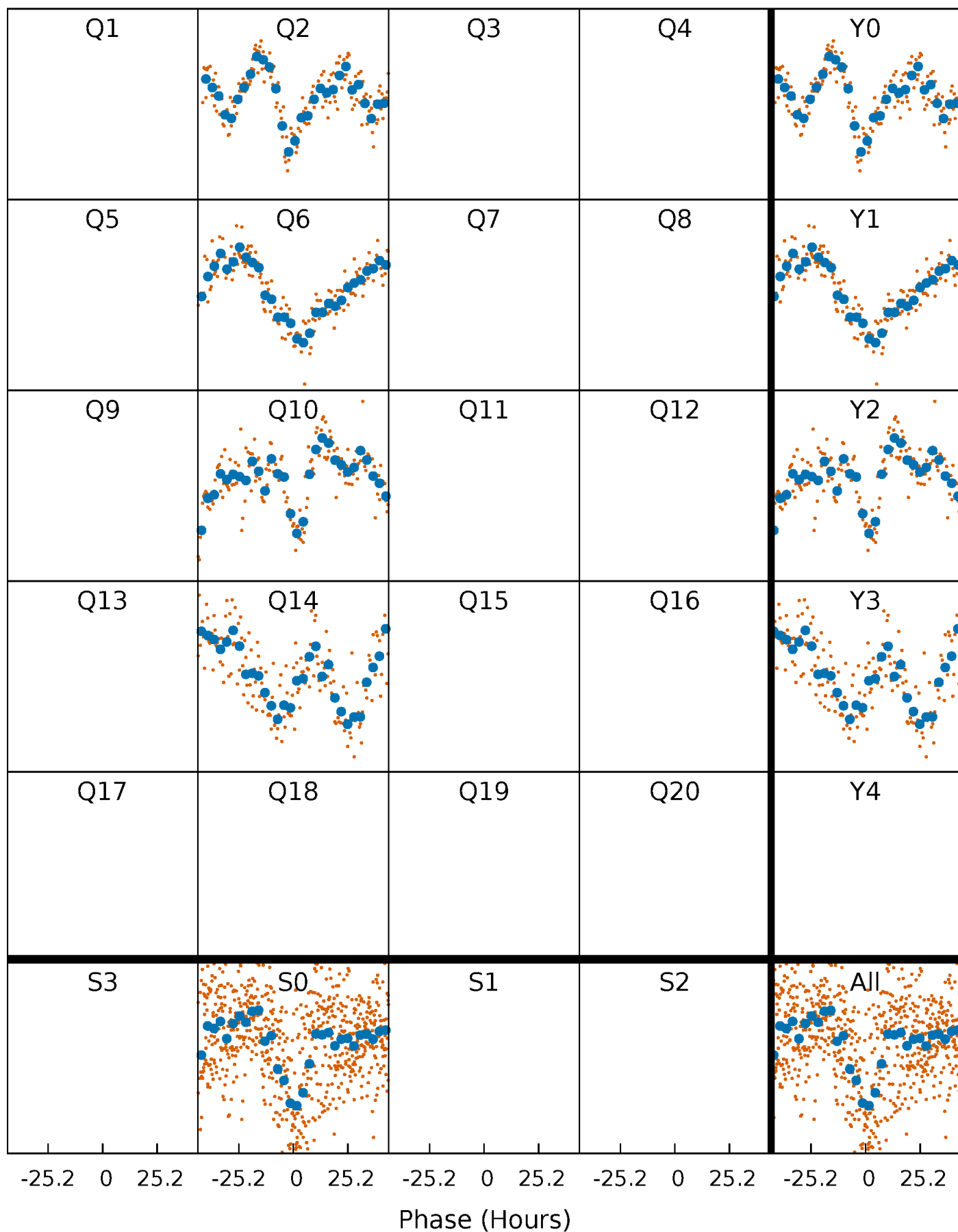


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



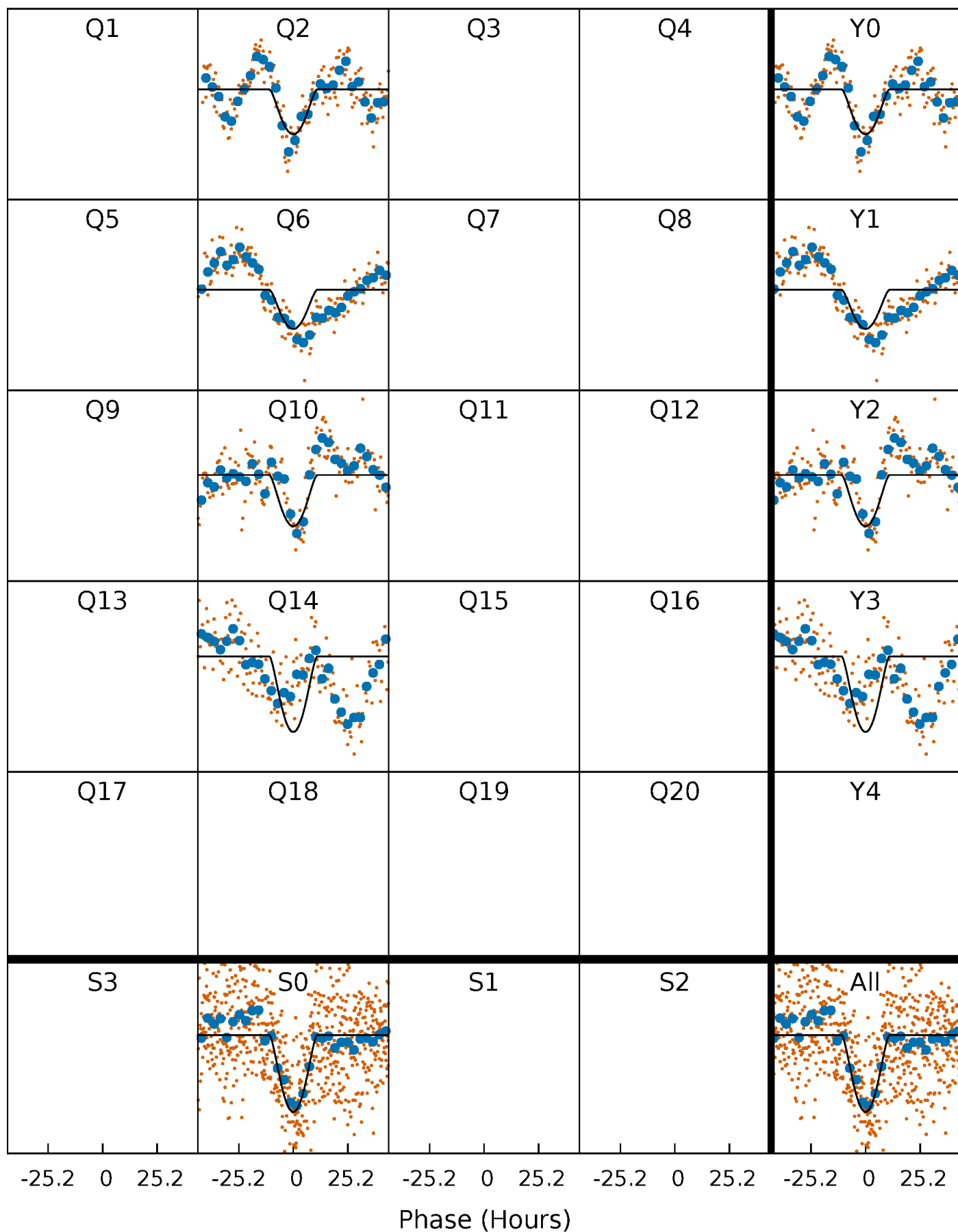
PDC Quarter-Phased Transit Curves

TCE 008040343-01 P=369.442461 Days $T_0=233.136552$ (BKJD)



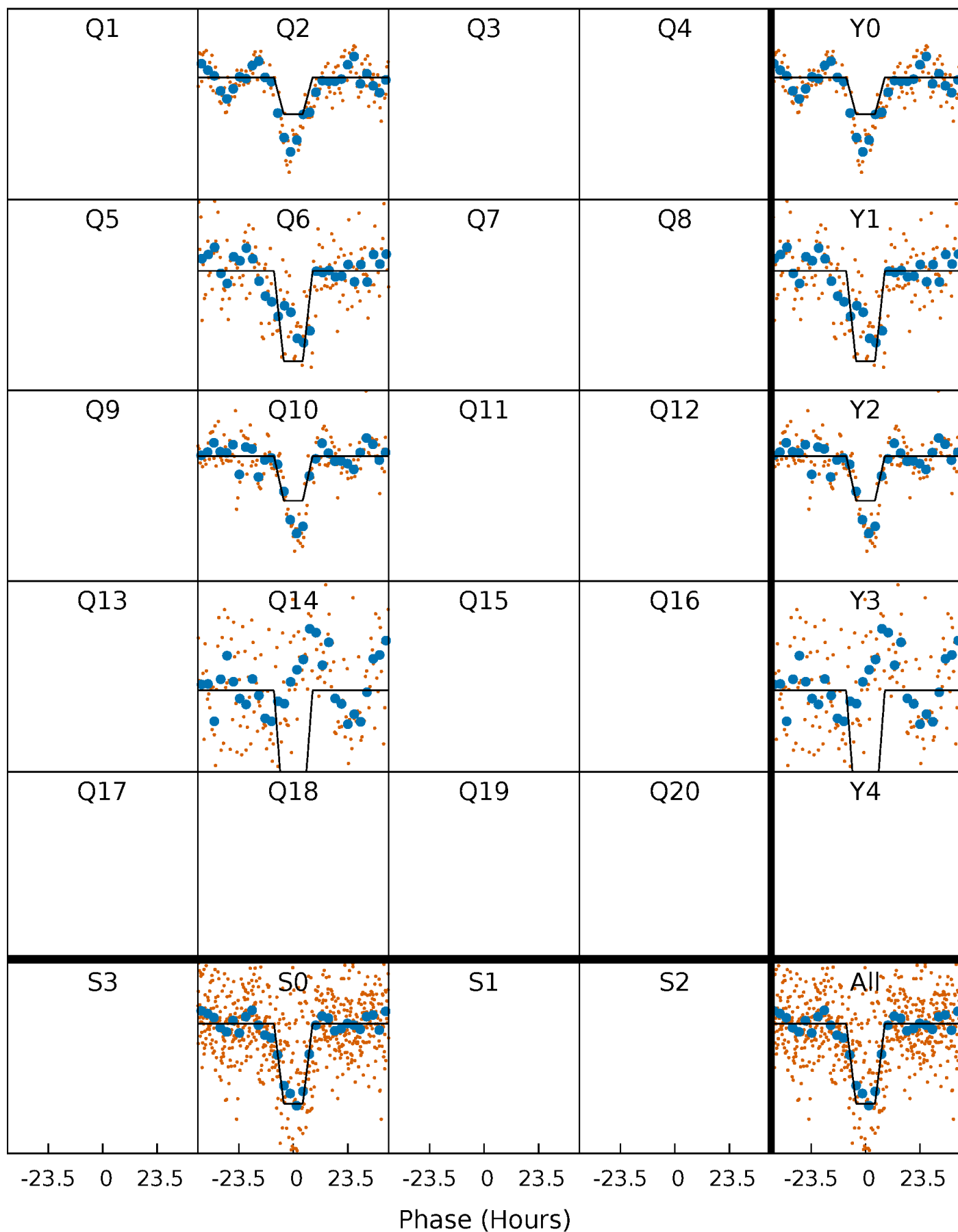
DV Quarter-Phased Transit Curves

TCE 008040343-01 P=369.442461 Days $T_0=233.136552$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

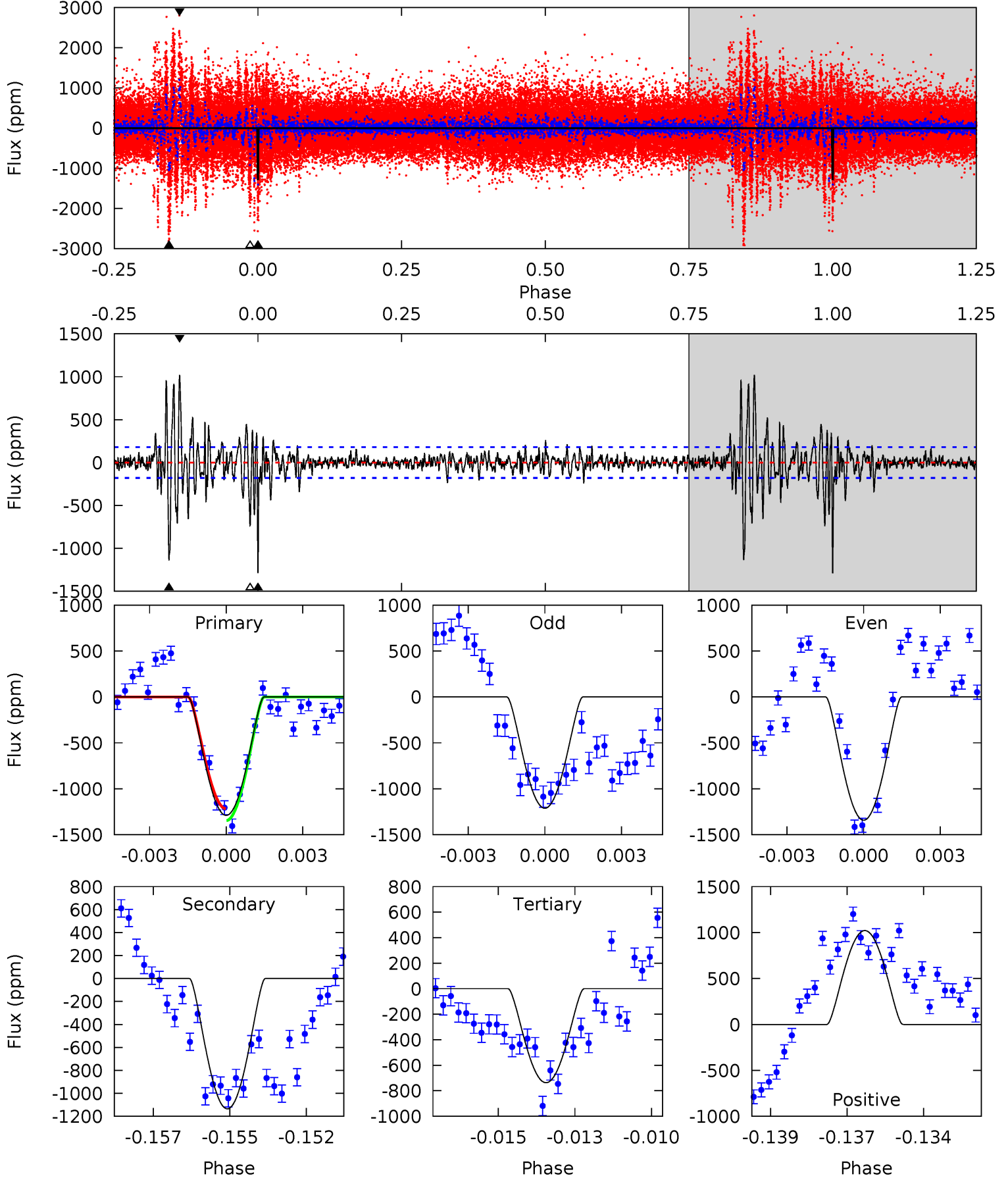
TCE 008040343-01 P=369.472821 Days $T_0=233.101516$ (BKJD)



DV Model-Shift Uniqueness Test

008040343-01, P = 369.442461 Days, E = 233.136552 Days

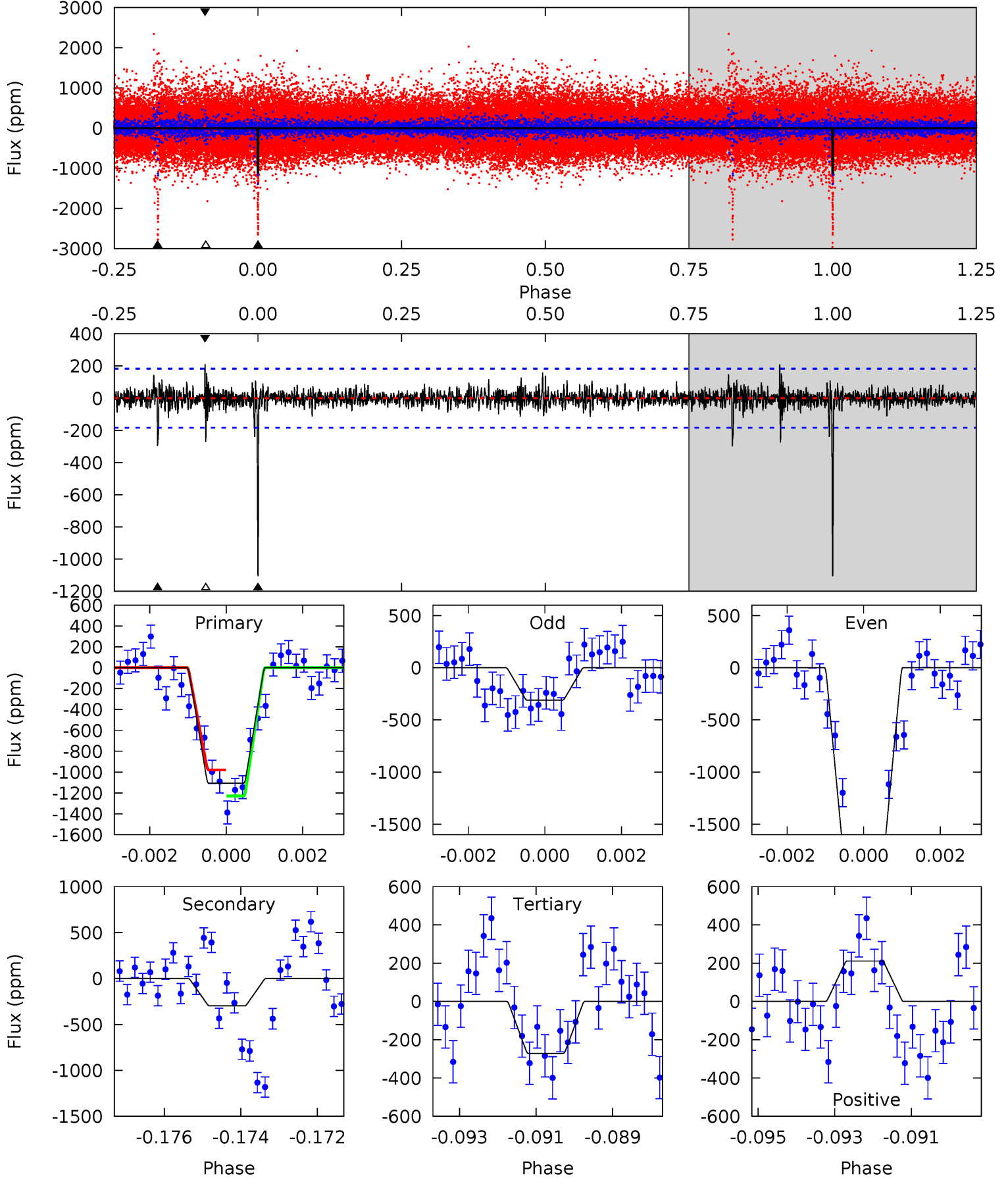
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.0	33.4	21.7	30.1	5.28	3.02	4.21	16.3	7.89	11.7	3.34	1.90	0.97	0.44	1.90



Alt Model-Shift Uniqueness Test

008040343-01, P = 369.472821 Days, E = 233.101516 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.2	8.67	7.89	6.14	5.34	3.11	1.05	24.3	26.0	0.78	2.53	24.2	0.89	0.16	3.64



Stellar Parameters For KIC 008040343

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5665^{+169}_{-152}	$4.382^{+0.158}_{-0.193}$	$-0.300^{+0.300}_{-0.300}$	$0.965^{+0.271}_{-0.158}$	$0.819^{+0.124}_{-0.062}$	$1.283^{+0.946}_{-0.625}$
	+3%/-3%	+4%/-4%	+100%/-100%	+28%/-16%	+15%/-8%	+74%/-49%
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 008040343-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1135 ± 34	$10.82^{+11.01}_{-7.25}$	354^{+30}_{-21}	3703^{+1956}_{-703}	4893^{+38949}_{-3710}
Alt.	-298 ± 34	$9.47^{+9.87}_{-6.59}$	354^{+26}_{-20}	3094^{+1577}_{-512}	1571^{+15995}_{-1179}

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

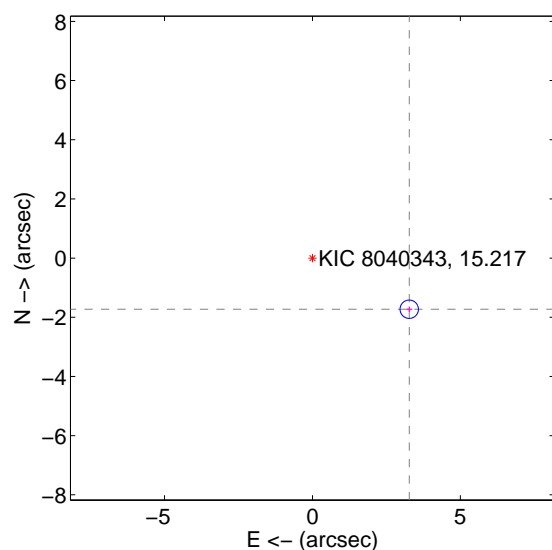
Supplemental centroid analysis for 008040343-01. Kepler magnitude: 15.22. Transit SNR 12.72

There are 0 quarters with good PRF difference image offsets

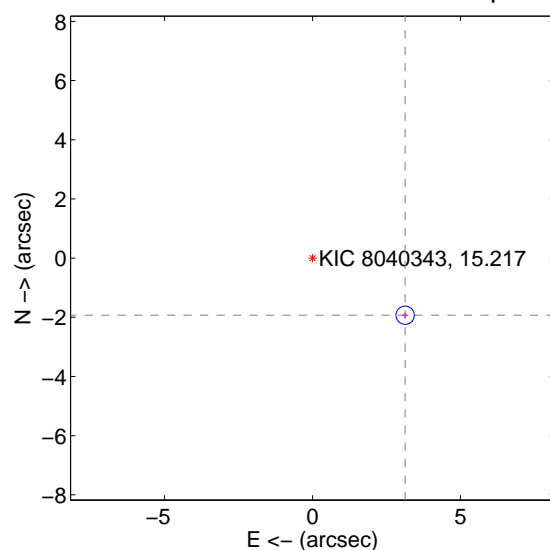
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.700 ± 0.103	35.75	-3.271 ± 0.106	-1.728 ± 0.094
PRF-fit source offset from KIC position	3.677 ± 0.103	35.76	-3.130 ± 0.106	-1.931 ± 0.094
photometric centroid source offset	1.48 ± 1.78	0.83	0.08 ± 1.48	1.47 ± 1.78

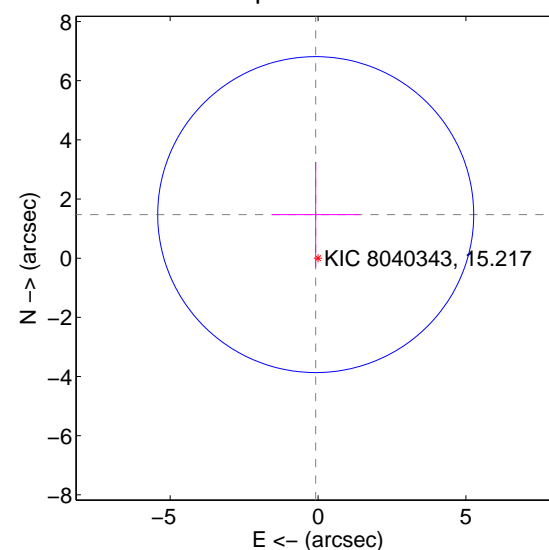
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

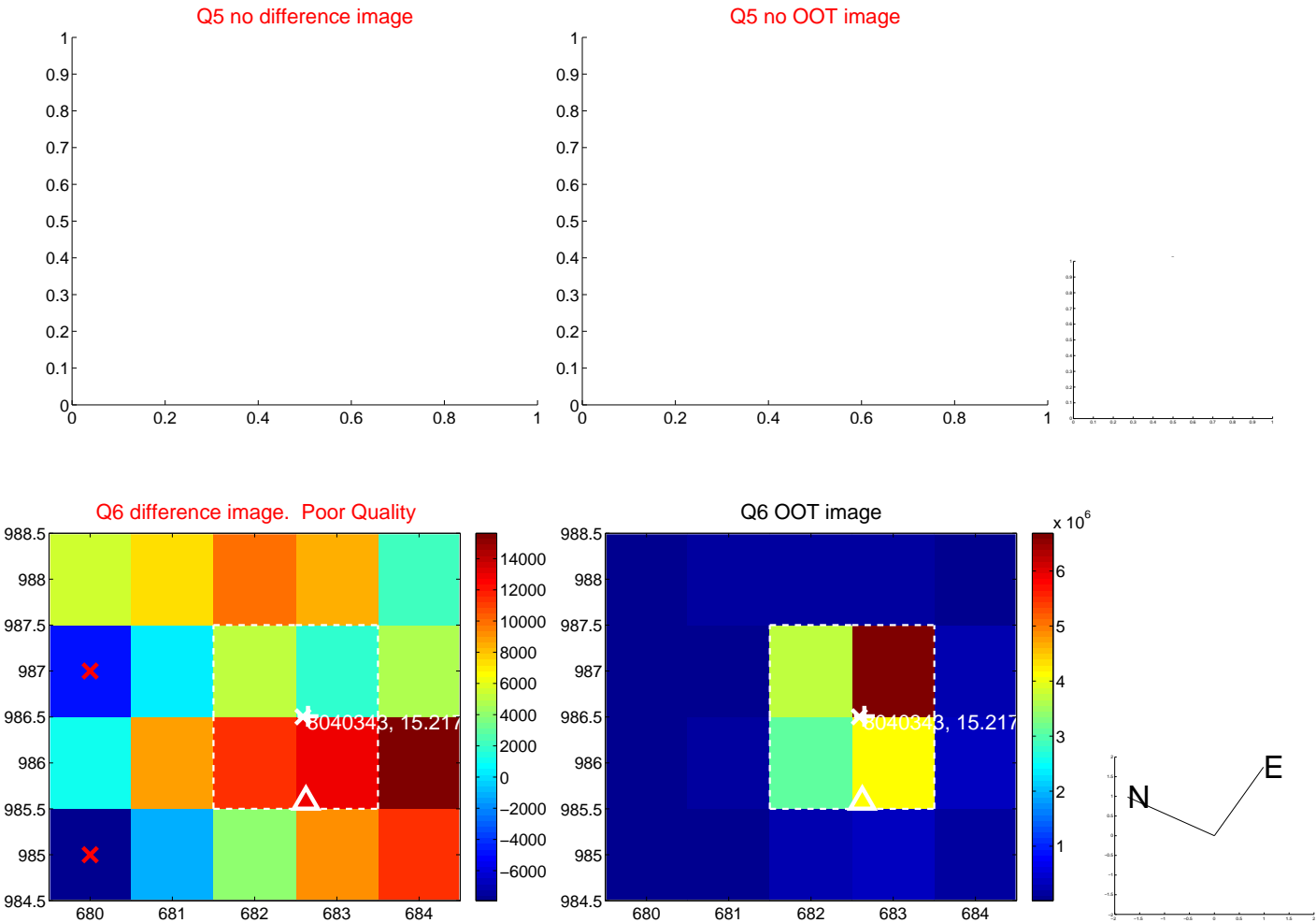


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



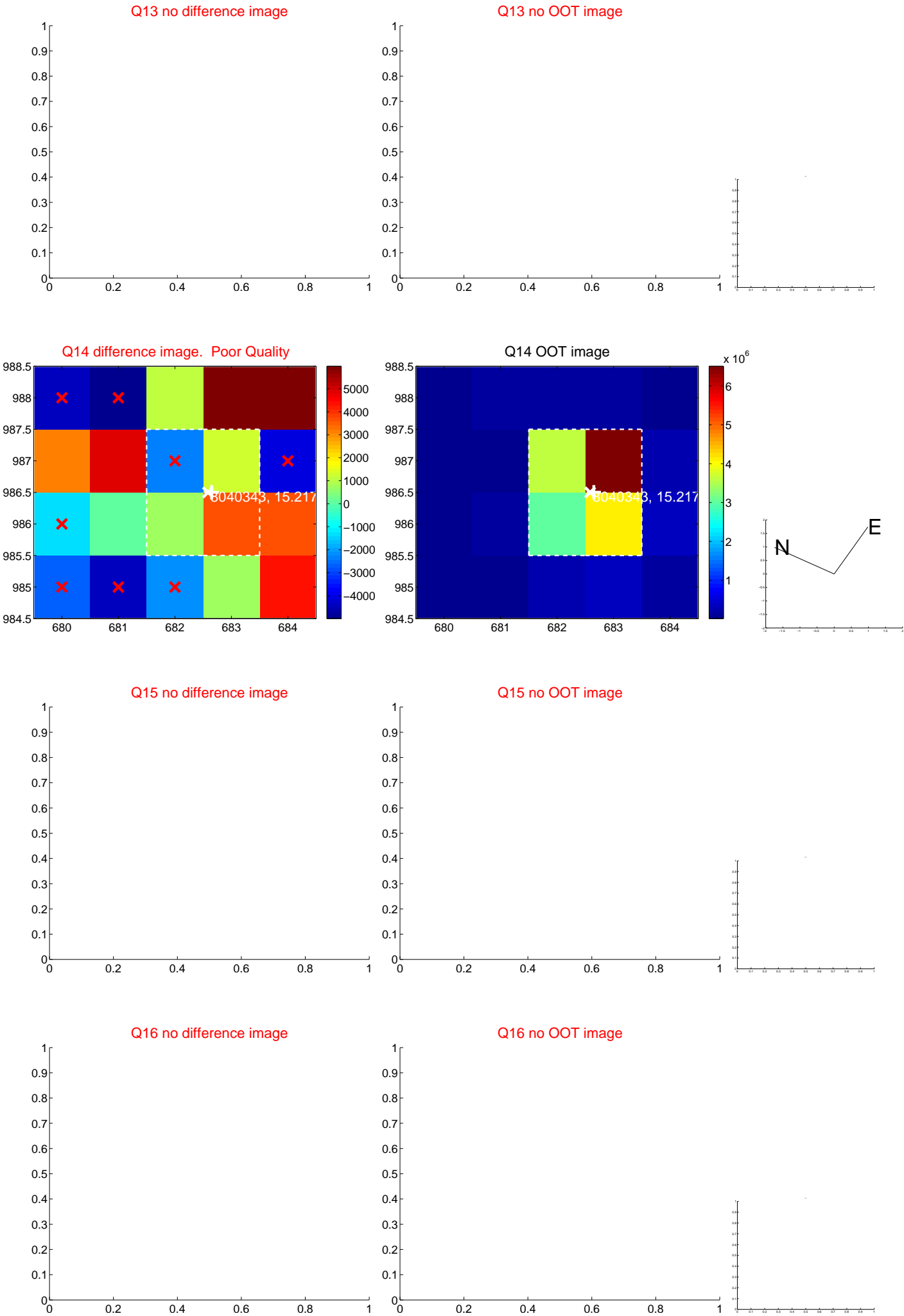
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



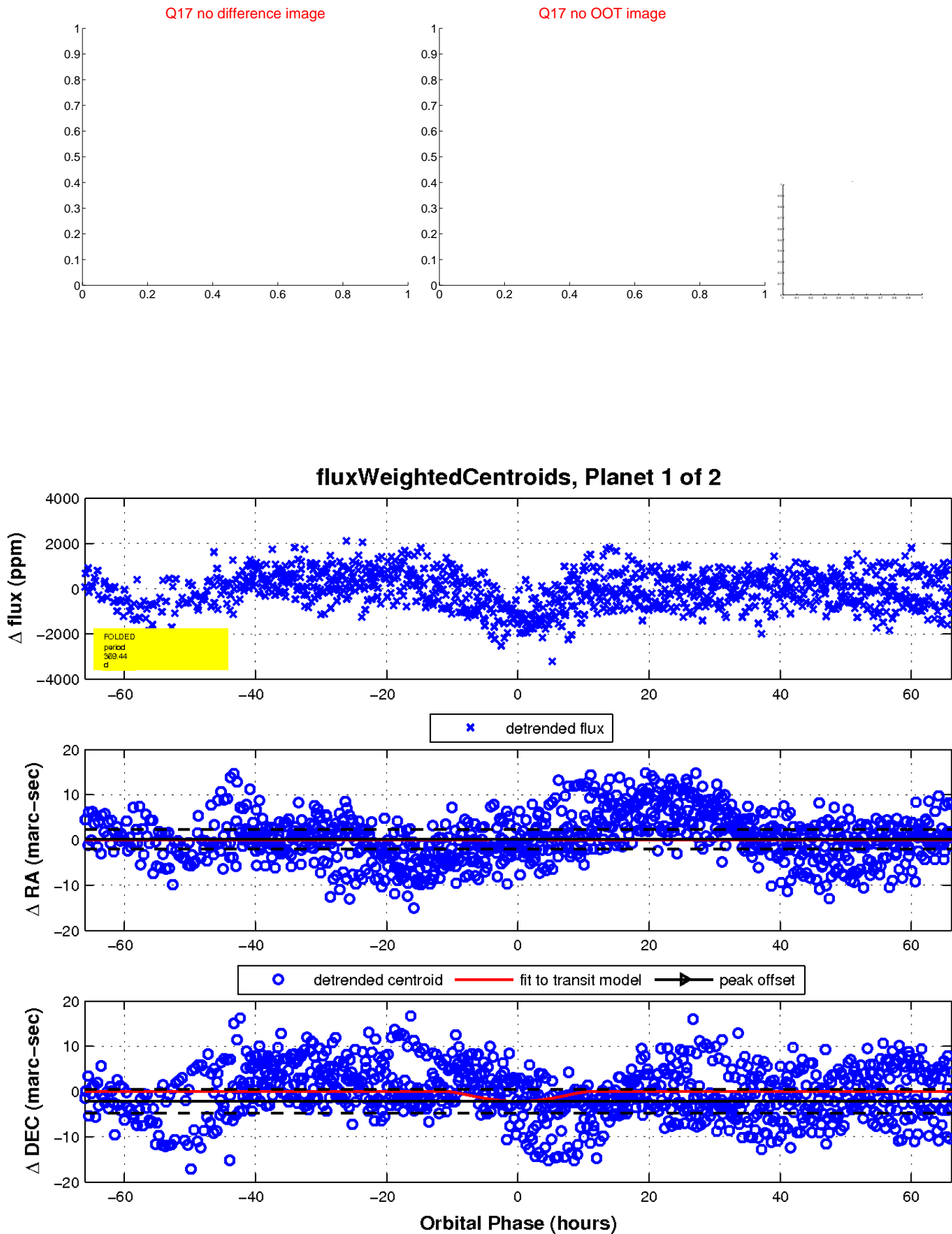
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

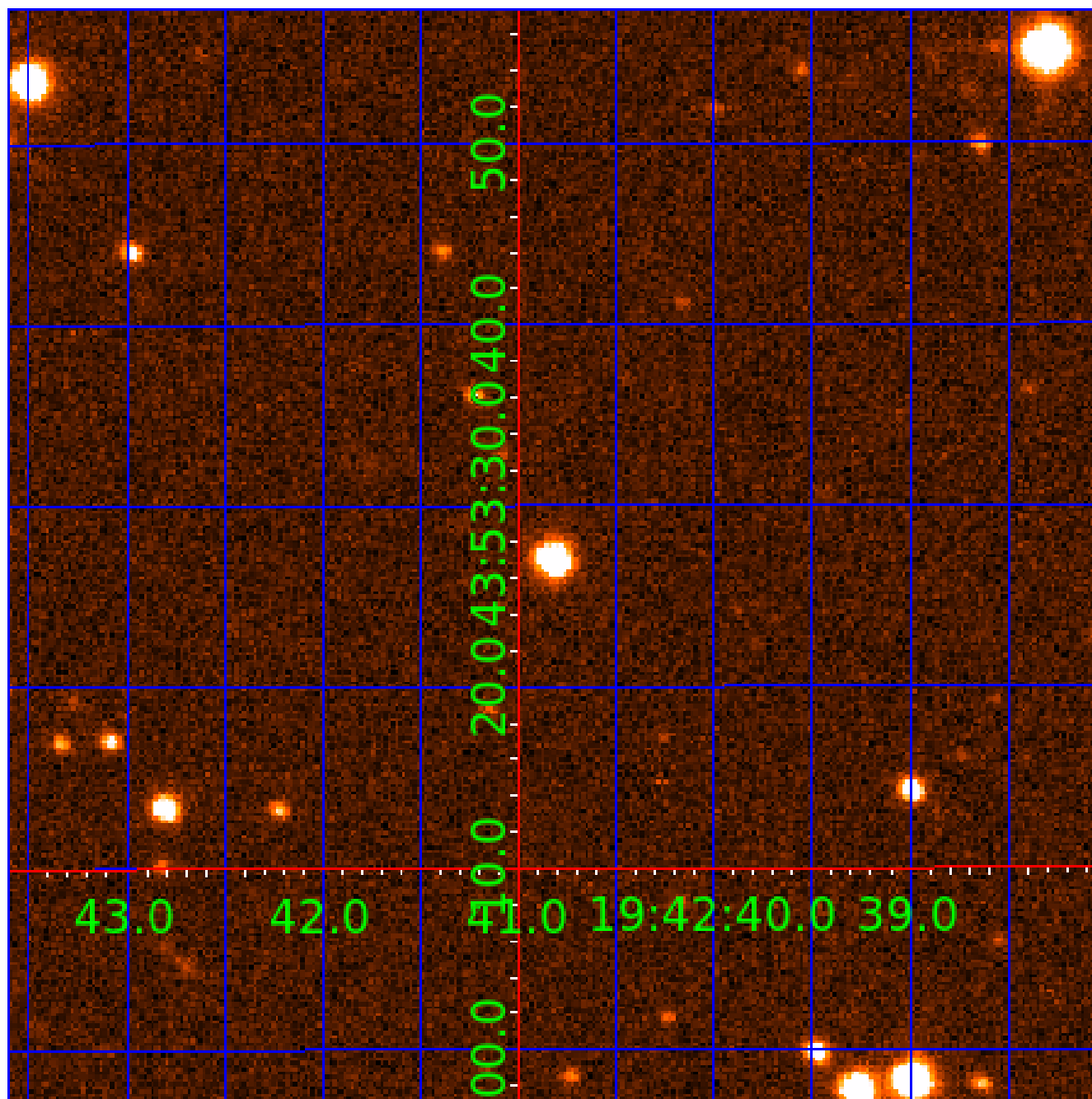


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008040343

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})
008040343-01	OBS	No	369.442461	233.136553	1403.9	22.049	12.6	12.7	0.96	5665	6.64	0.97
008040343-02	OBS	No	367.240154	173.215295	2026.3	15.212	11.5	14.4	0.96	5665	5.44	0.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008040343-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008040343-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

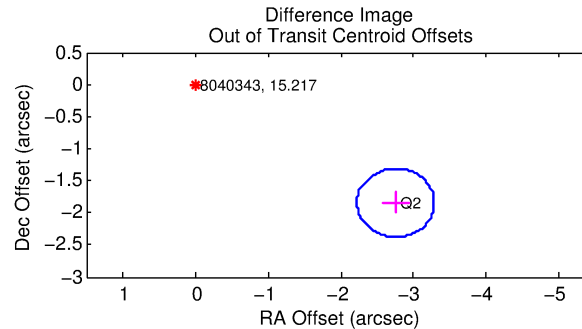
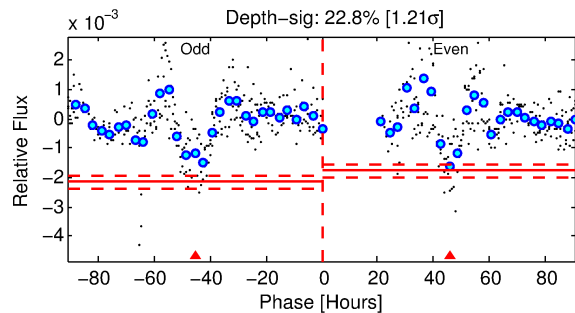
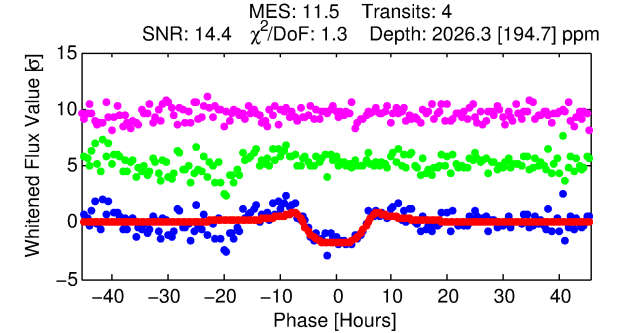
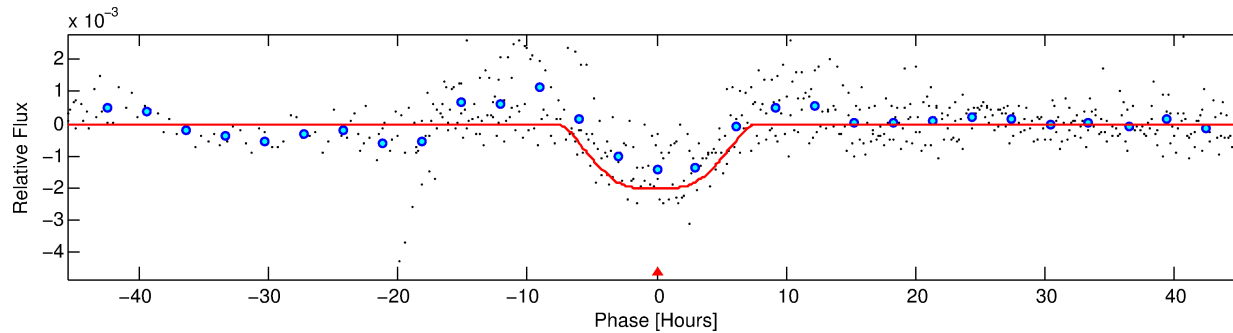
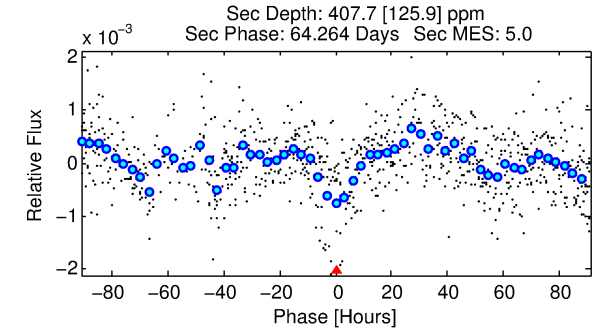
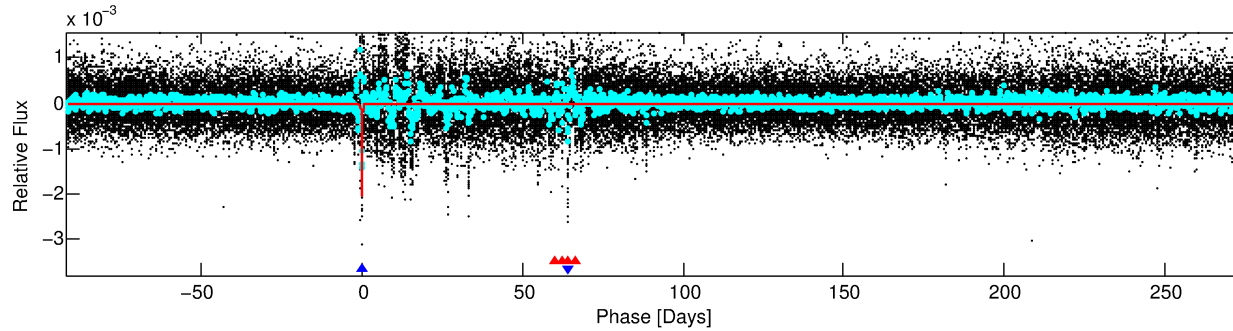
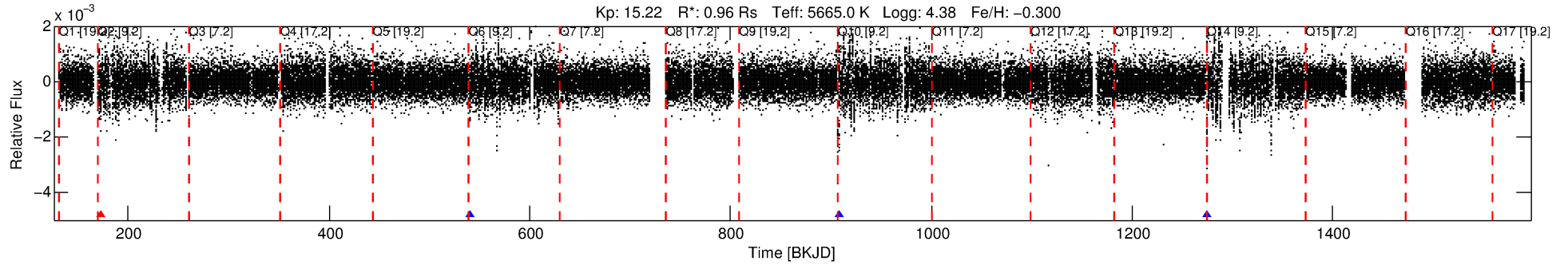
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008040343-02

No Significant Match Found

DV One-Page Summary

KIC: 8040343 Candidate: 2 of 2 Period: 367.240 d



DV Fit Results:

Period = 367.24015 [0.00929] d
Epoch = 173.2153 [0.0169] BKJD
Rp/R* = 0.0516 [0.0032]
a/R* = 87.51 [8.25]
b = 0.94 [0.01]
Seff = 0.97 [0.36]
Teq = 253 [23] K
Rp = 5.44 [1.56] Re
a = 0.9390 [0.2242] AU
Ag = 6693.86 [3234.64] [2.07σ]
Teff = 3543 [313] K [10.48σ]

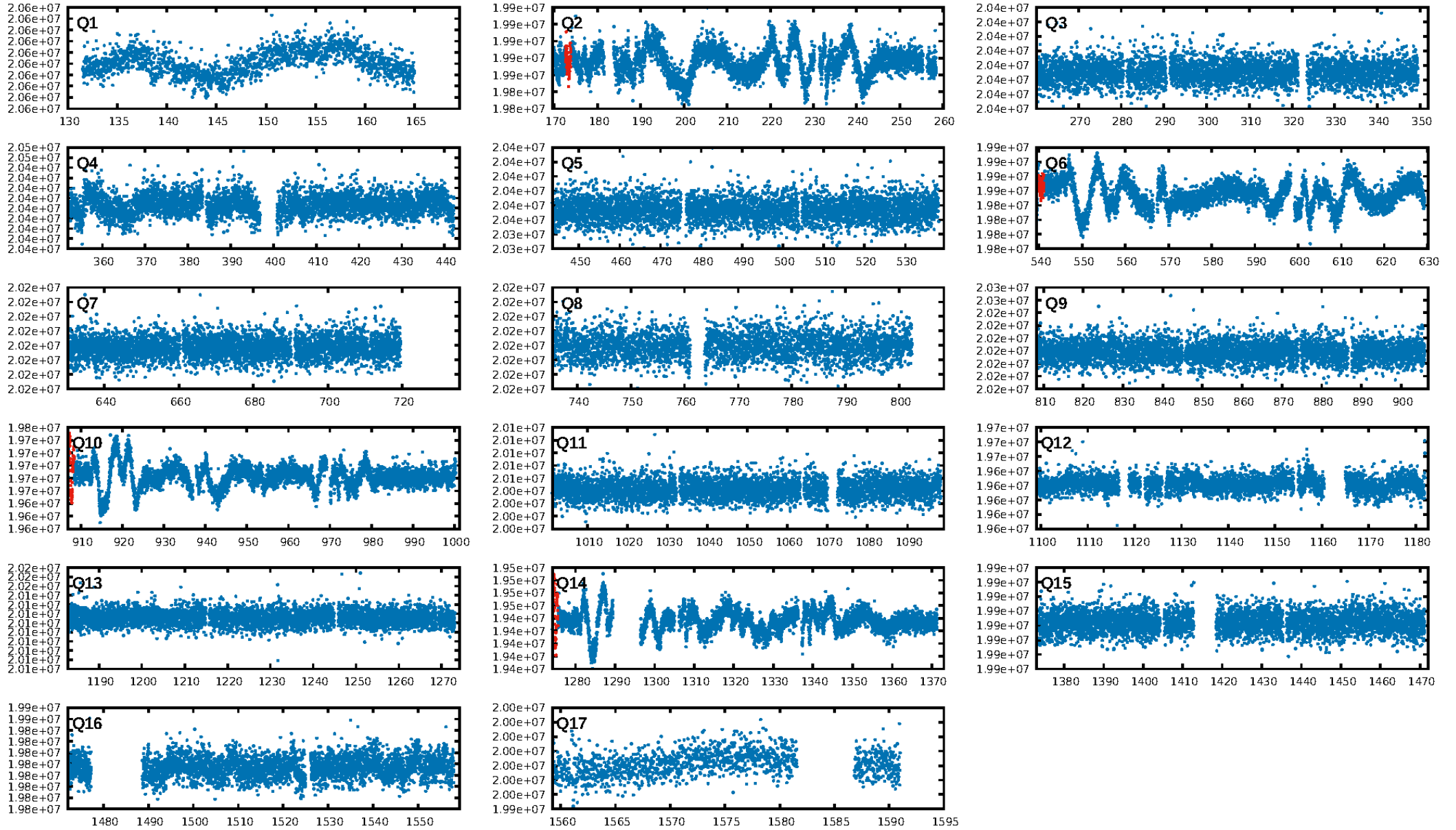
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 95.2% [1.97σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 93.1%
Bootstrap-pfa: 3.68e-21
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 0.3518
Centroid-sig: 3.9%
Centroid-so: 1.950 arcsec [1.81σ]
OotOffset-rm: 3.314 arcsec [18.68σ]
KicOffset-rm: 3.322 arcsec [18.89σ]
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]

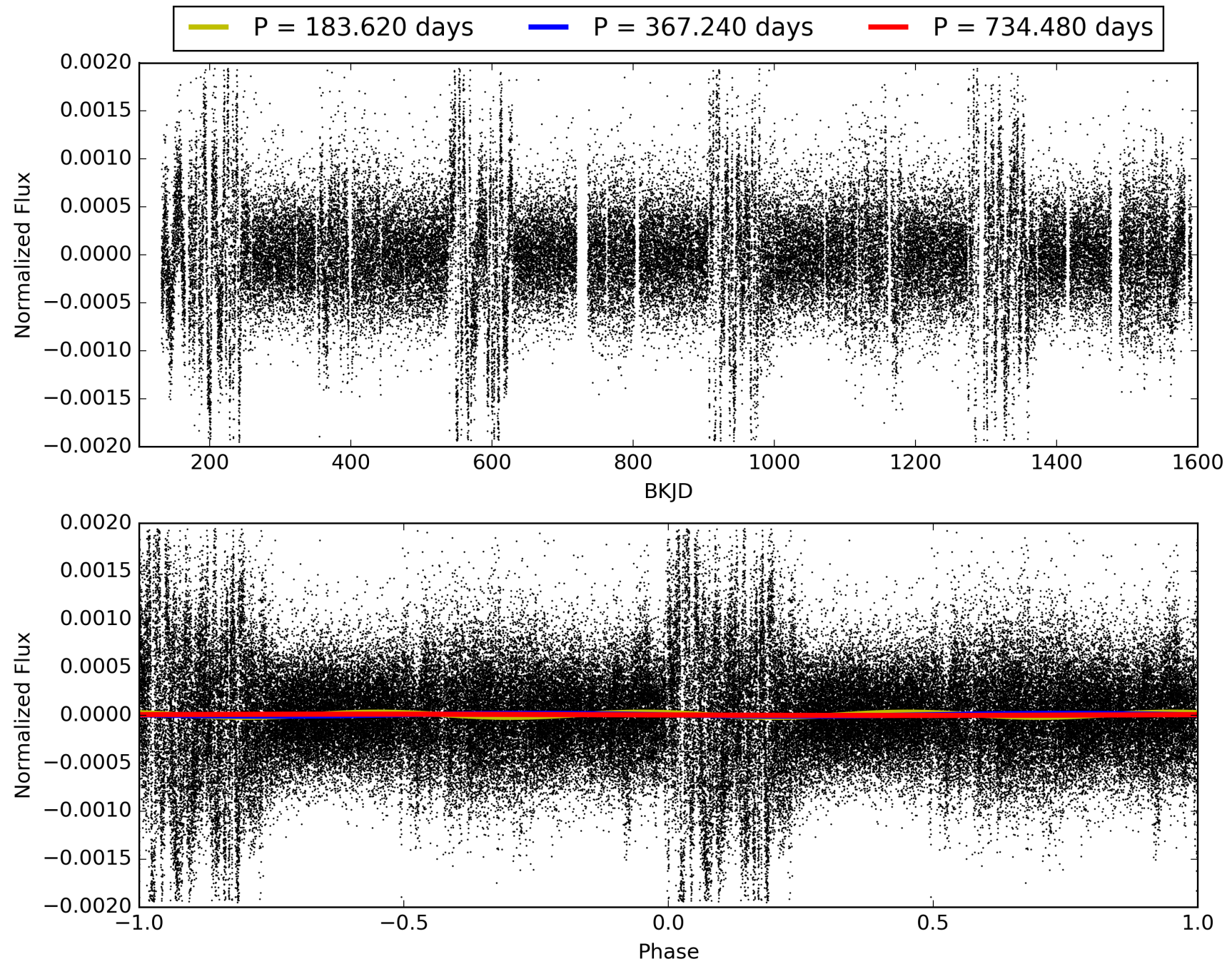
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:52:48 Z

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

TCE 008040343-02, PDC Light Curves

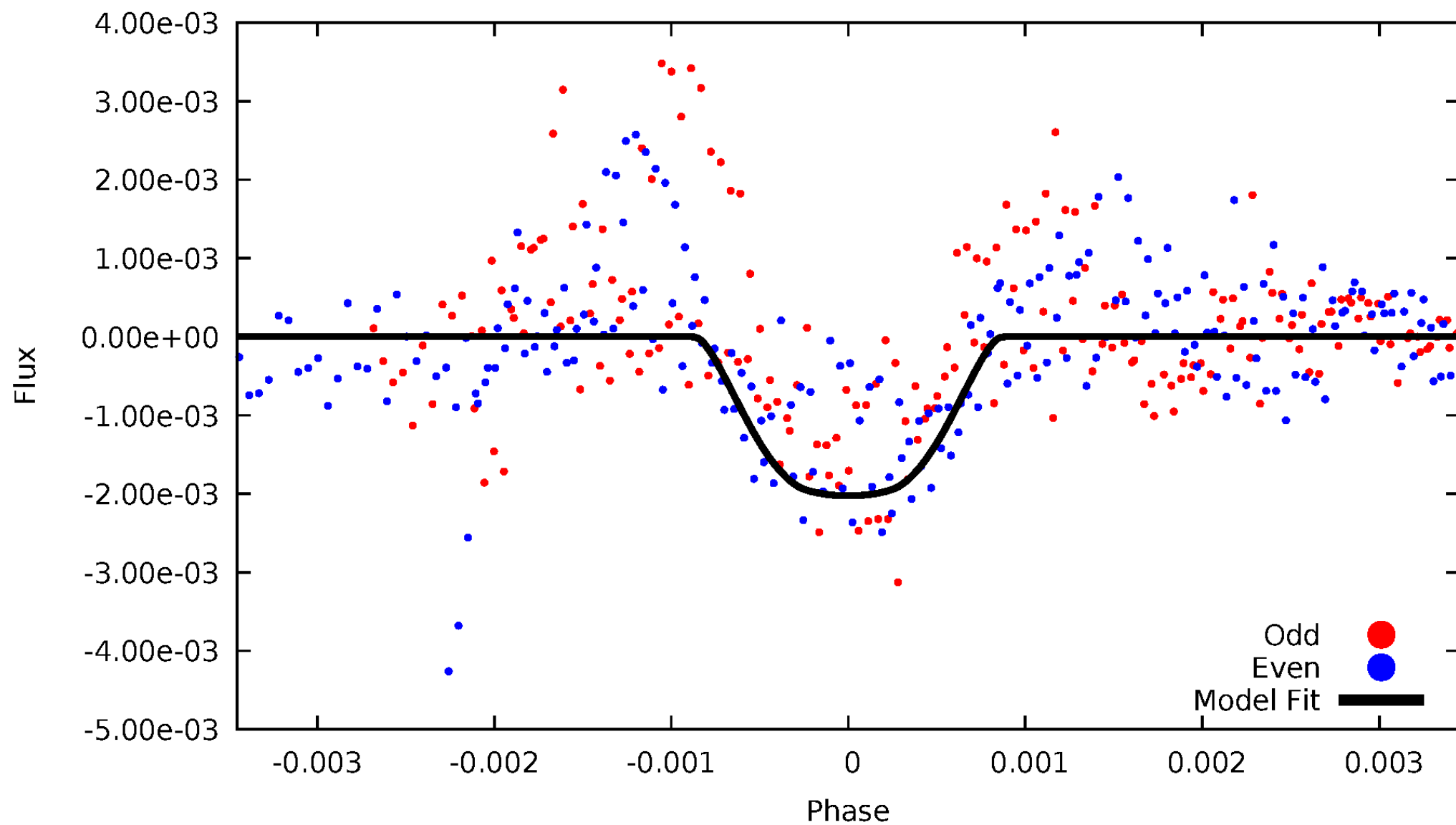


TCE 008040343-02



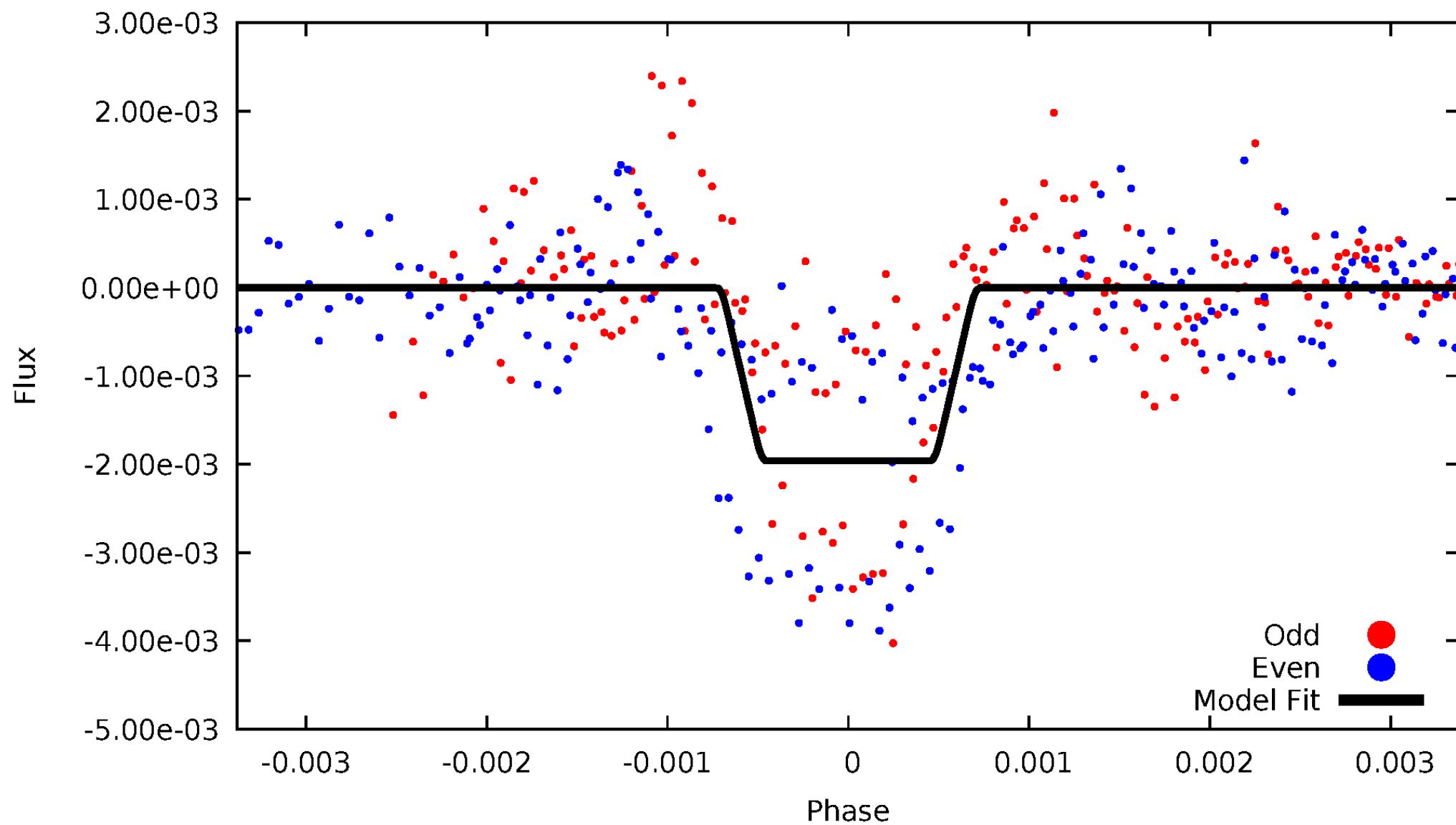
DV Odd/Even

TCE 008040343-02



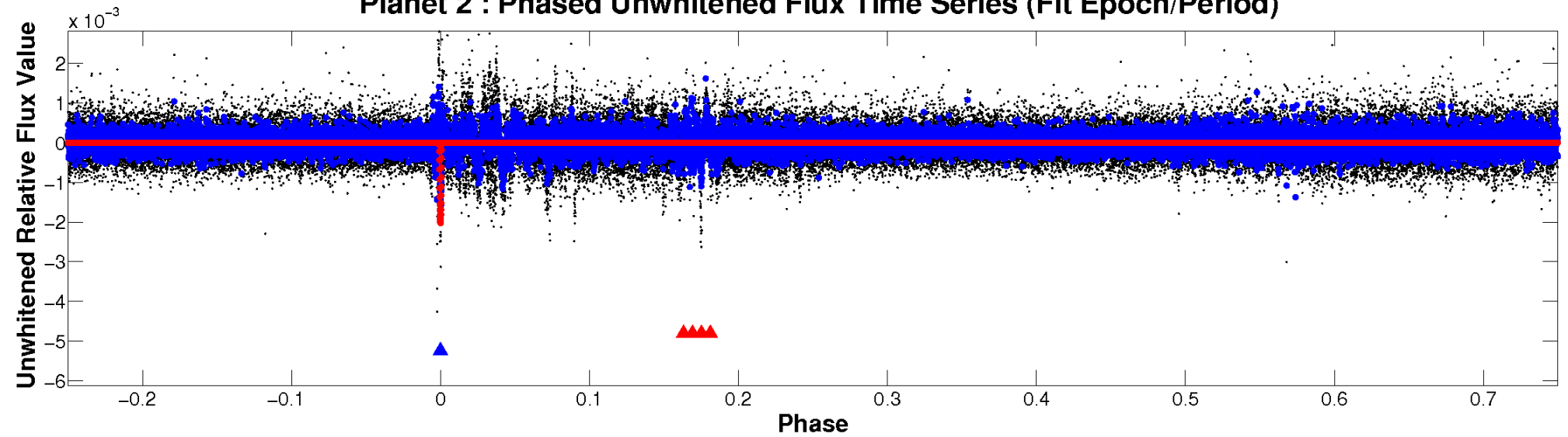
ALT Odd/Even

TCE 008040343-02

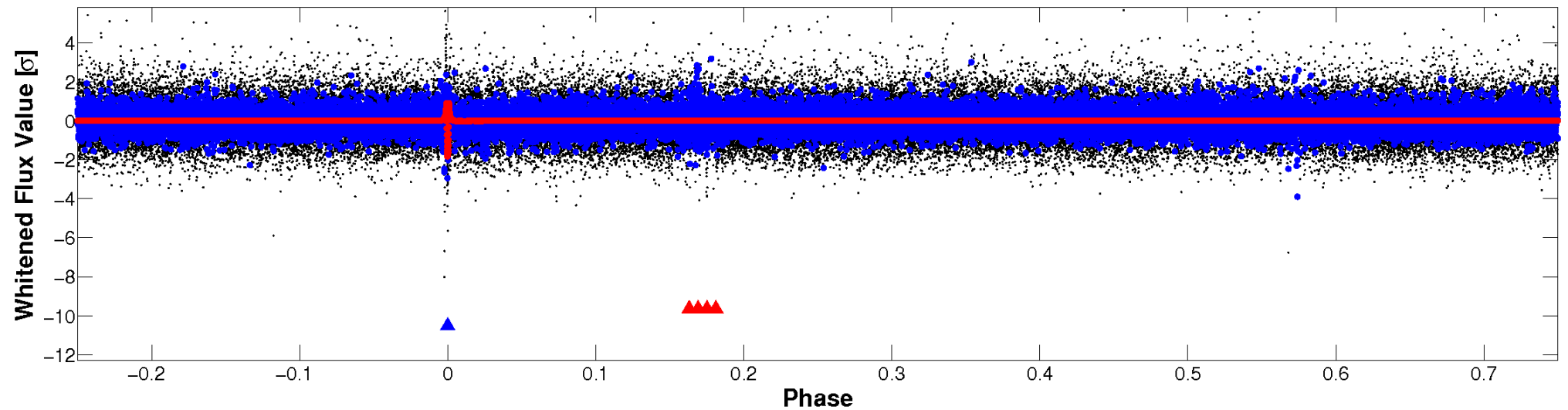


Non-Whitened Vs. Whitened Light Curve

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

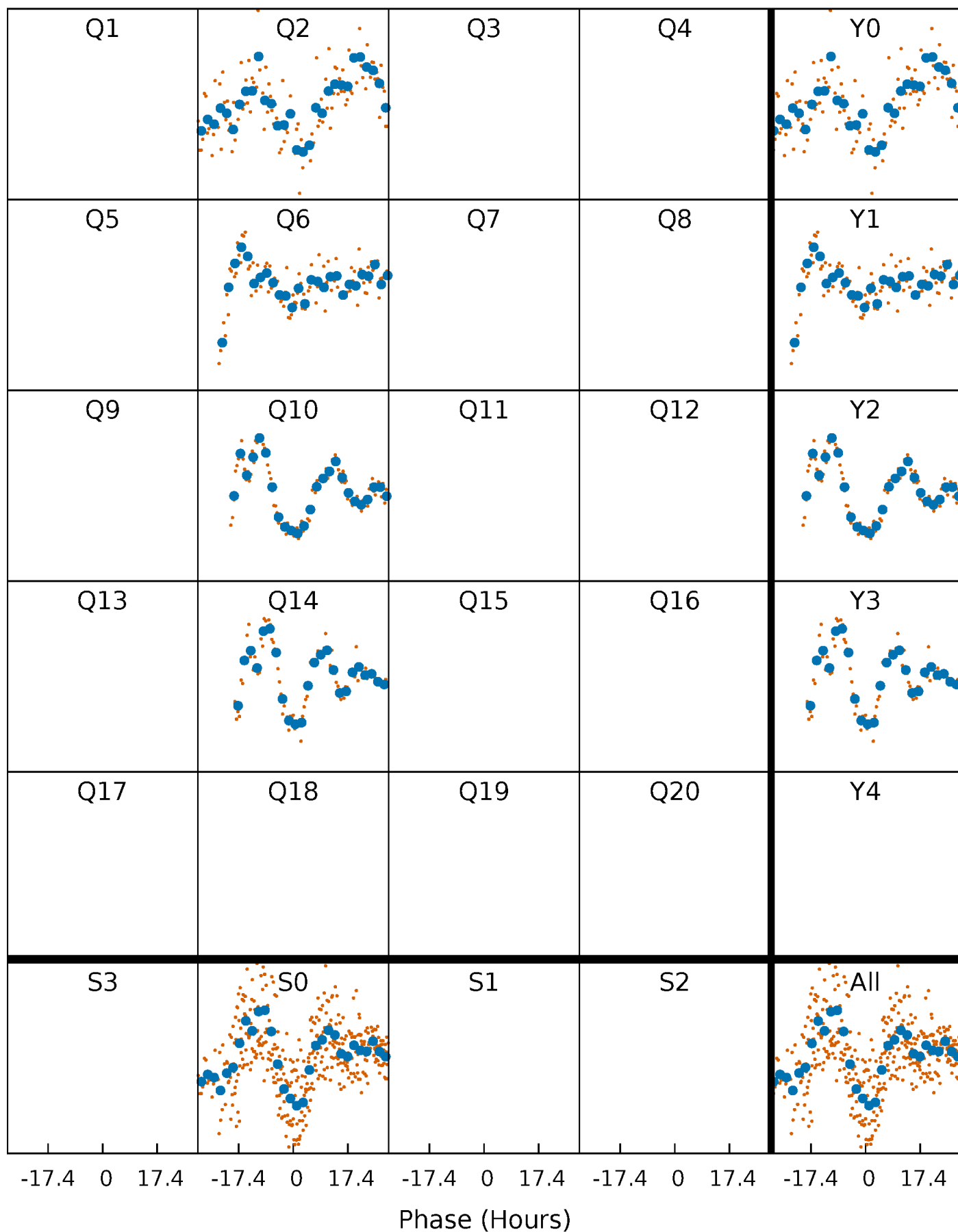


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



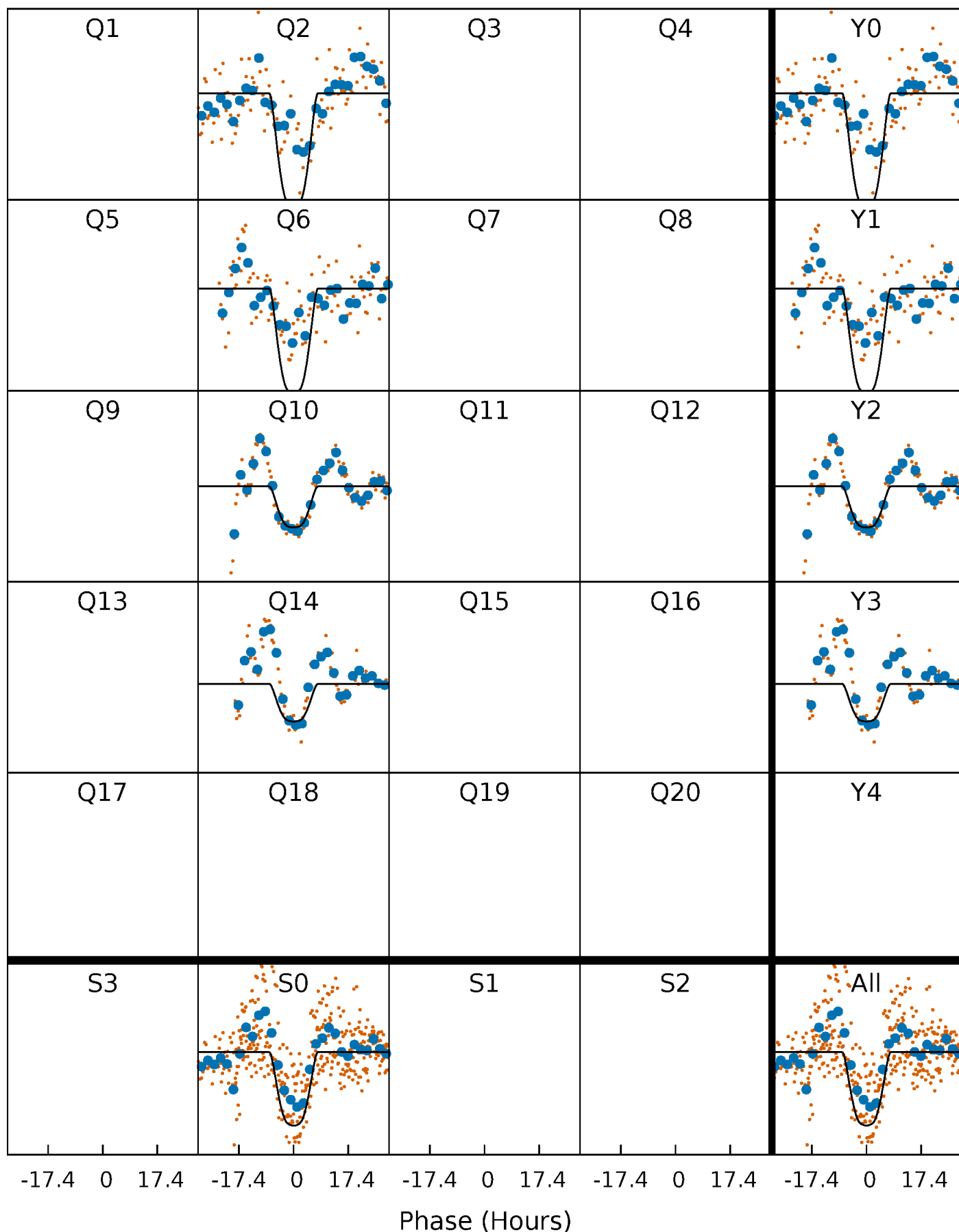
PDC Quarter-Phased Transit Curves

TCE 008040343-02 P=367.240154 Days $T_0=173.215295$ (BKJD)



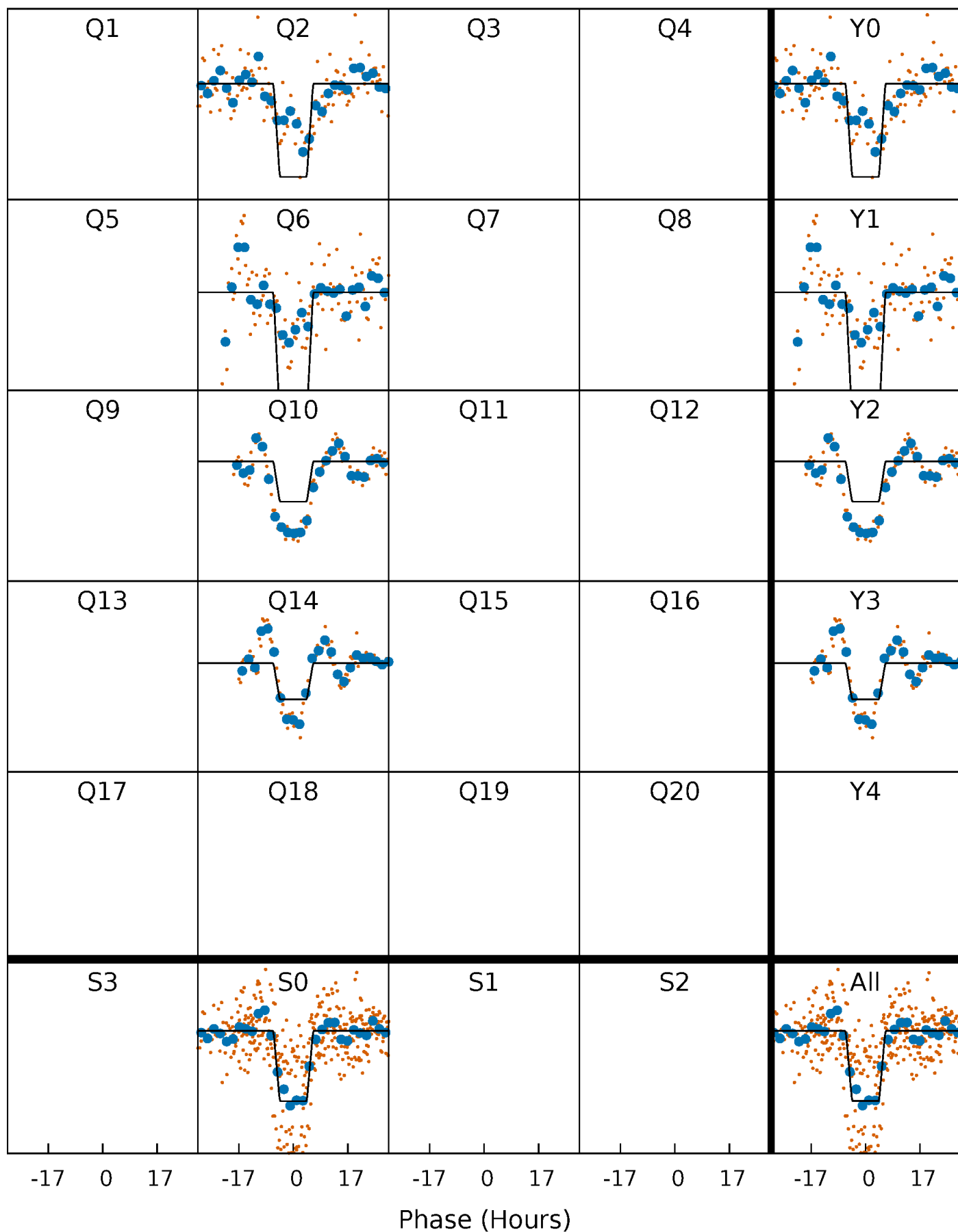
DV Quarter-Phased Transit Curves

TCE 008040343-02 P=367.240154 Days $T_0=173.215295$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

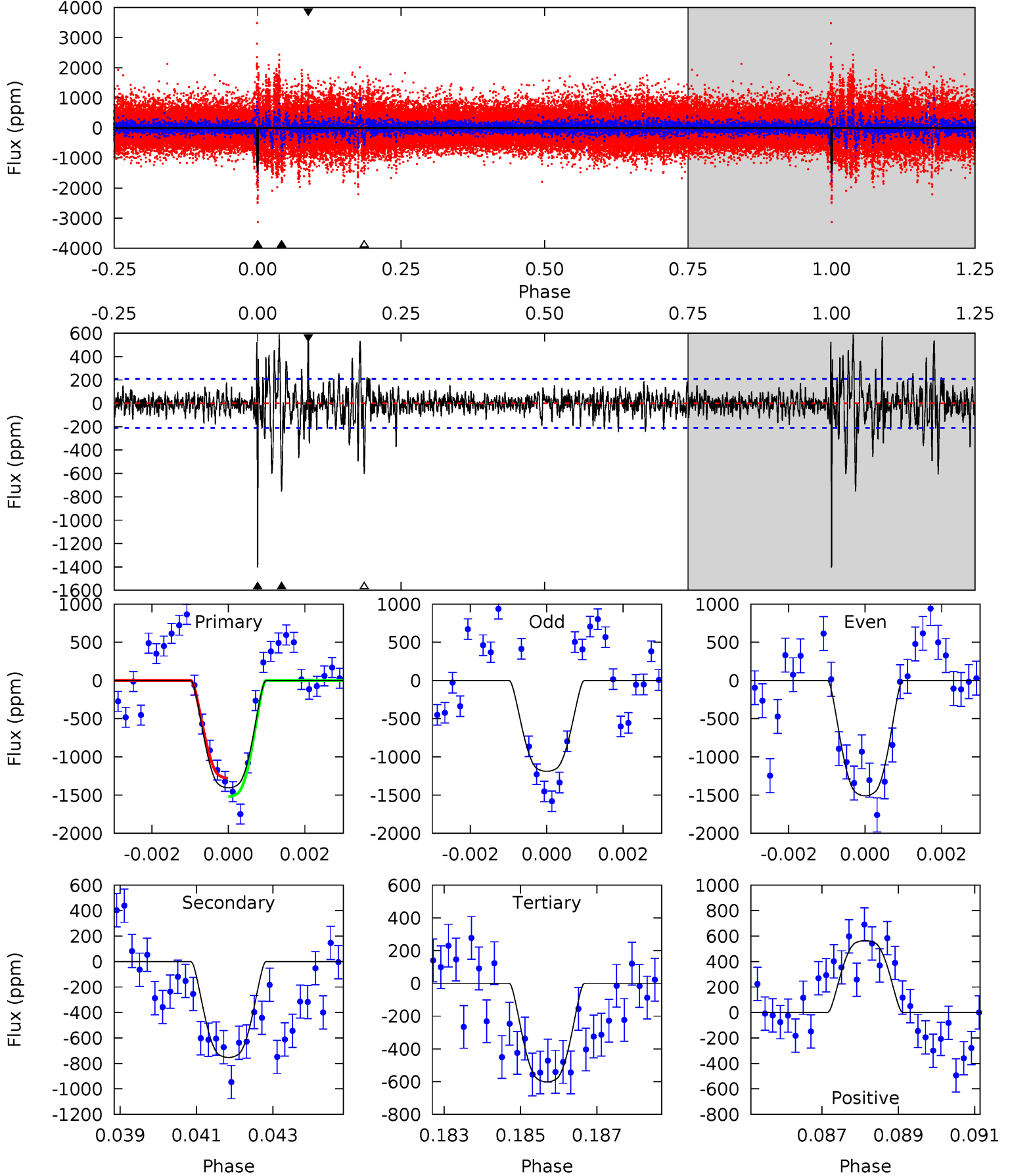
TCE 008040343-02 P=367.245563 Days $T_0=173.210981$ (BKJD)



DV Model-Shift Uniqueness Test

008040343-02, P = 367.240154 Days, E = 173.215295 Days

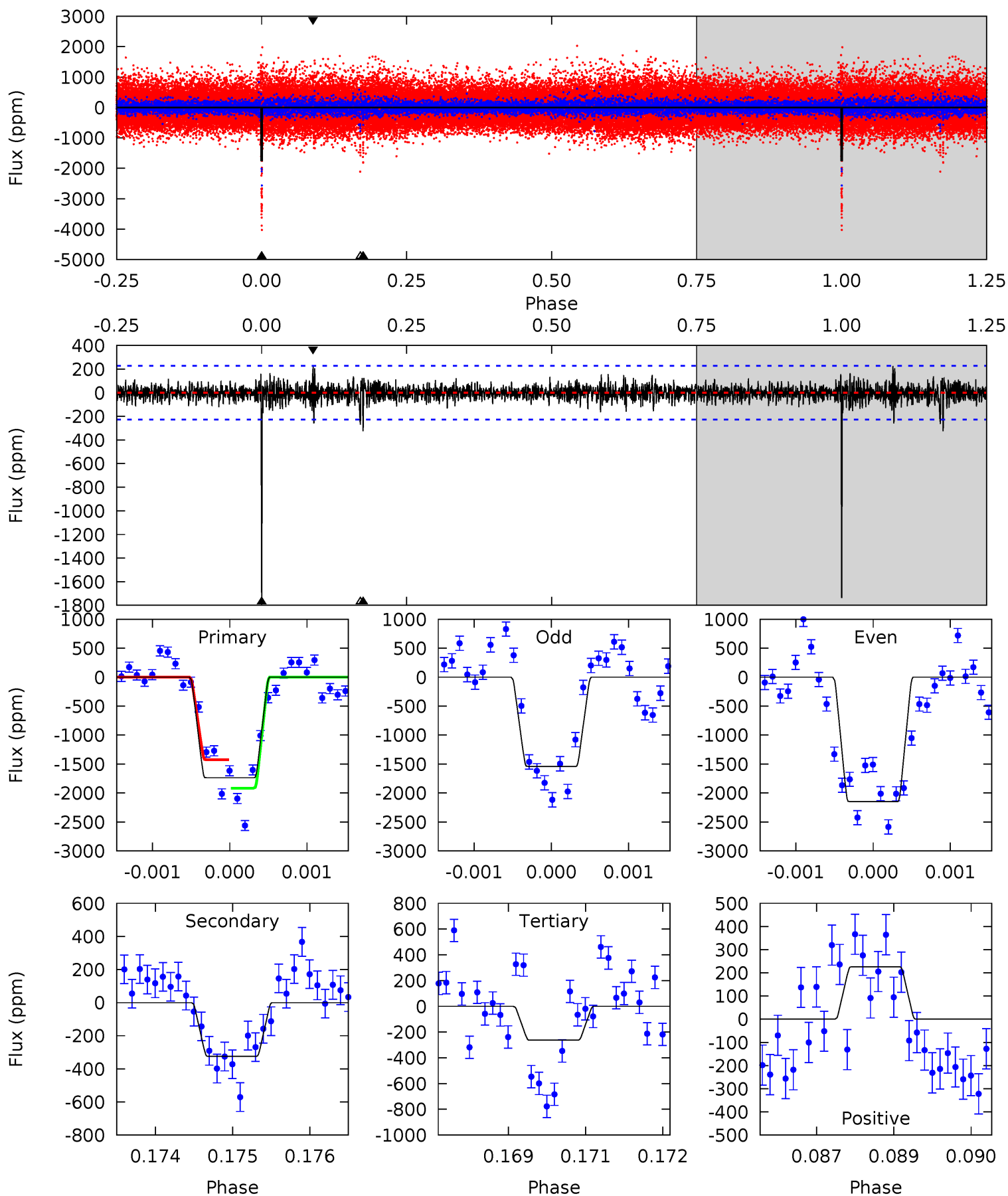
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.8	19.2	15.3	14.4	5.35	3.12	2.55	20.5	21.4	3.86	4.80	4.16	1.12	0.30	3.06



Alt Model-Shift Uniqueness Test

008040343-02, P = 367.245563 Days, E = 173.210981 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.2	7.68	6.23	5.35	5.39	3.19	1.09	34.9	35.8	1.45	2.33	7.62	1.08	0.12	5.74



Stellar Parameters For KIC 008040343

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5665^{+169}_{-152}	$4.382^{+0.158}_{-0.193}$	$-0.300^{+0.300}_{-0.300}$	$0.965^{+0.271}_{-0.158}$	$0.819^{+0.124}_{-0.062}$	$1.283^{+0.946}_{-0.625}$
	+3%/-3%	+4%/-4%	+100%/-100%	+28%/-16%	+15%/-8%	+74%/-49%
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 008040343-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-753 ± 39	$5.51^{+0.82}_{-0.68}$	355^{+26}_{-21}	4350^{+156}_{-155}	12217^{+3695}_{-3032}
Alt.	-324 ± 42	$4.70^{+0.77}_{-0.64}$	354^{+25}_{-21}	3935^{+180}_{-163}	7188^{+2740}_{-2197}

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

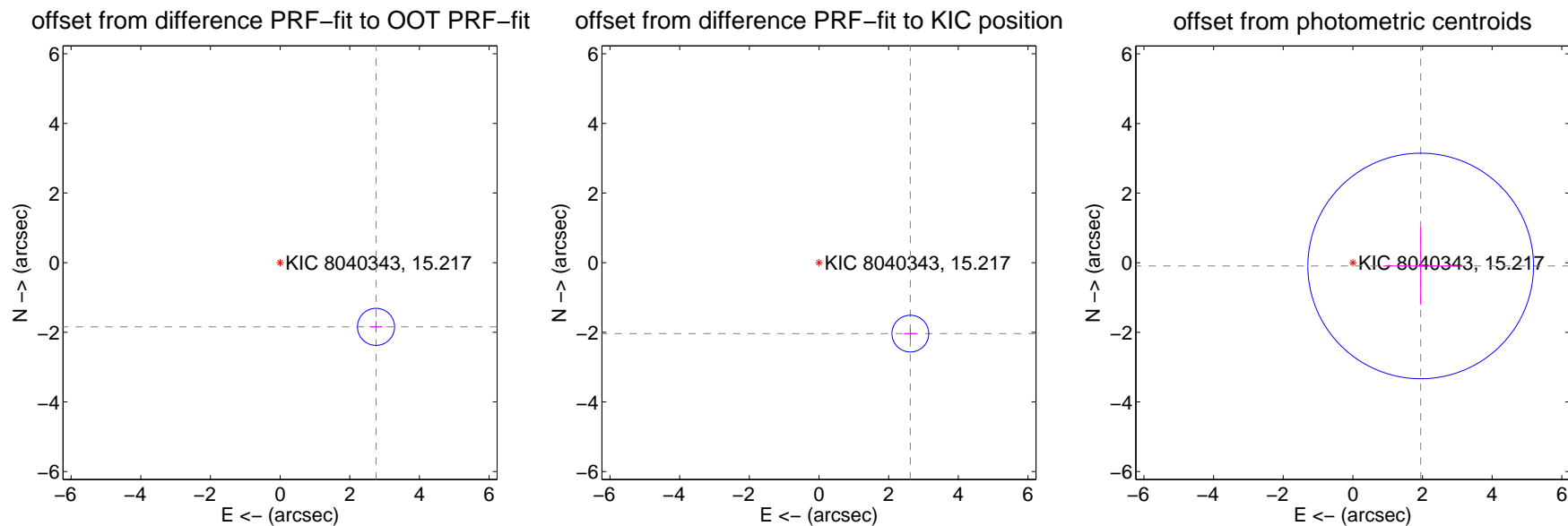
DV Centroid Data

Supplemental centroid analysis for 008040343-02. Kepler magnitude: 15.22. Transit SNR 14.39

There are 1 quarters with good PRF difference image offsets

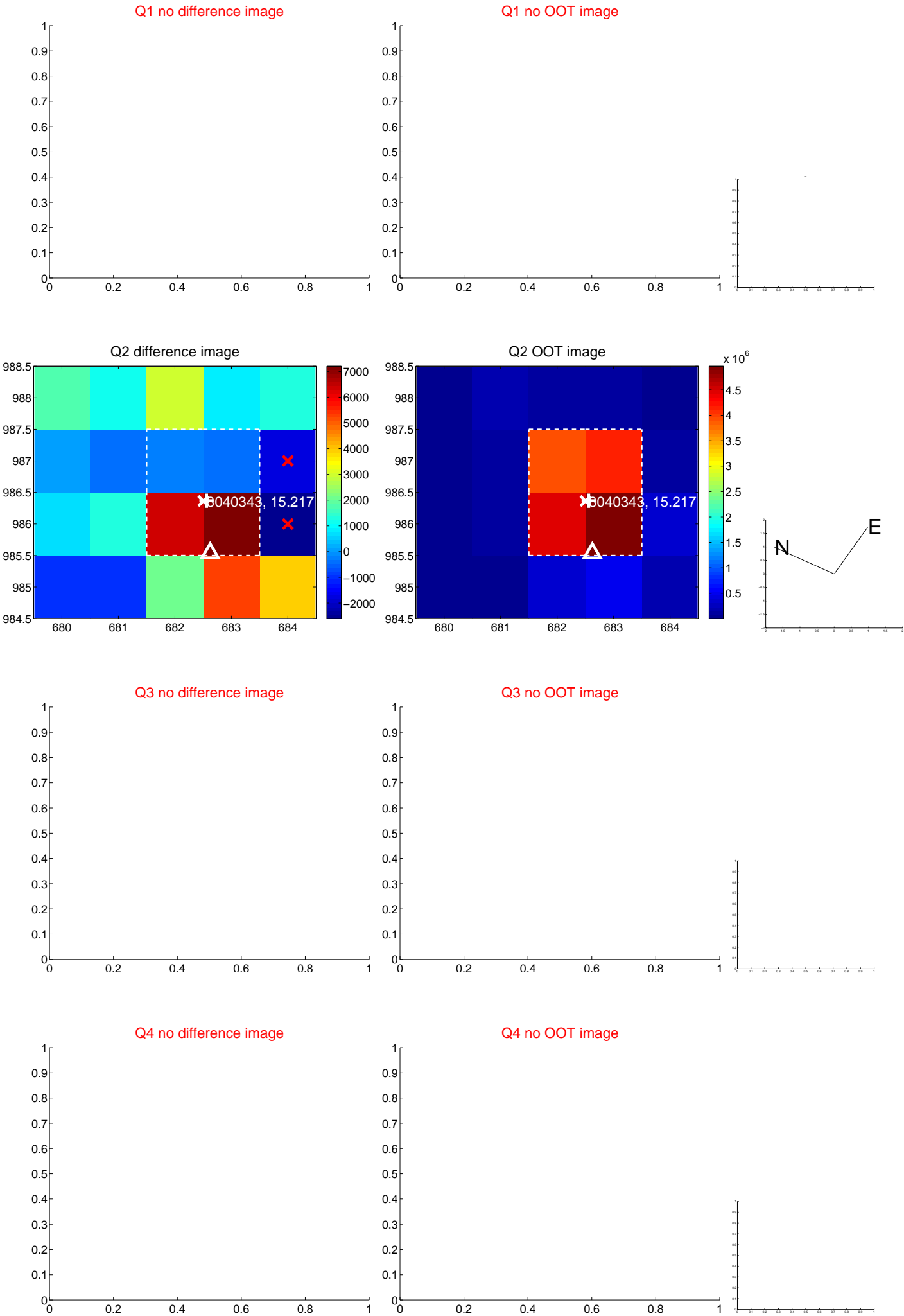
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.314 ± 0.177	18.68	-2.754 ± 0.184	-1.844 ± 0.161
PRF-fit source offset from KIC position	3.322 ± 0.176	18.89	-2.623 ± 0.184	-2.039 ± 0.161
photometric centroid source offset	1.95 ± 1.08	1.81	-1.95 ± 1.08	-0.09 ± 1.12



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.



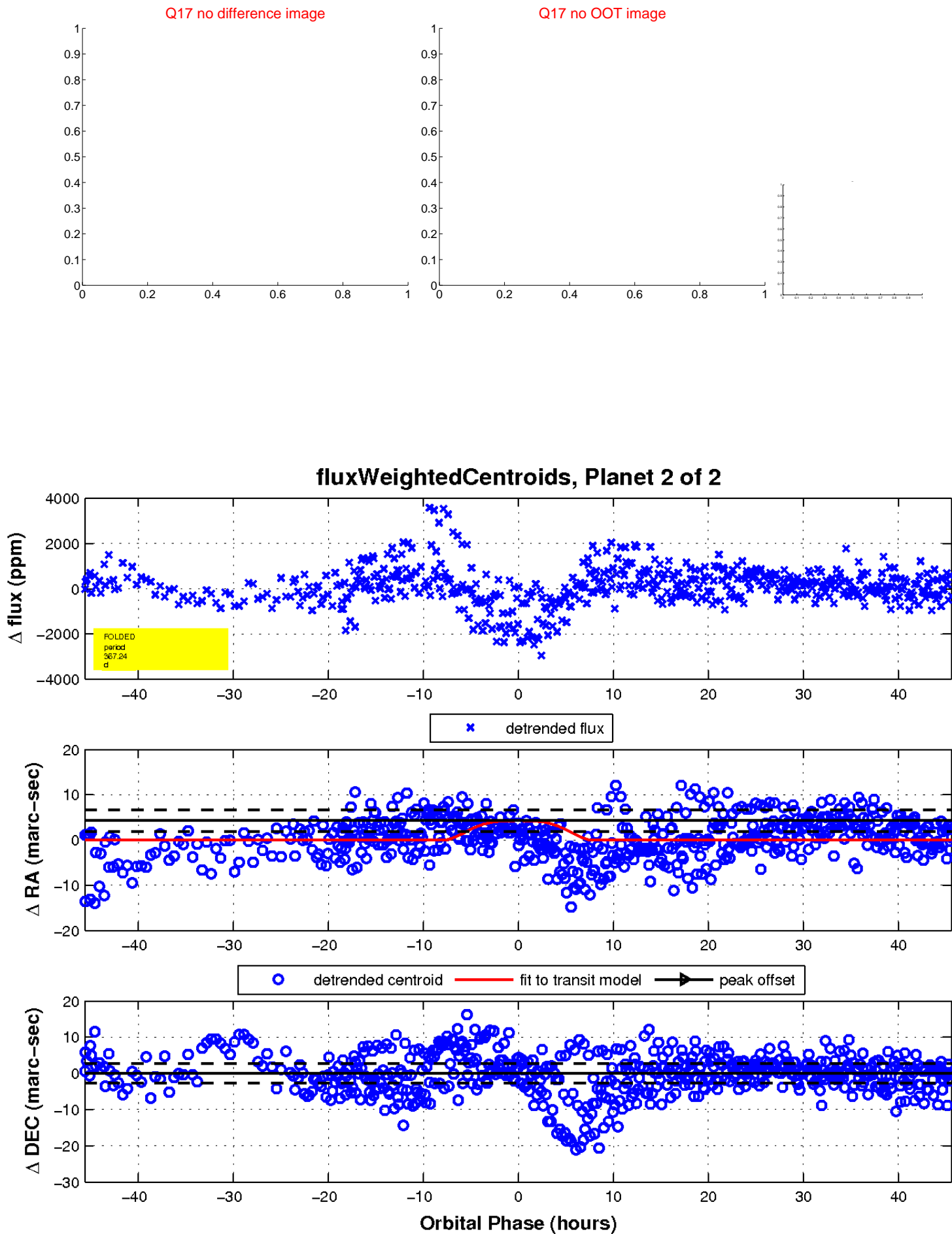
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

