

KIC 003938173

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})
003938173-01	OBS	No	447.310243	201.431551	396.4	17.104	11.0	6.9	3.20	5370	6.87	4.27
003938173-02	OBS	No	229.434920	152.997197	712.9	2.571	11.1	7.4	3.20	5370	9.48	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003938173-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003938173-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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

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

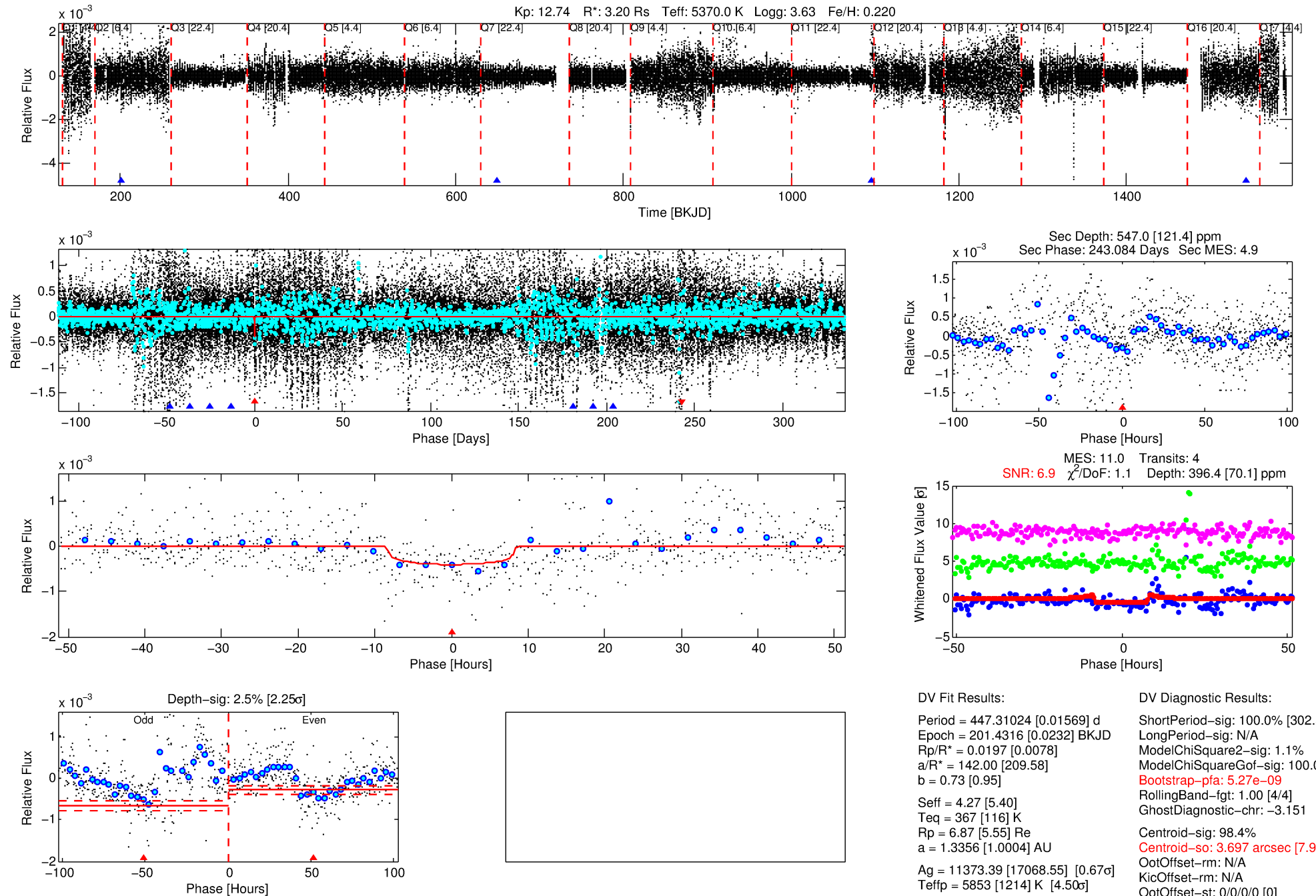
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003938173-01

No Significant Match Found

DV One-Page Summary

KIC: 3938173 Candidate: 1 of 2 Period: 447.310 d



DV Fit Results:

Period = 447.31024 [0.01569] d
 Epoch = 201.4316 [0.0232] BKJD
 Rp/R* = 0.0197 [0.0078]
 a/R* = 142.00 [209.58]
 b = 0.73 [0.95]
 Seff = 4.27 [5.40]
 Teq = 367 [116] K
 Rp = 6.87 [5.55] Re
 a = 1.3356 [1.0004] AU
 Ag = 11373.39 [17068.55] [0.67 σ]
 Teffp = 5853 [1214] K [4.50 σ]

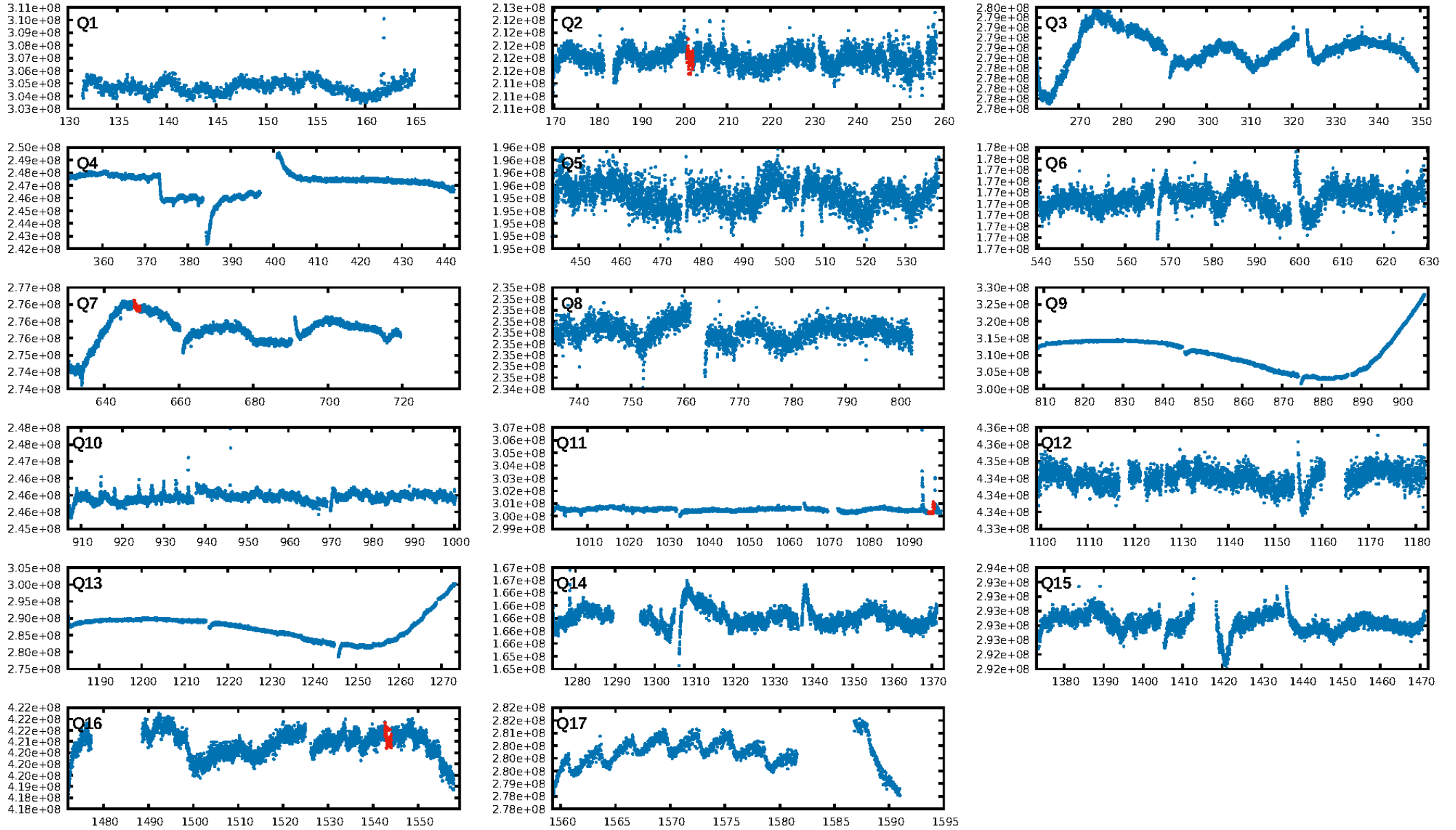
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [302.32 σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: 1.1%
 ModelChiSquareGof-sig: 100.0%
 Bootstrap-pfa: 5.27e-09
 RollingBand-fgt: 1.00 [4/4]
 GhostDiagnostic-chr: -3.151
 Centroid-sig: 98.4%
 Centroid-so: 3.697 arcsec [7.92 σ]
 OotOffset-rm: N/A
 KicOffset-rm: N/A
 OotOffset-st: 0/0/0/0 [0]
 KicOffset-st: 0/0/0/0 [0]
 DiffImageQuality-fgm: N/A
 DiffImageOverlap-fno: 1.00 [2/2]

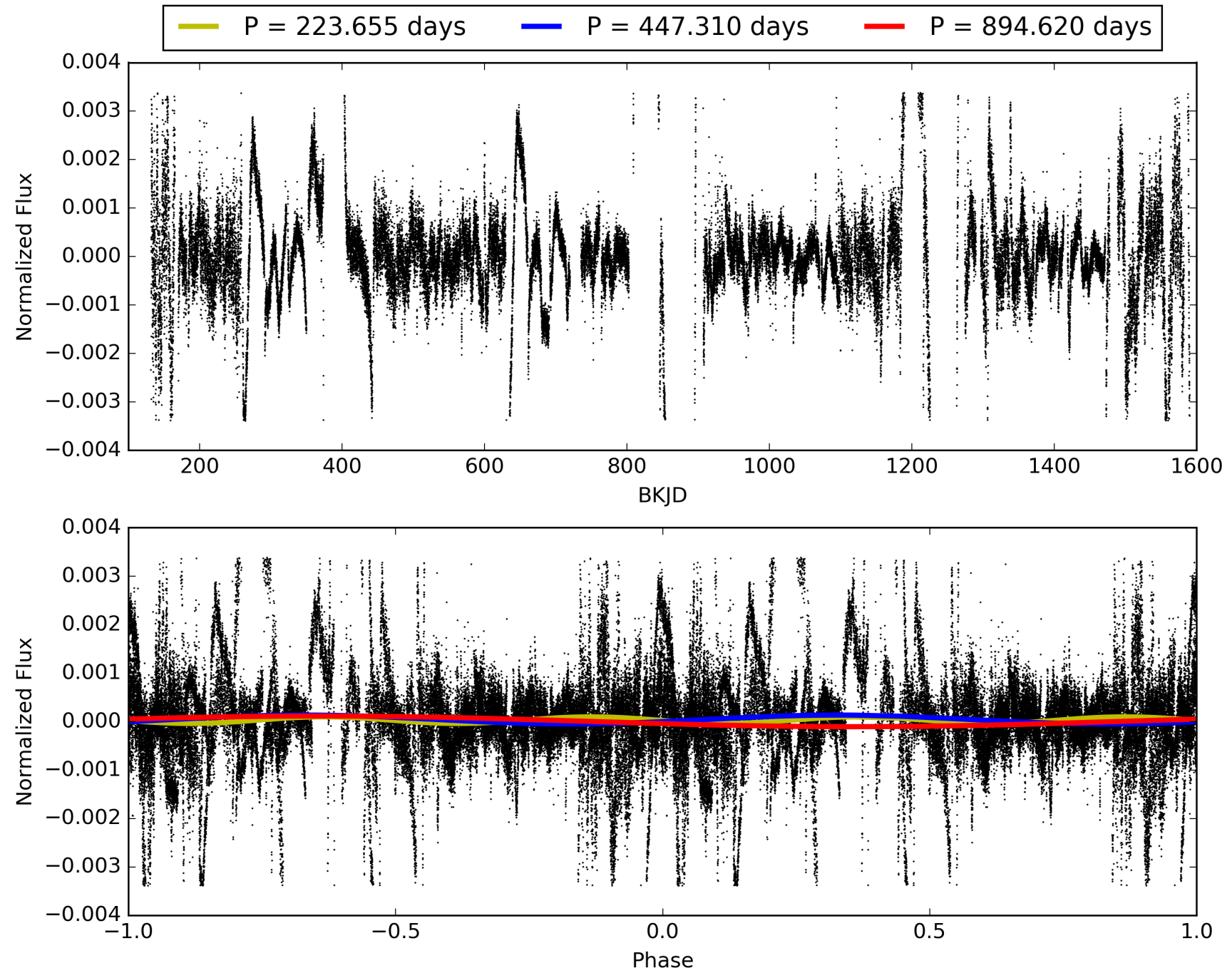
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:34:32 Z

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

TCE 003938173-01, PDC Light Curves

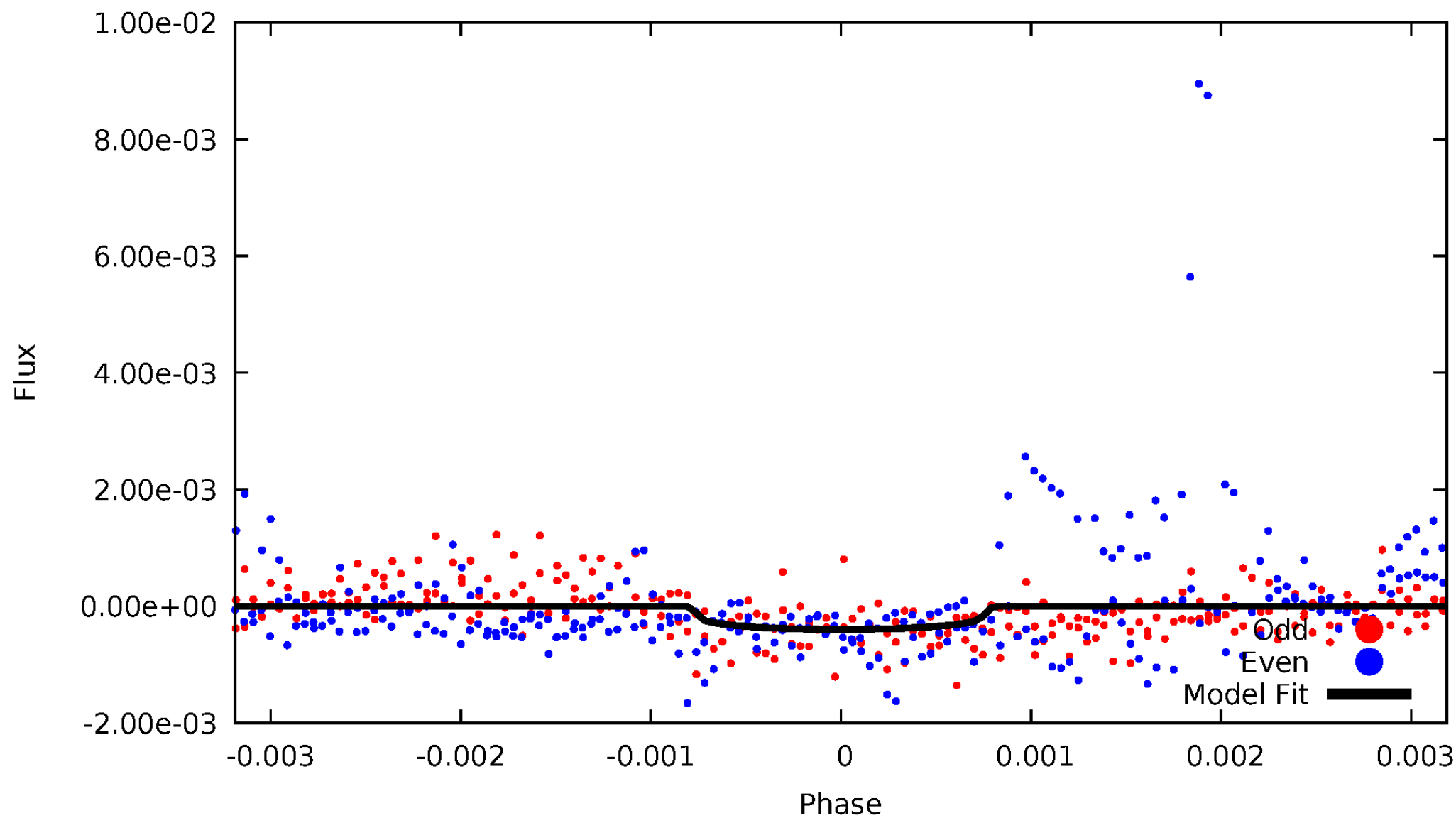


TCE 003938173-01



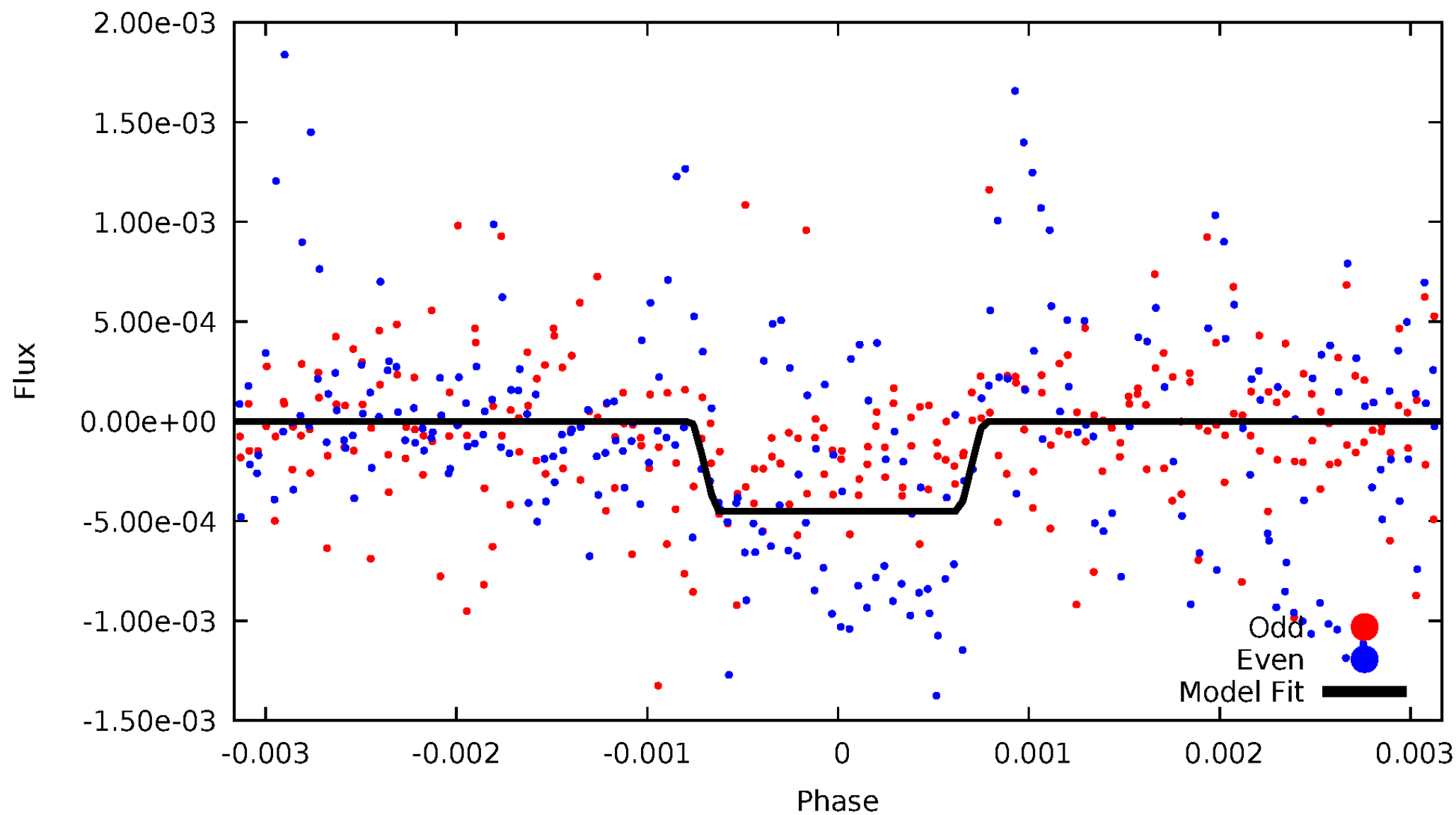
DV Odd/Even

TCE 003938173-01



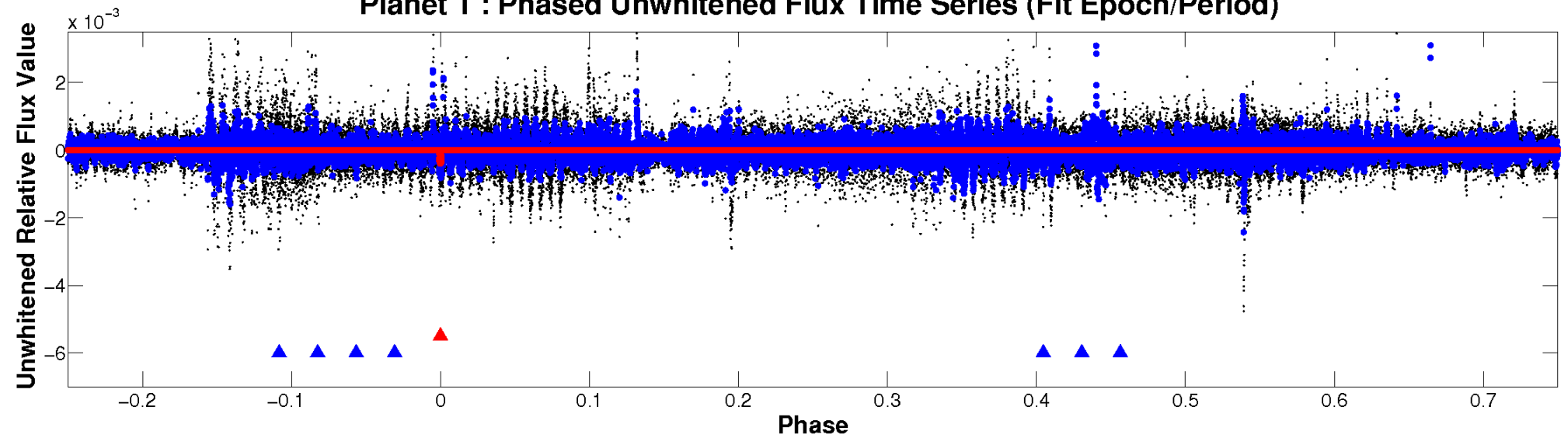
ALT Odd/Even

TCE 003938173-01

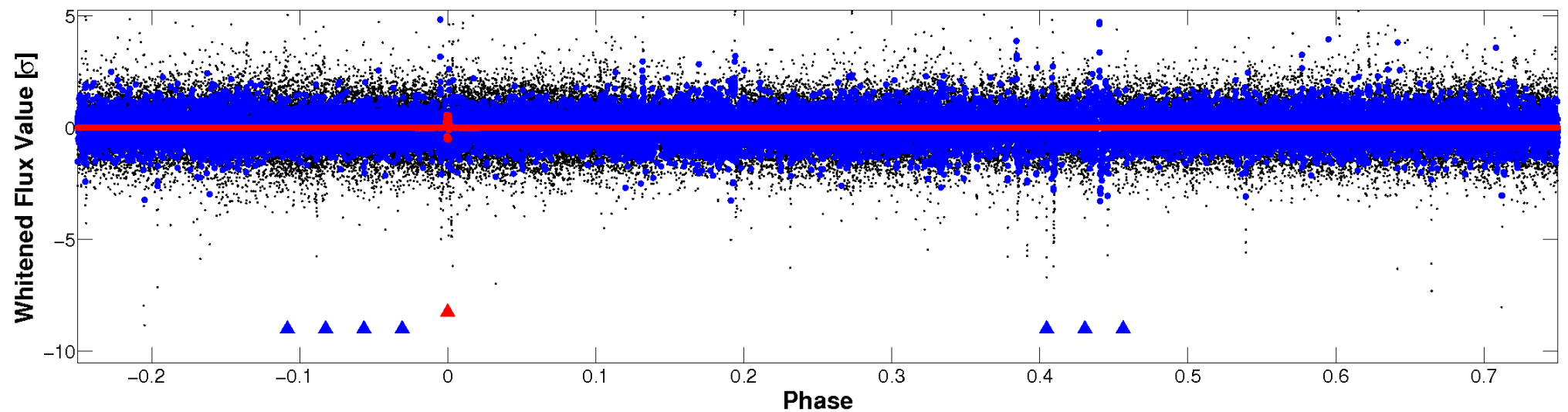


Non-Whitened Vs. Whitened Light Curve

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

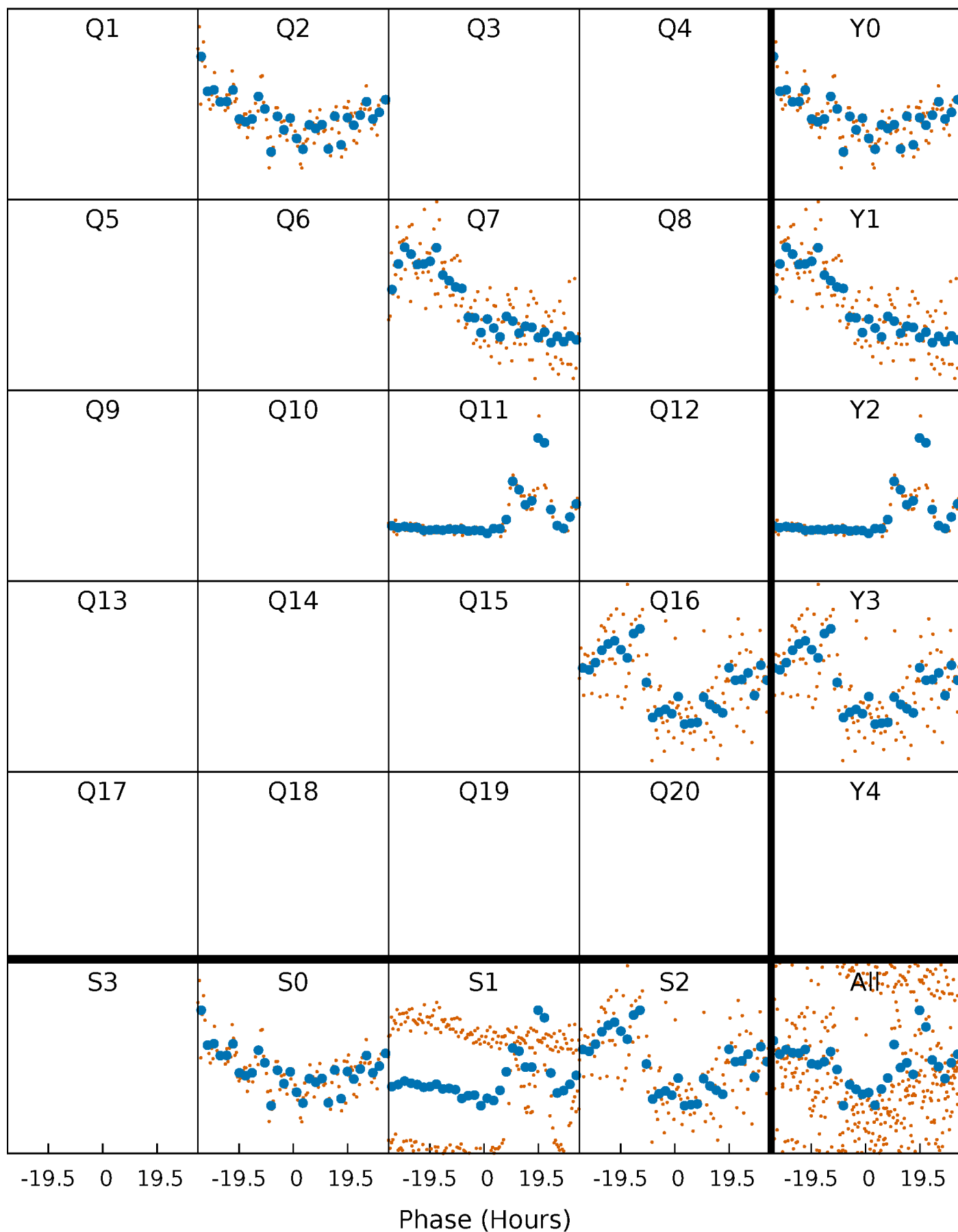


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



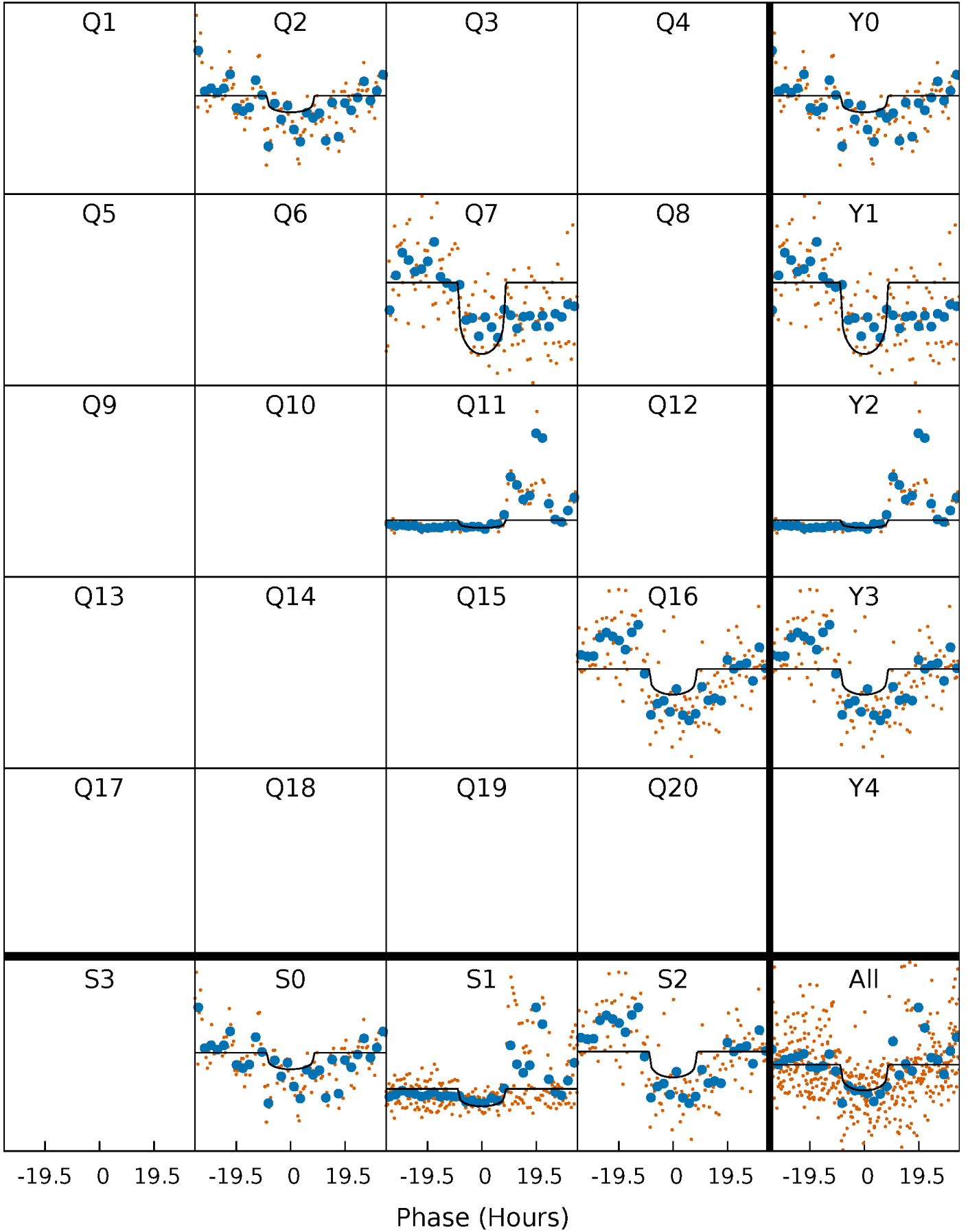
PDC Quarter-Phased Transit Curves

TCE 003938173-01 P=447.310243 Days $T_0=201.431552$ (BKJD)



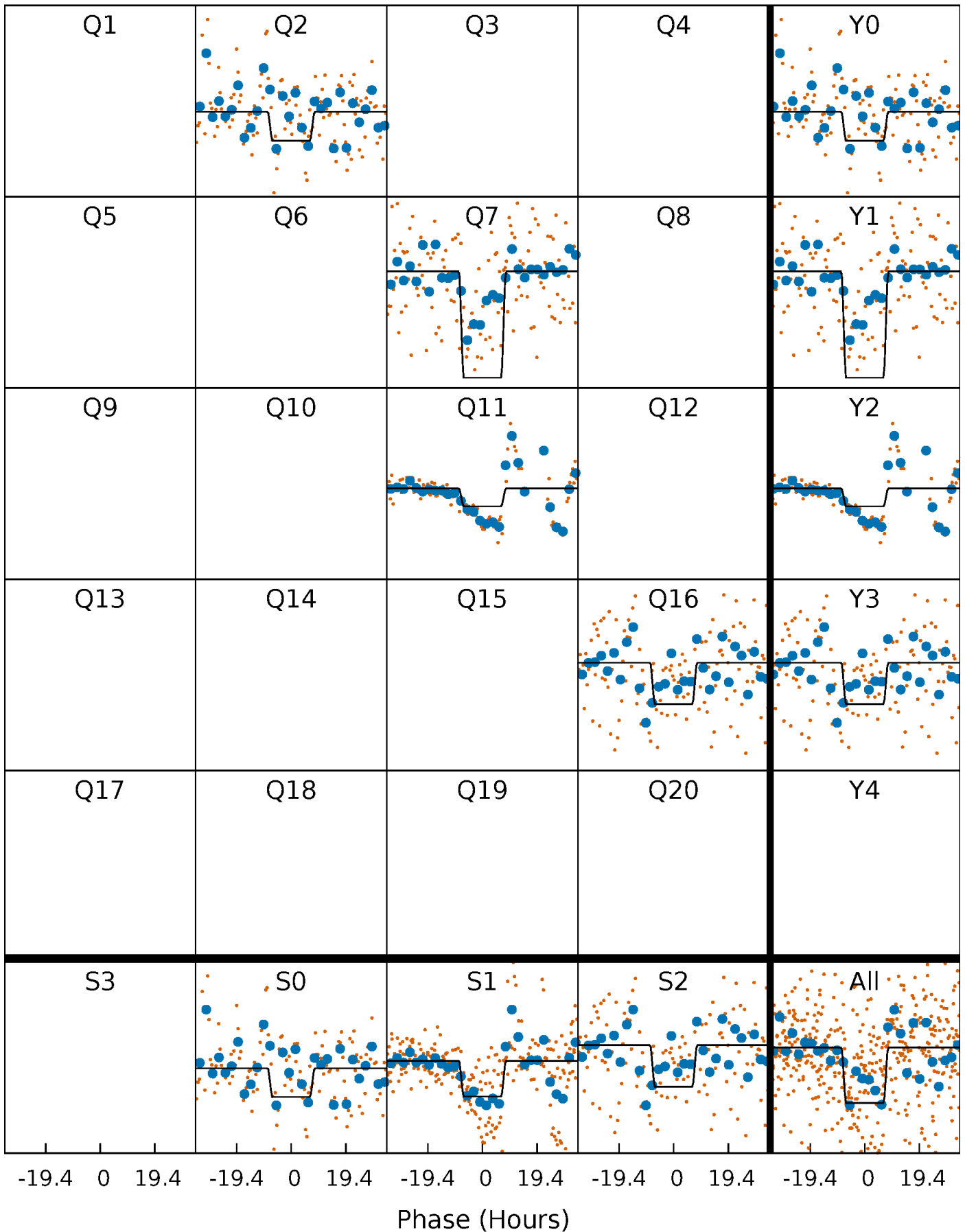
DV Quarter-Phased Transit Curves

TCE 003938173-01 P=447.310243 Days $T_0=201.431552$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

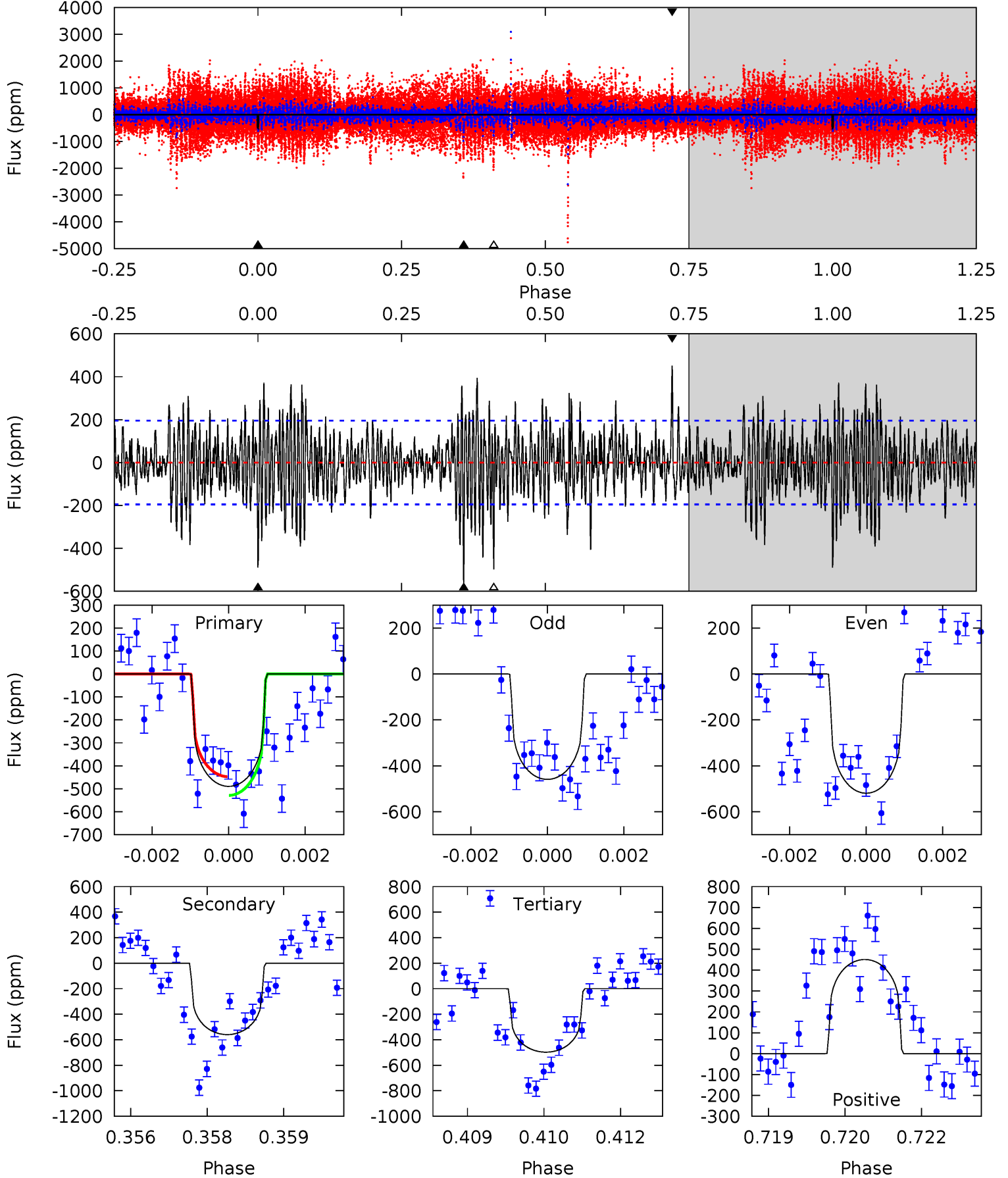
TCE 003938173-01 P=447.372363 Days $T_0=201.326468$ (BKJD)



DV Model-Shift Uniqueness Test

003938173-01, P = 447.310243 Days, E = 201.431552 Days

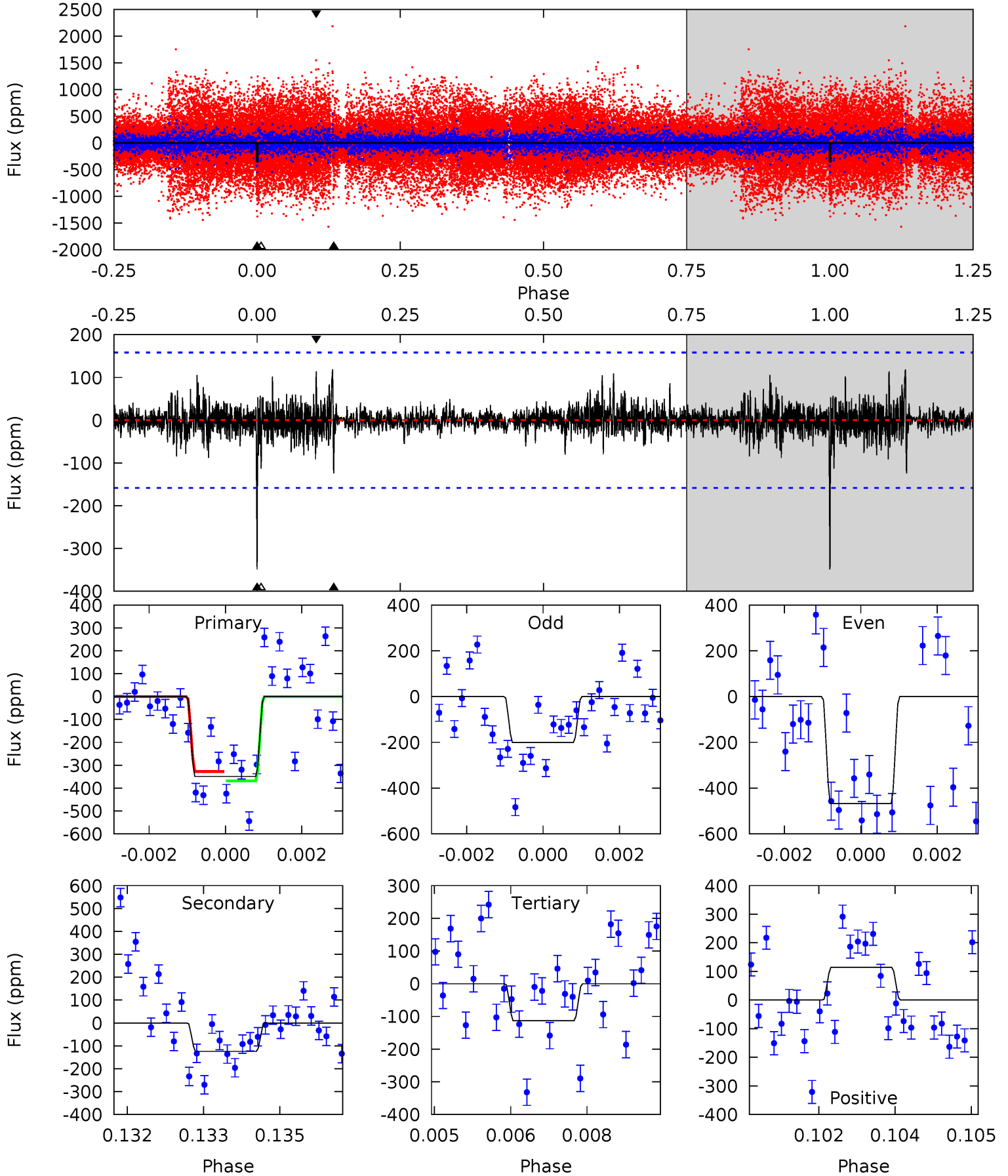
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	15.4	13.7	12.4	5.36	3.15	3.43	-0.22	1.06	1.71	2.99	0.78	0.97	0.45	1.13



Alt Model-Shift Uniqueness Test

003938173-01, P = 447.372363 Days, E = 201.326468 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	4.21	3.84	3.87	5.37	3.17	0.74	8.00	7.97	0.37	0.35	4.55	1.81	0.25	0.70



Stellar Parameters For KIC 003938173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5370^{+178}_{-129}	$3.629^{+0.760}_{-0.190}$	$0.220^{+0.200}_{-0.250}$	$3.198^{+0.902}_{-2.254}$	$1.589^{+0.262}_{-0.656}$	$0.068^{+1.320}_{-0.034}$
	+3%/-2%	+21%/-5%	+91%/-114%	+28%/-70%	+16%/-41%	+1930%/-50%
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 003938173-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-560 ± 36	$6.08^{+3.69}_{-3.17}$	500^{+53}_{-91}	5846^{+1851}_{-826}	14883^{+45407}_{-8980}
Alt.	-124 ± 29	$6.42^{+3.85}_{-3.01}$	499^{+50}_{-88}	4148^{+830}_{-485}	2871^{+7382}_{-1712}

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 $A_{obs} \gg 1.0$

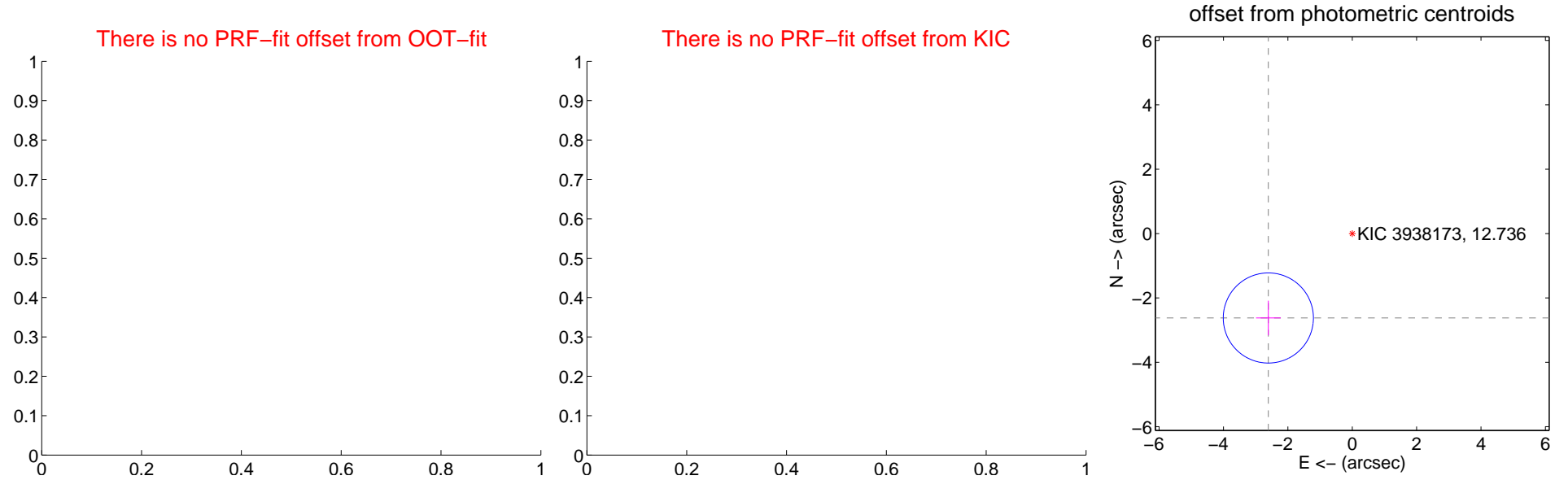
DV Centroid Data

Supplemental centroid analysis for 003938173-01. Kepler magnitude: 12.74. Transit SNR 6.88

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	3.70 ± 0.47	7.92	2.61 ± 0.38	-2.62 ± 0.54

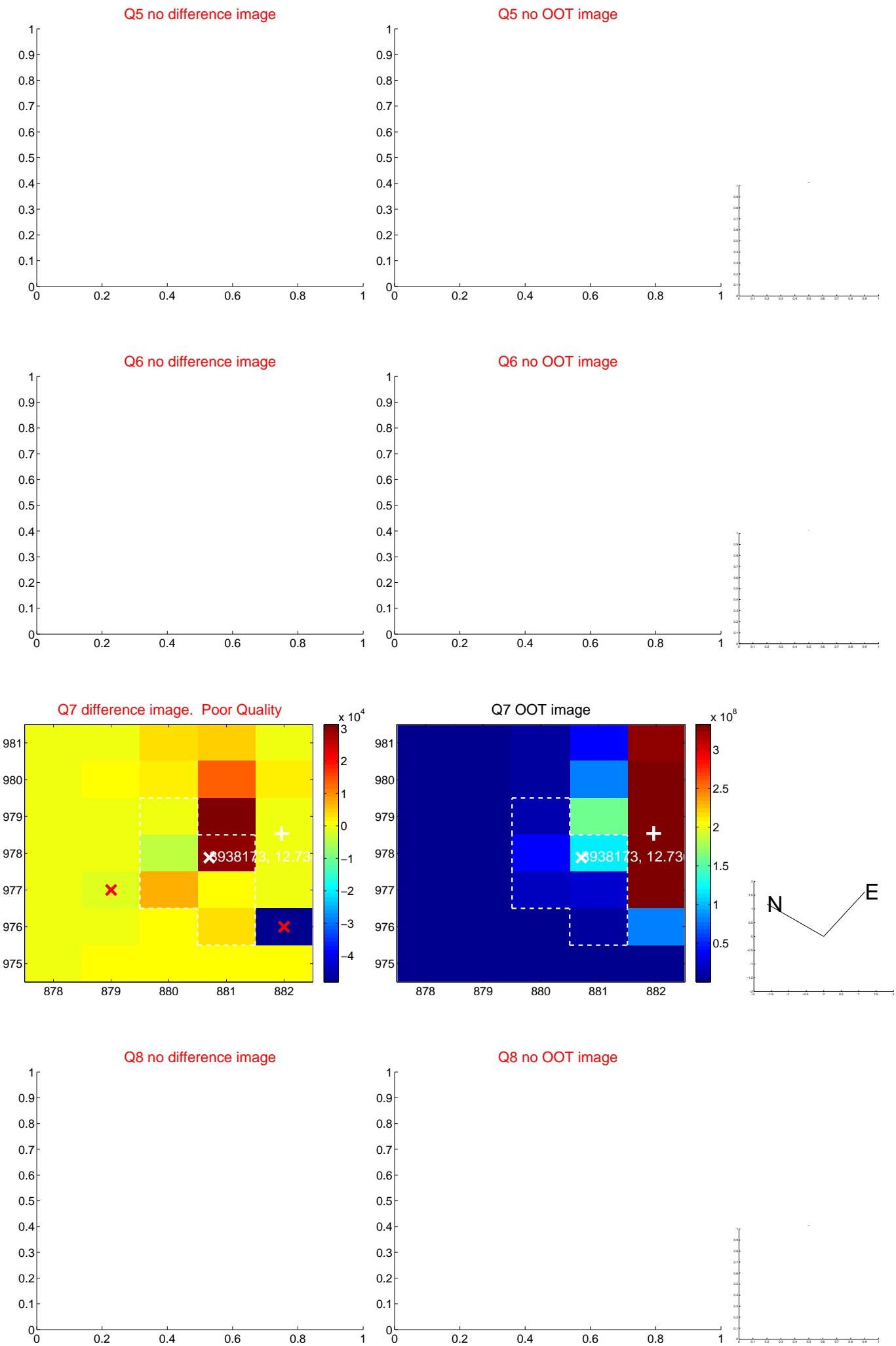


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



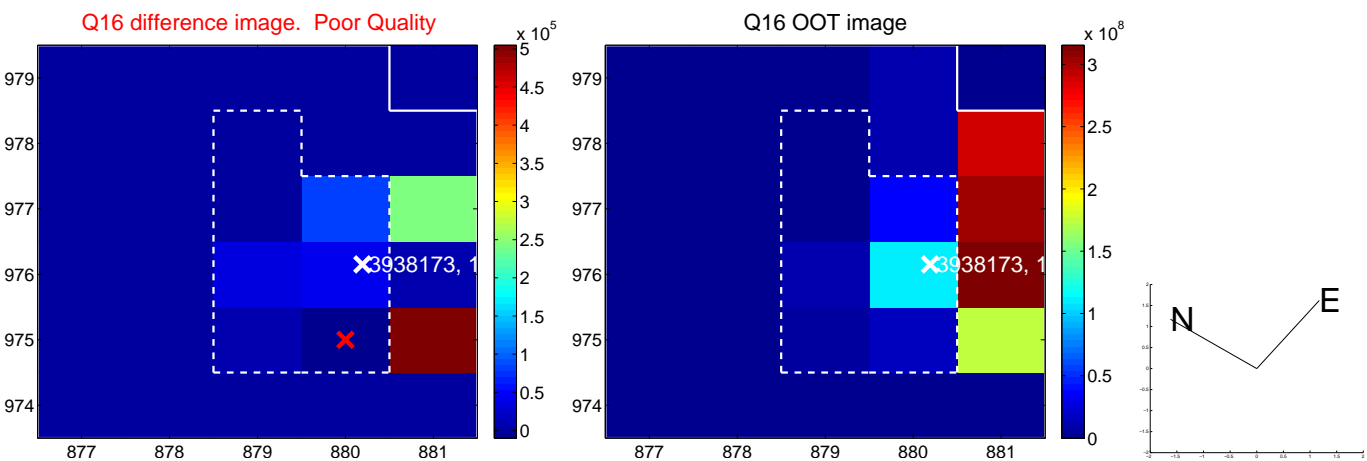
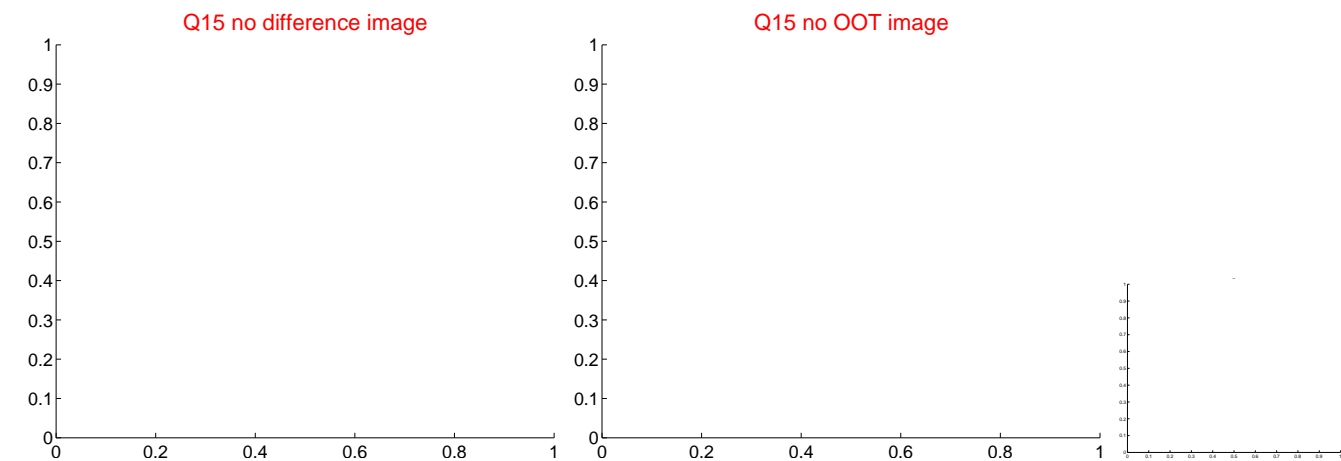
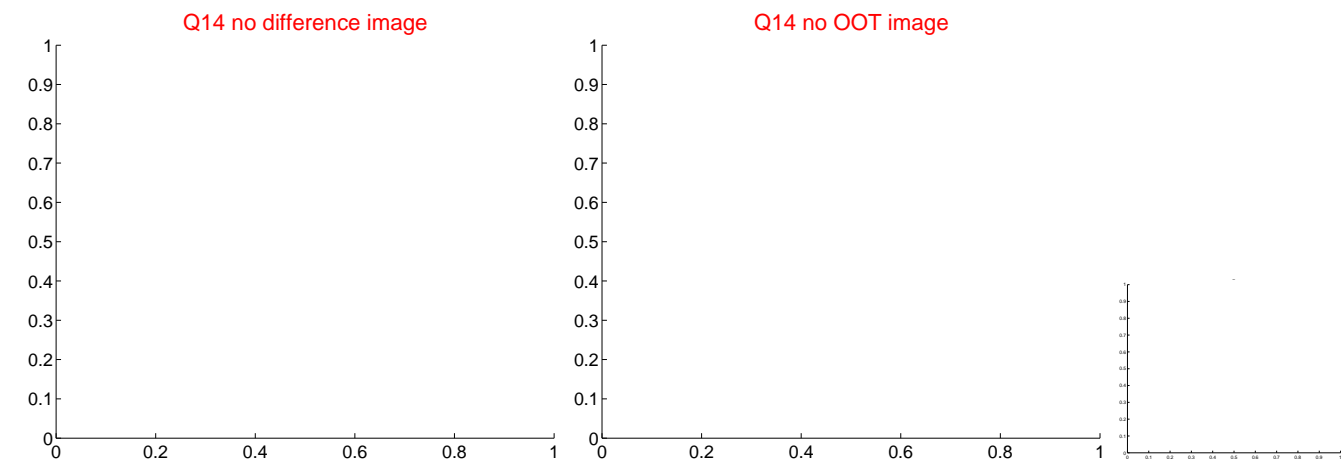
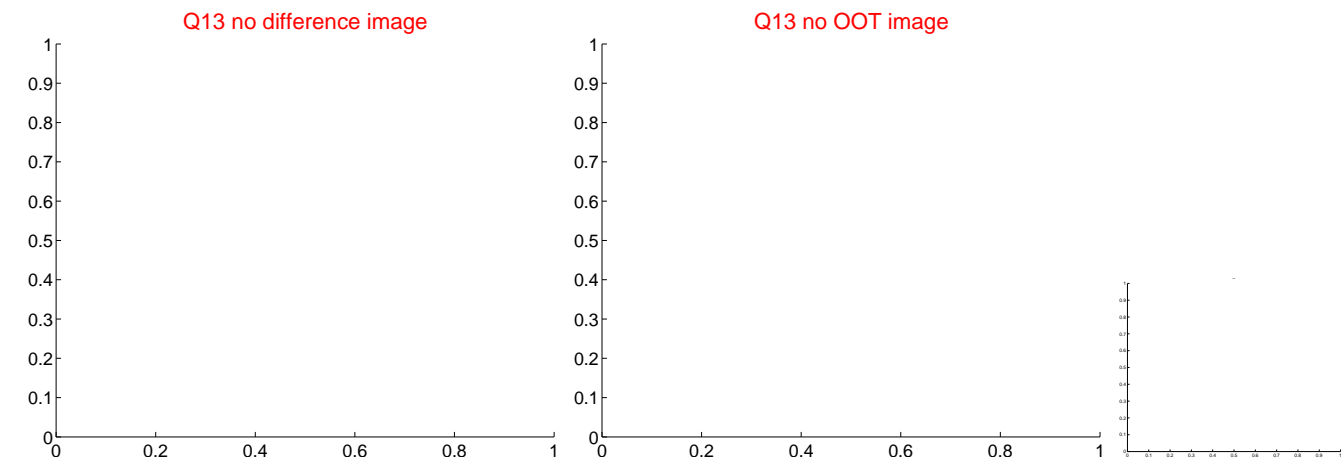
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



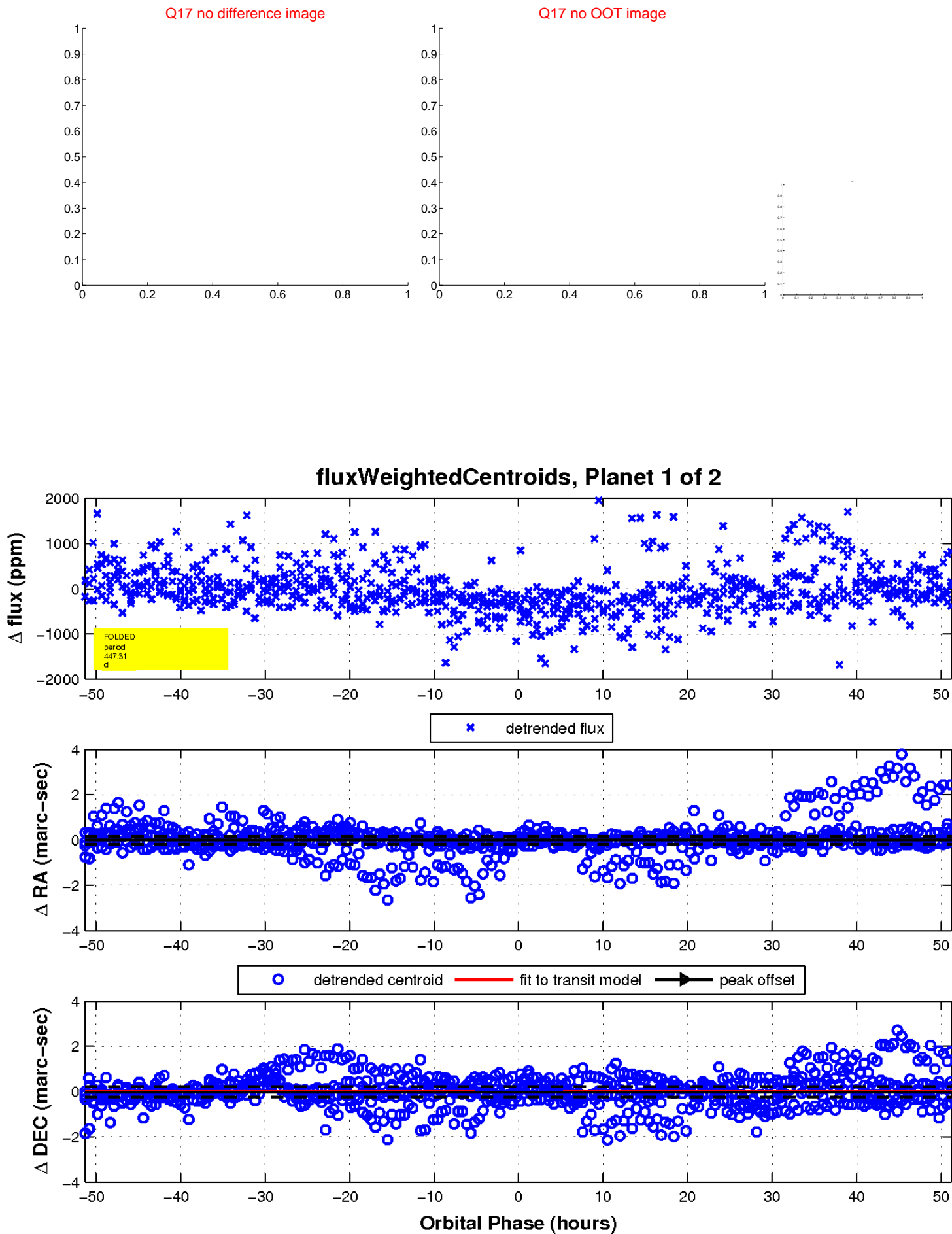
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



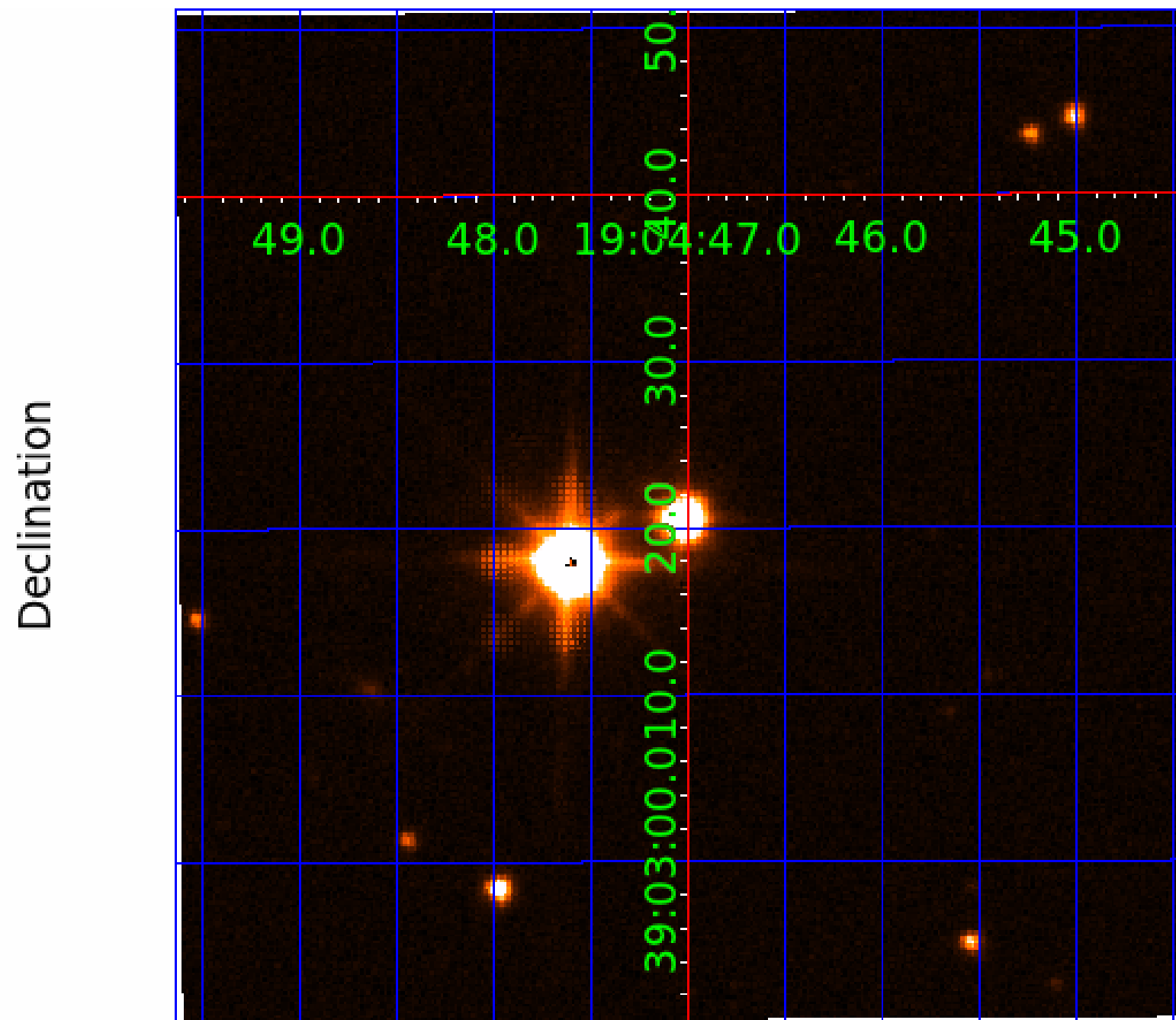
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003938173

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})
003938173-01	OBS	No	447.310243	201.431551	396.4	17.104	11.0	6.9	3.20	5370	6.87	4.27
003938173-02	OBS	No	229.434920	152.997197	712.9	2.571	11.1	7.4	3.20	5370	9.48	10.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003938173-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003938173-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET

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

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

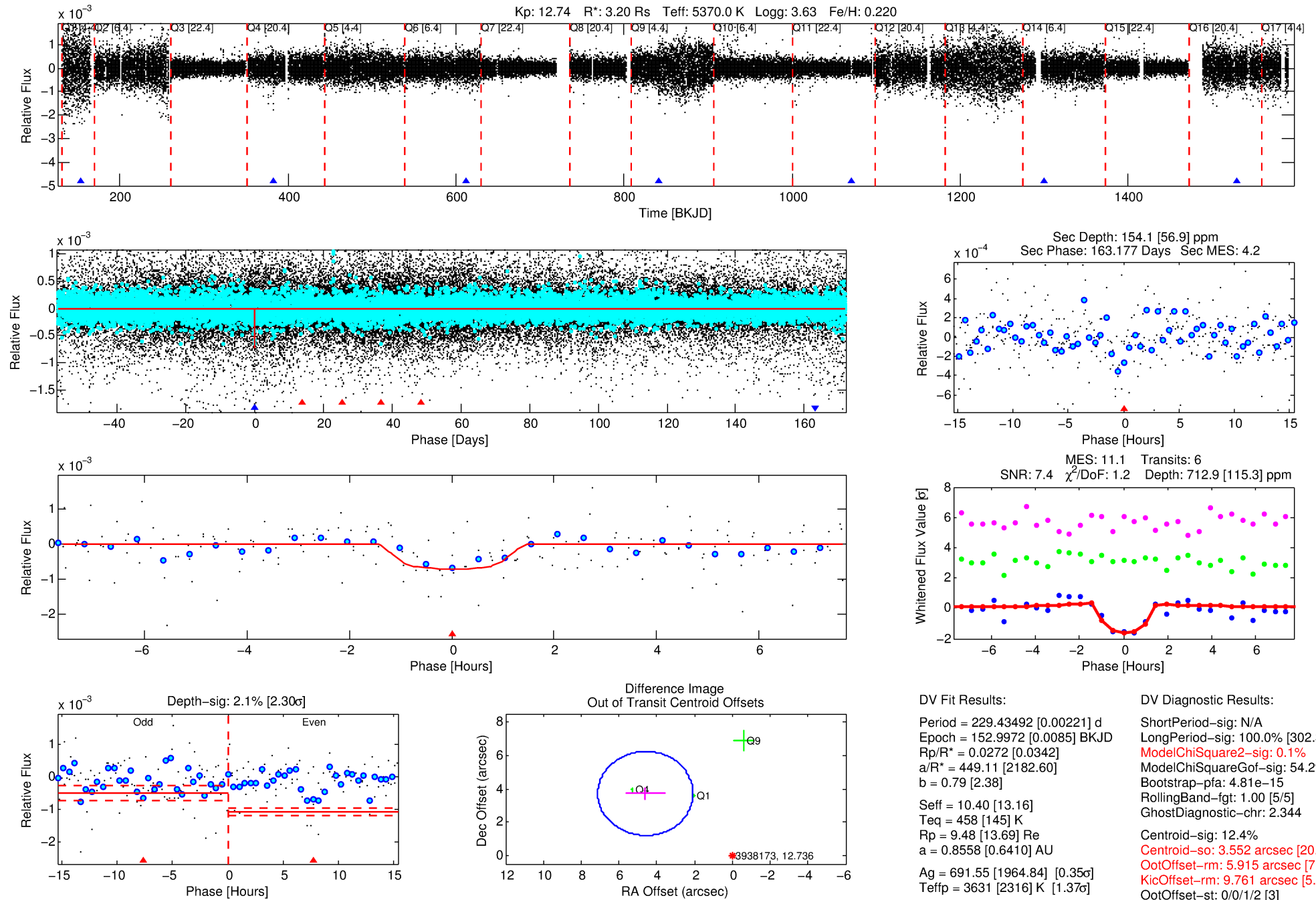
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003938173-02

No Significant Match Found

DV One-Page Summary

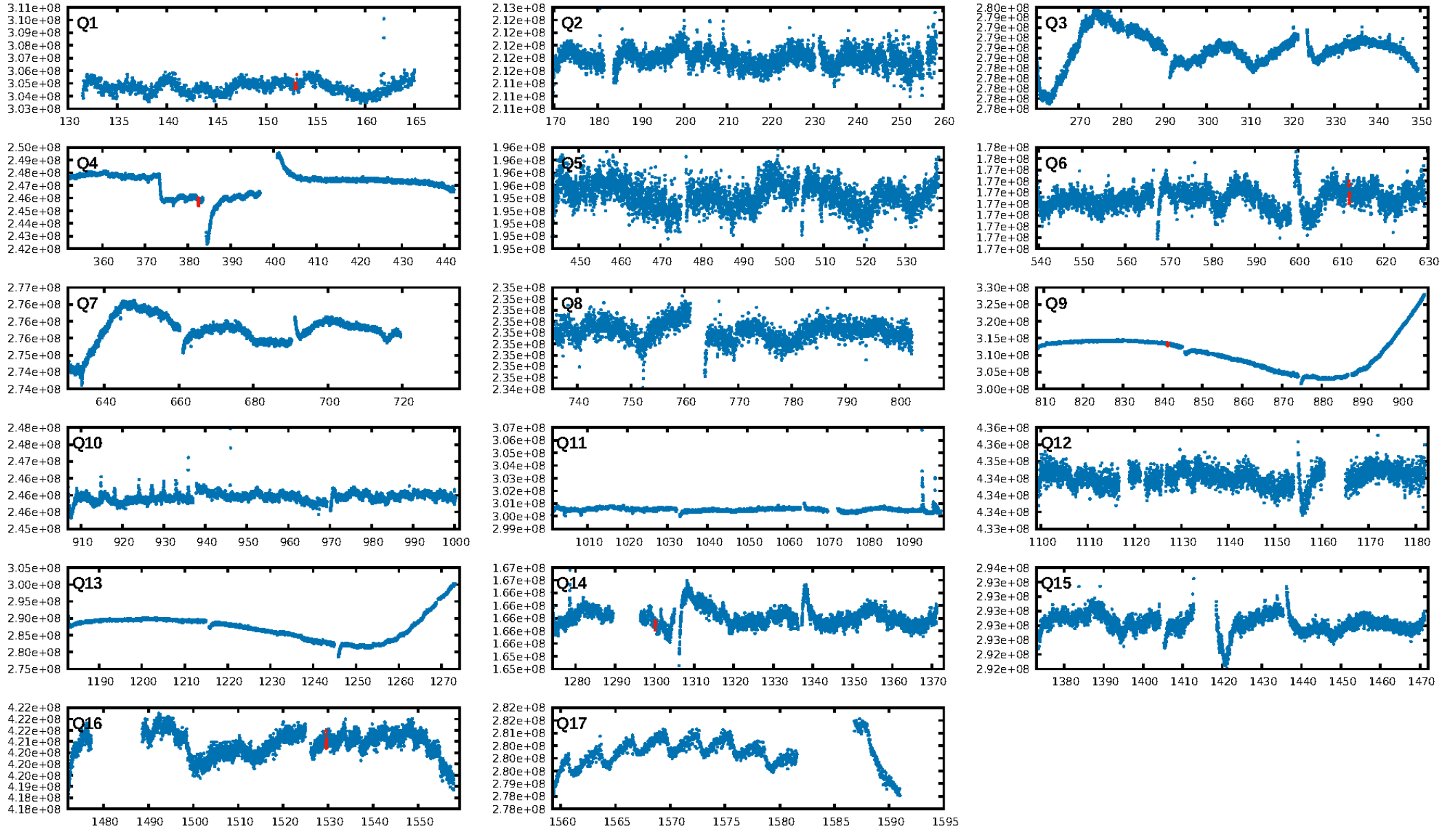
KIC: 3938173 Candidate: 2 of 2 Period: 229.435 d



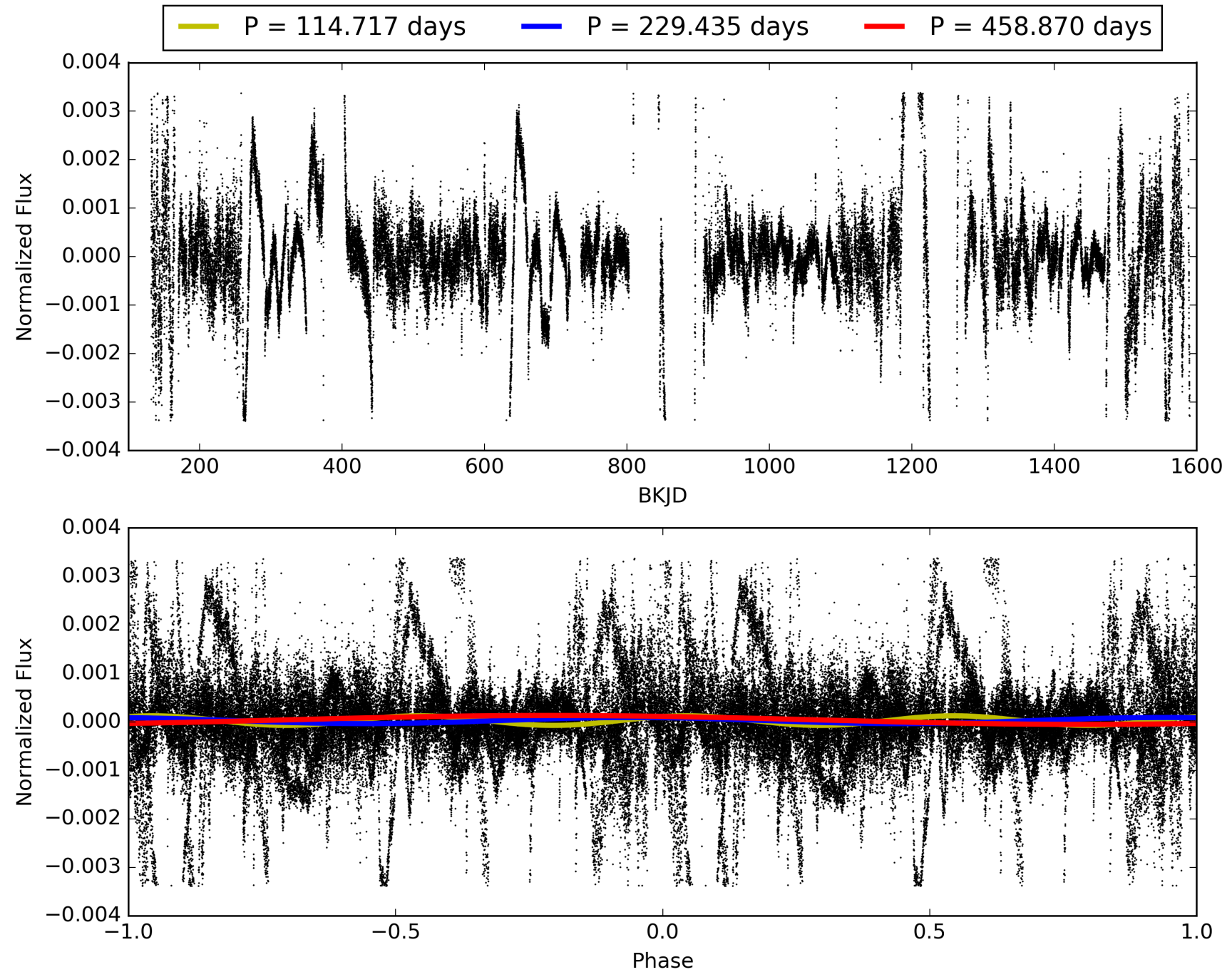
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:34:59 Z

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

TCE 003938173-02, PDC Light Curves

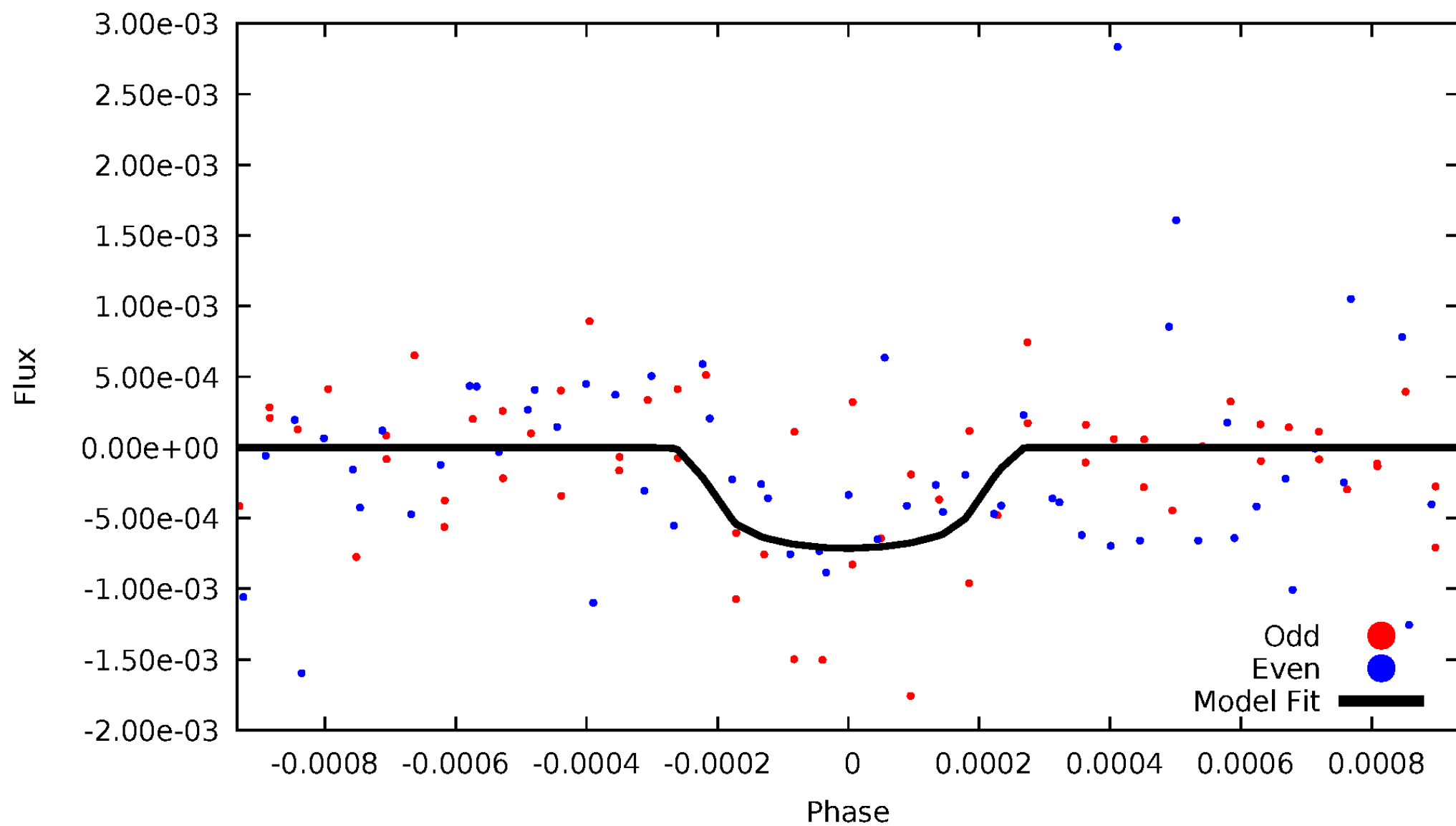


TCE 003938173-02



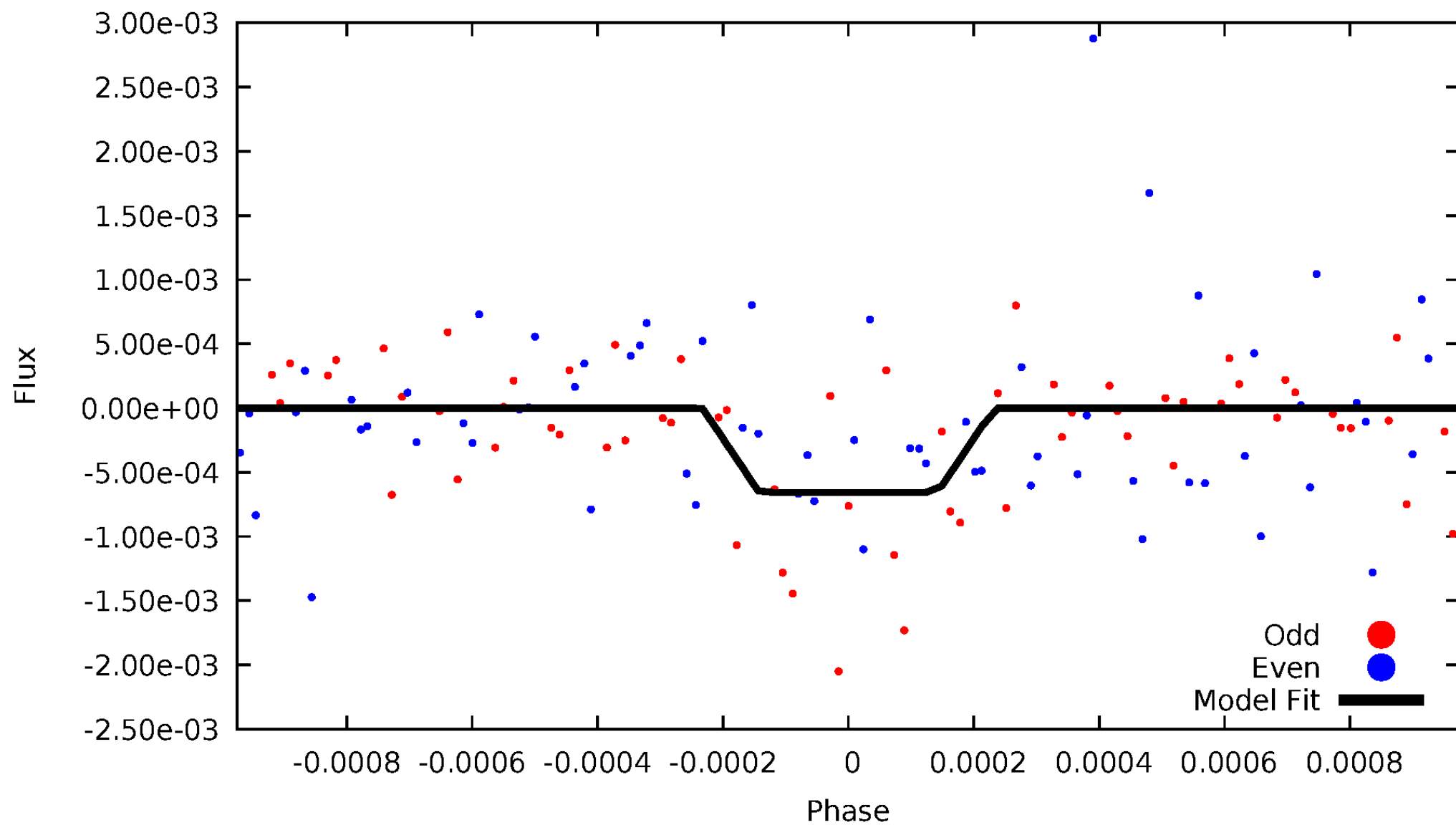
DV Odd/Even

TCE 003938173-02



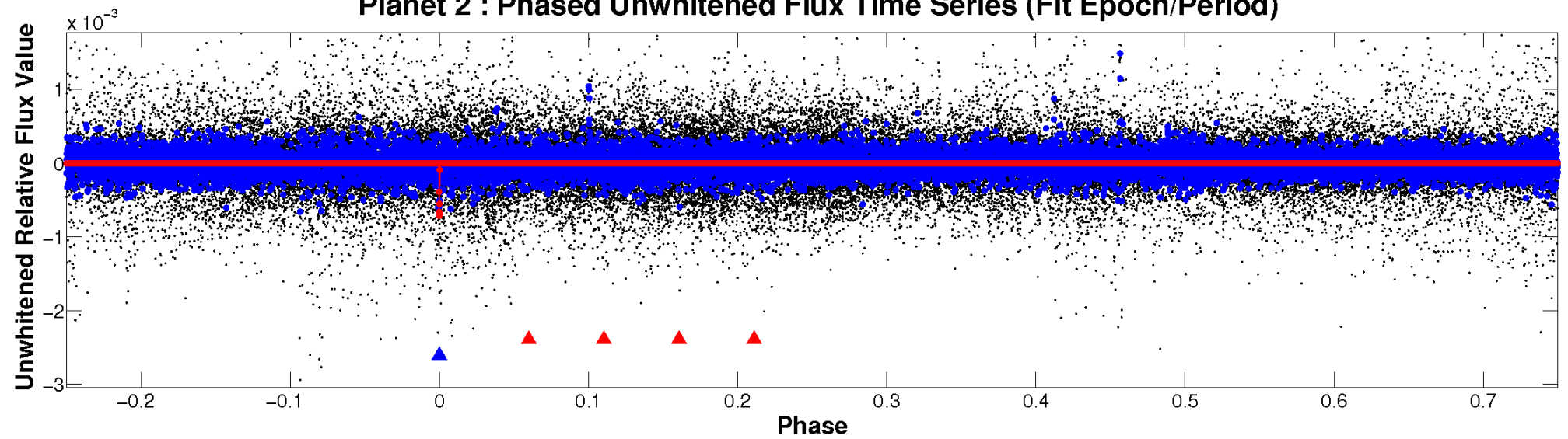
ALT Odd/Even

TCE 003938173-02

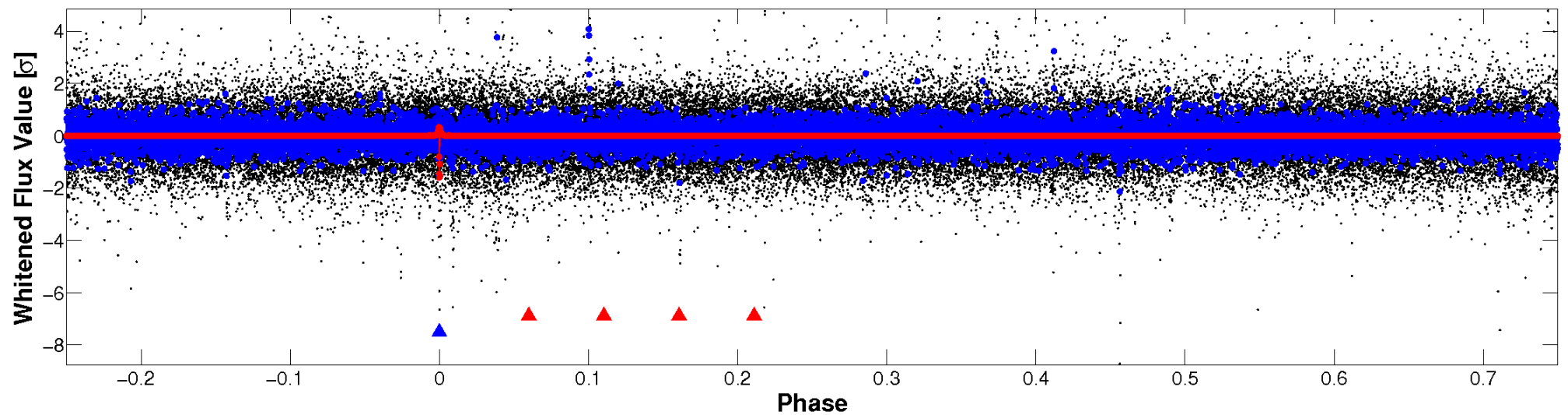


Non-Whitened Vs. Whitened Light Curve

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

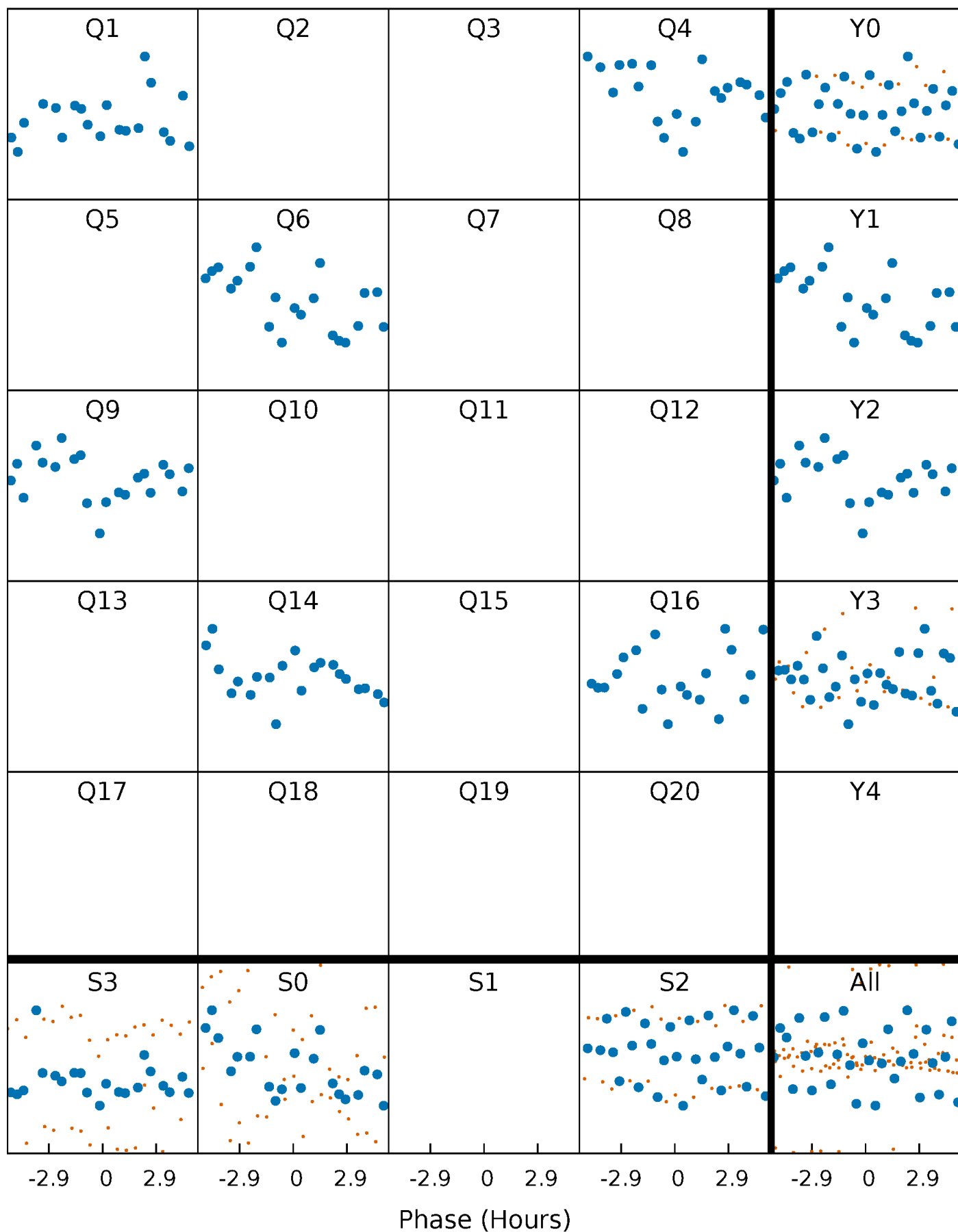


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



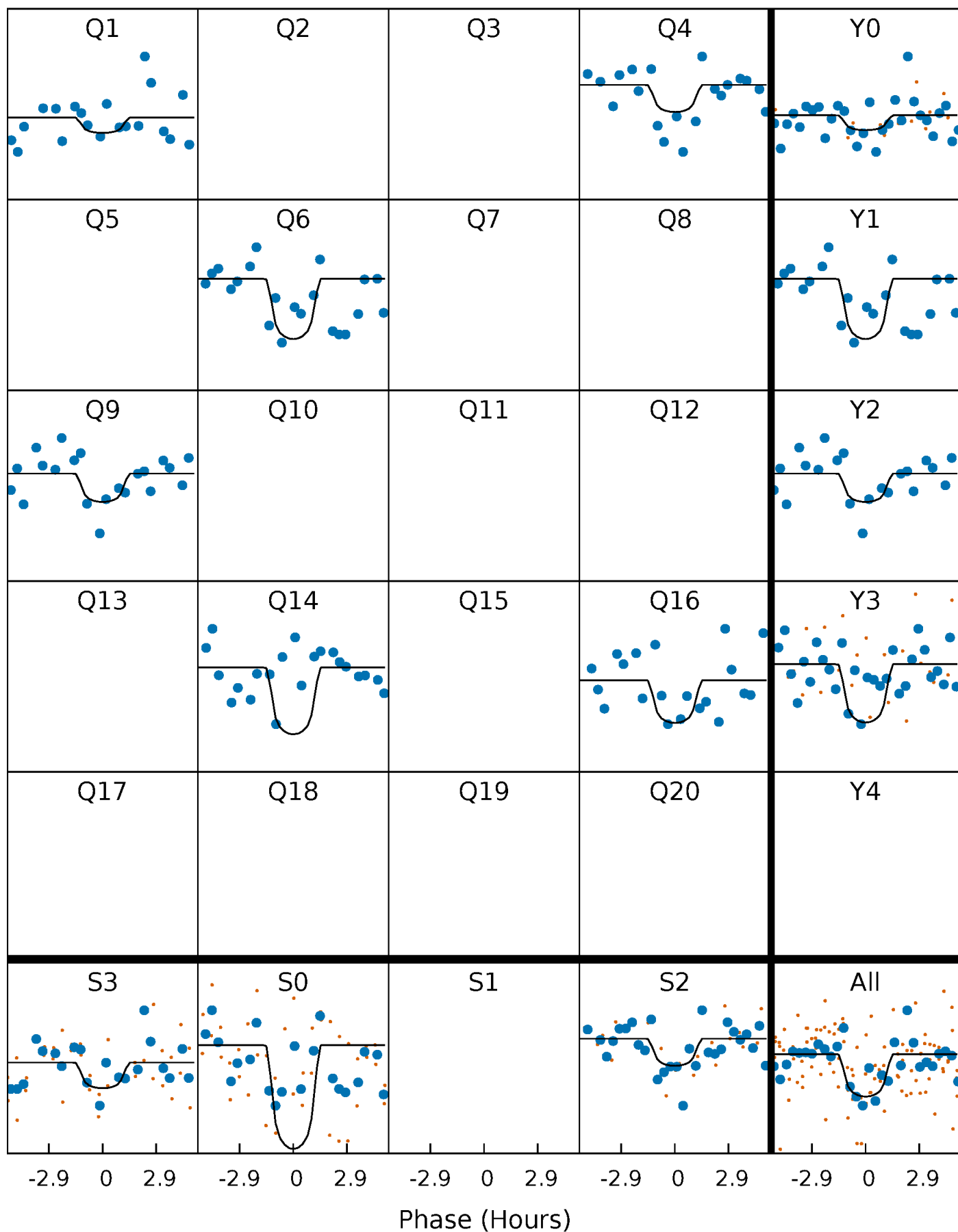
PDC Quarter-Phased Transit Curves

TCE 003938173-02 P=229.434921 Days $T_0=152.997197$ (BKJD)



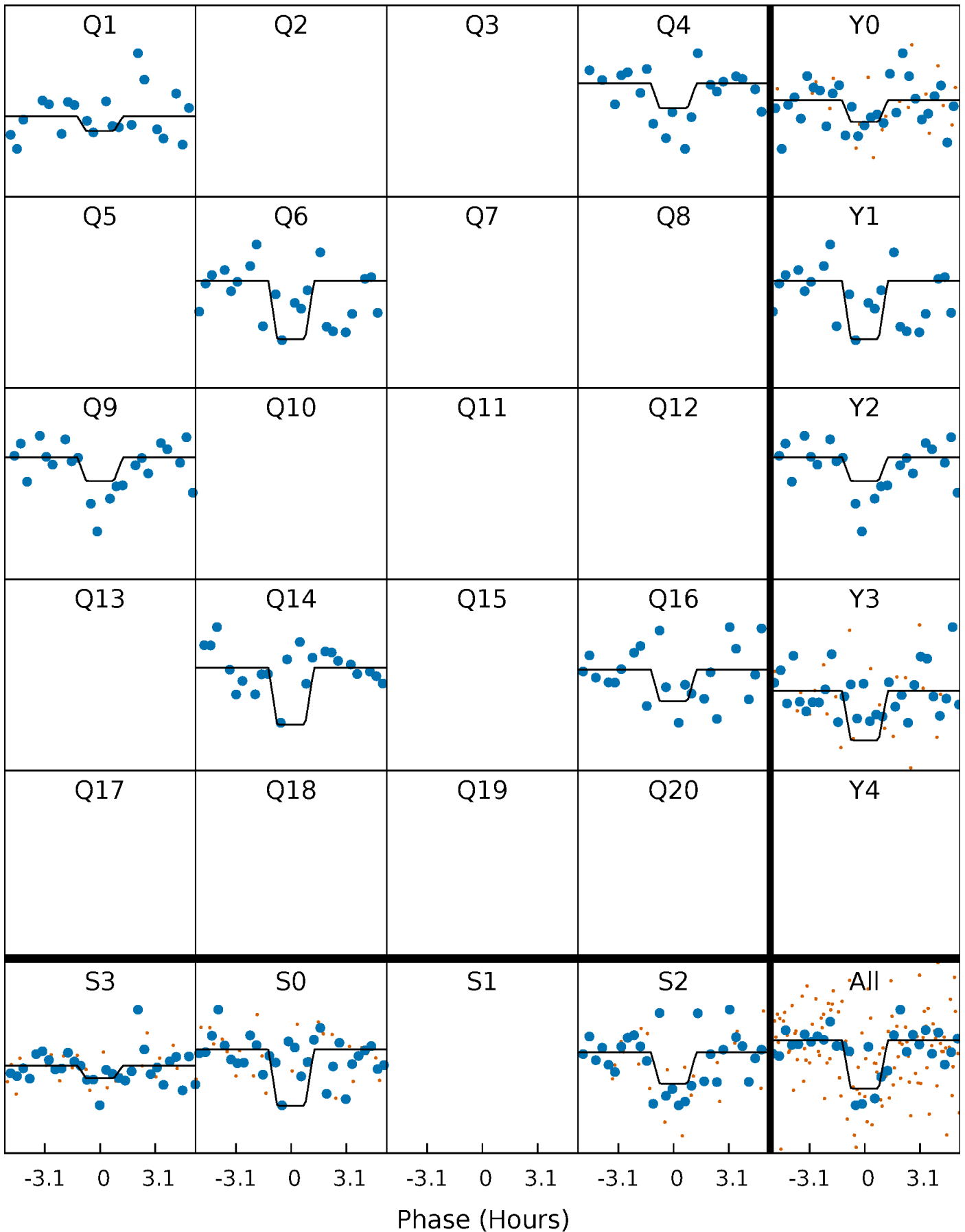
DV Quarter-Phased Transit Curves

TCE 003938173-02 P=229.434921 Days $T_0=152.997197$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

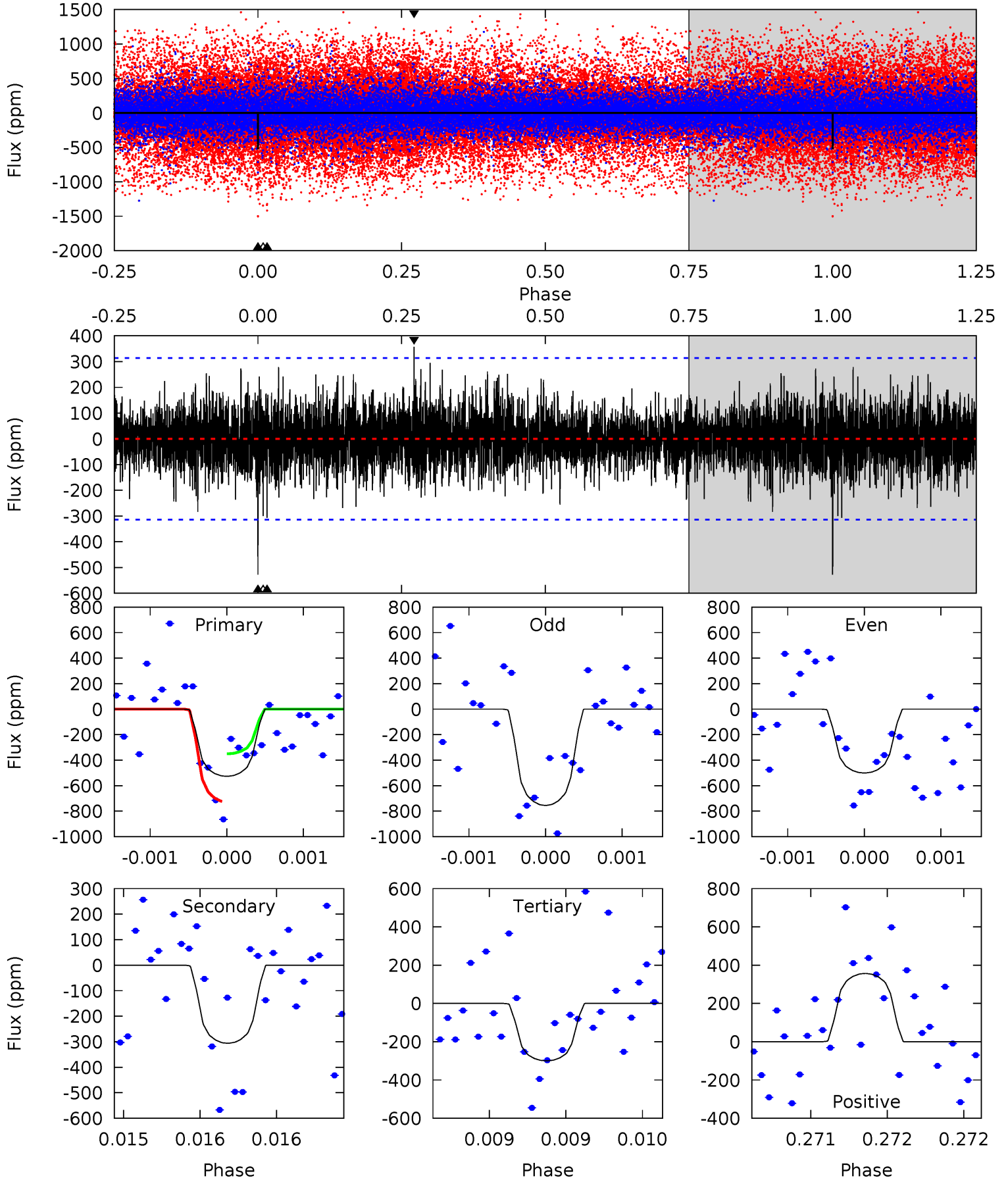
TCE 003938173-02 P=229.431507 Days $T_0=153.001975$ (BKJD)



DV Model-Shift Uniqueness Test

003938173-02, P = 229.434921 Days, E = 152.997197 Days

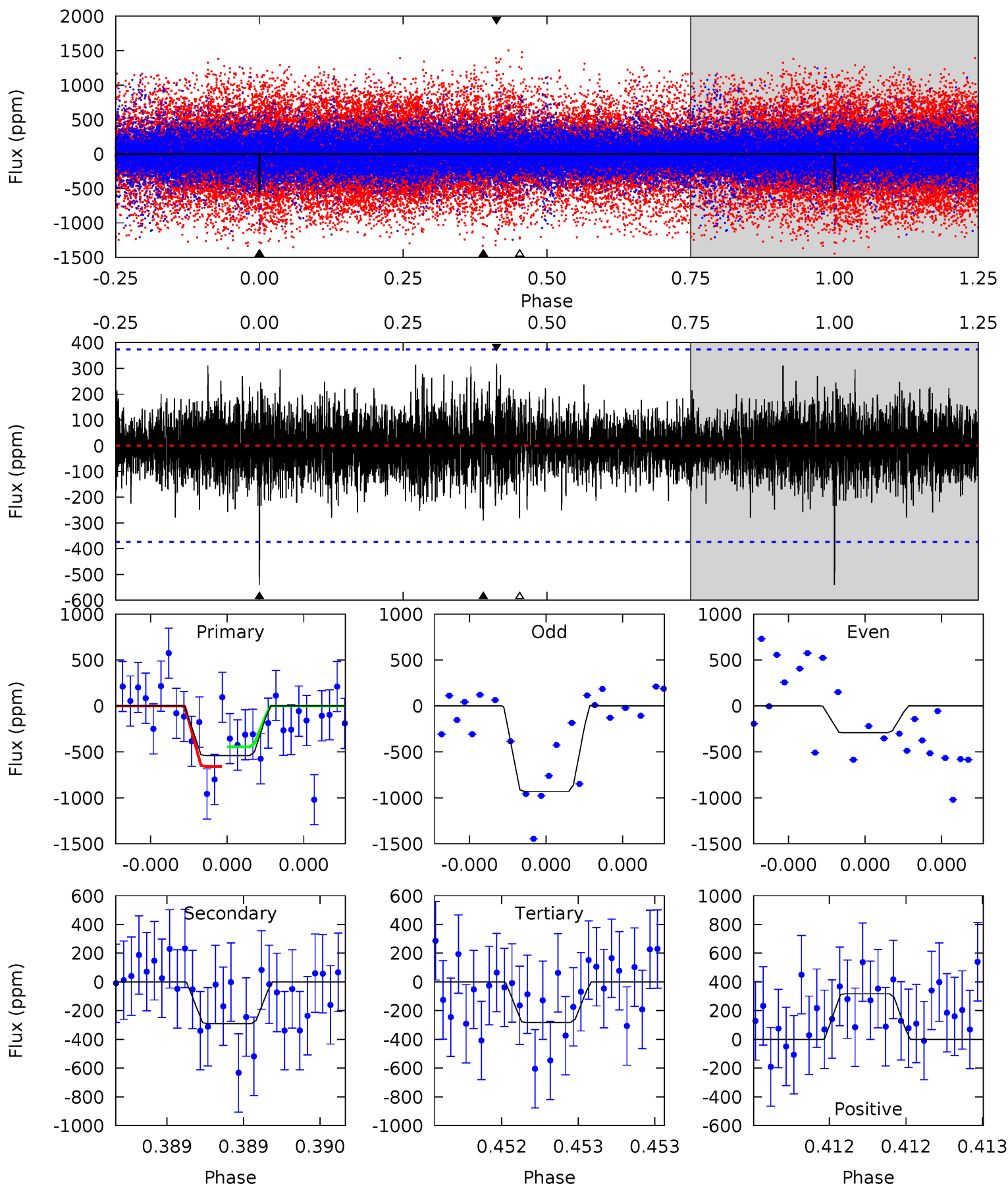
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.34	5.42	5.31	6.32	5.56	3.46	1.37	4.02	3.02	0.11	-0.90	2.29	1.23	0.40	3.36



Alt Model-Shift Uniqueness Test

003938173-02, P = 229.431507 Days, E = 153.001975 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.11	4.35	4.23	4.77	5.60	3.53	1.14	3.87	3.34	0.11	-0.43	5.21	1.79	0.37	0



Stellar Parameters For KIC 003938173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5370^{+178}_{-129}	$3.629^{+0.760}_{-0.190}$	$0.220^{+0.200}_{-0.250}$	$3.198^{+0.902}_{-2.254}$	$1.589^{+0.262}_{-0.656}$	$0.068^{+1.320}_{-0.034}$
	+3%/-2%	+21%/-5%	+91%/-114%	+28%/-70%	+16%/-41%	+1930%/-50%
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 003938173-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-306 ± 56	$10.82^{+11.26}_{-7.31}$	627^{+67}_{-103}	3993^{+2139}_{-709}	982^{+8101}_{-728}
Alt.	-290 ± 67	$10.68^{+10.55}_{-7.31}$	627^{+66}_{-103}	4003^{+2284}_{-739}	983^{+8513}_{-748}

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

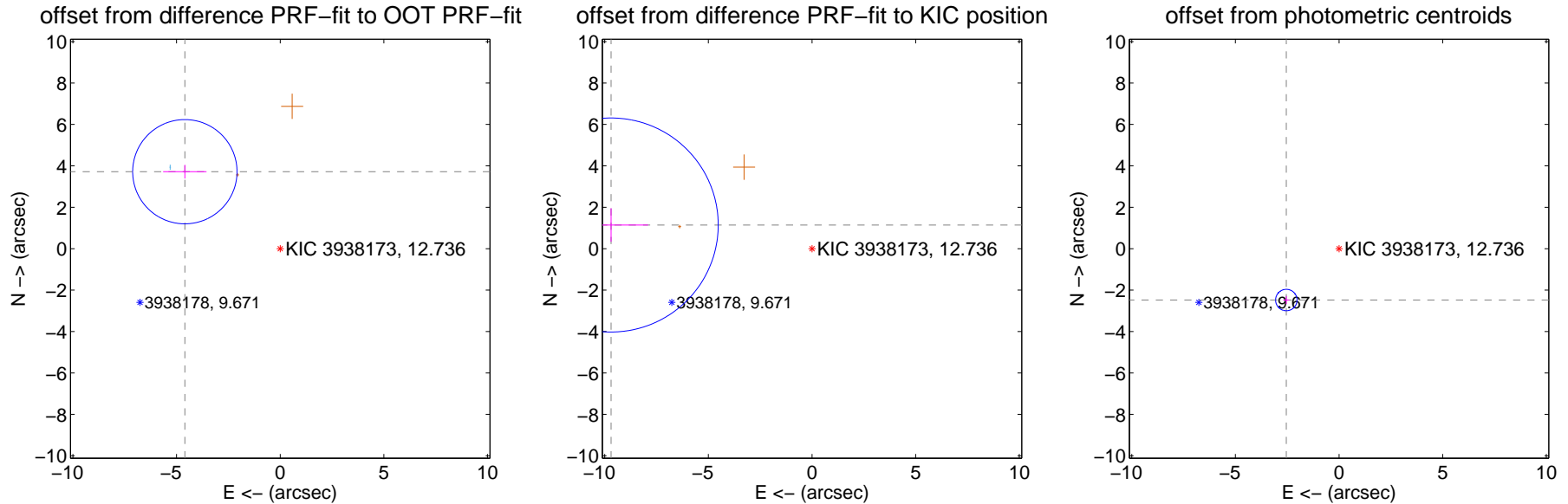
DV Centroid Data

Supplemental centroid analysis for 003938173-02. Kepler magnitude: 12.74. Transit SNR 7.36

There are 1 quarters with good PRF difference image offsets

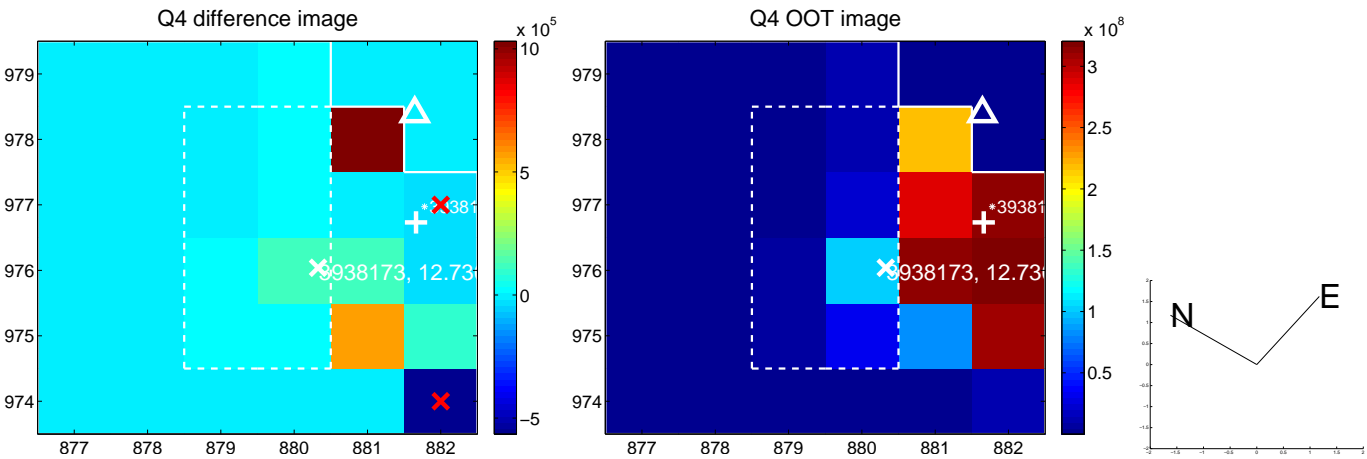
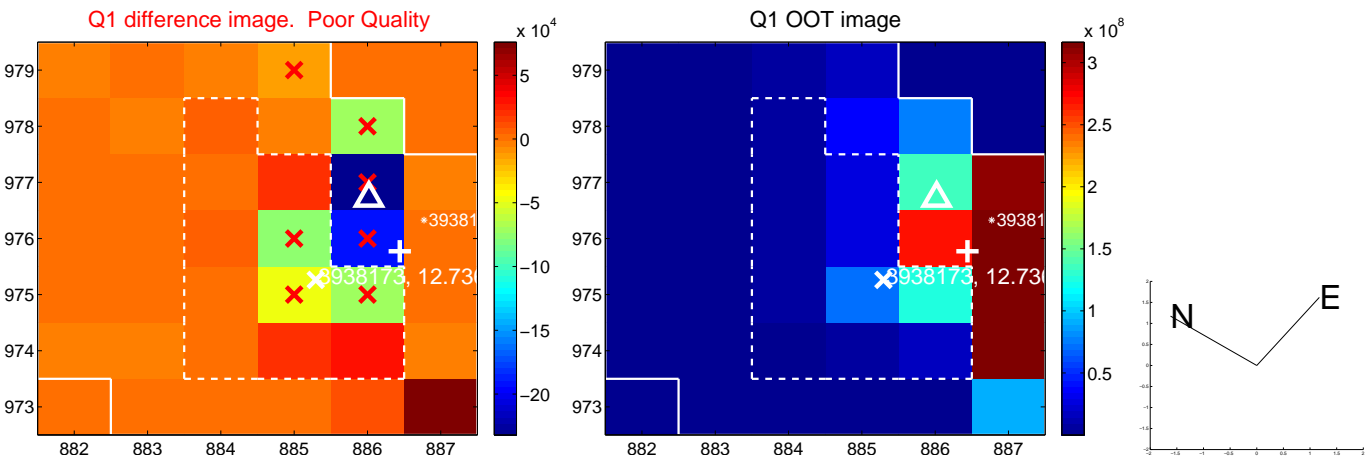
The OOT PRF centroid is offset from the target star catalog position by about 4.85 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.915 ± 0.839	7.05	4.600 ± 1.045	3.718 ± 0.329
PRF-fit source offset from KIC position	9.761 ± 1.723	5.67	9.694 ± 1.783	1.144 ± 0.808
photometric centroid source offset	3.55 ± 0.17	20.59	2.54 ± 0.15	-2.48 ± 0.19

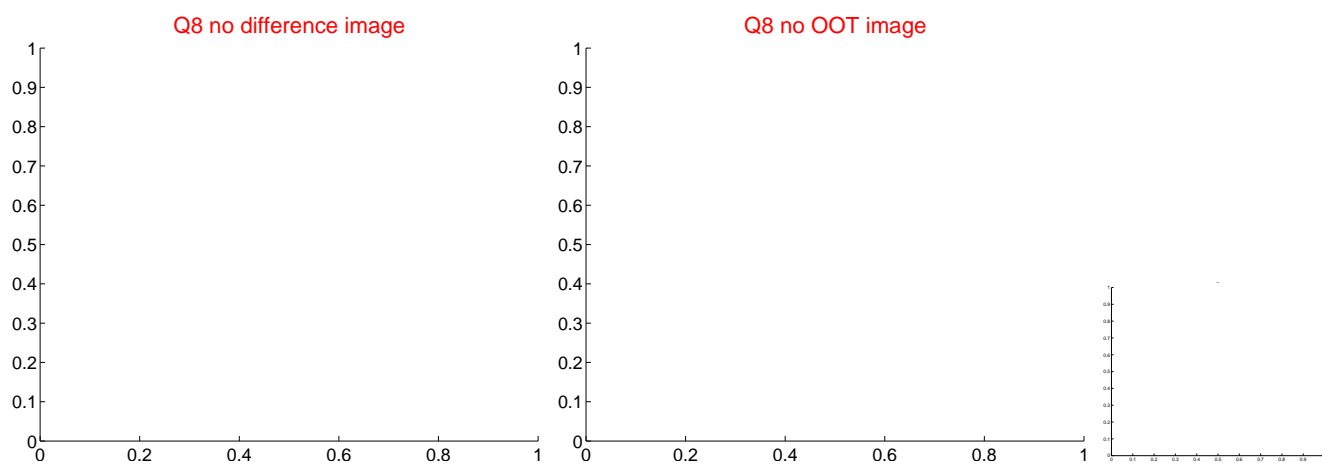
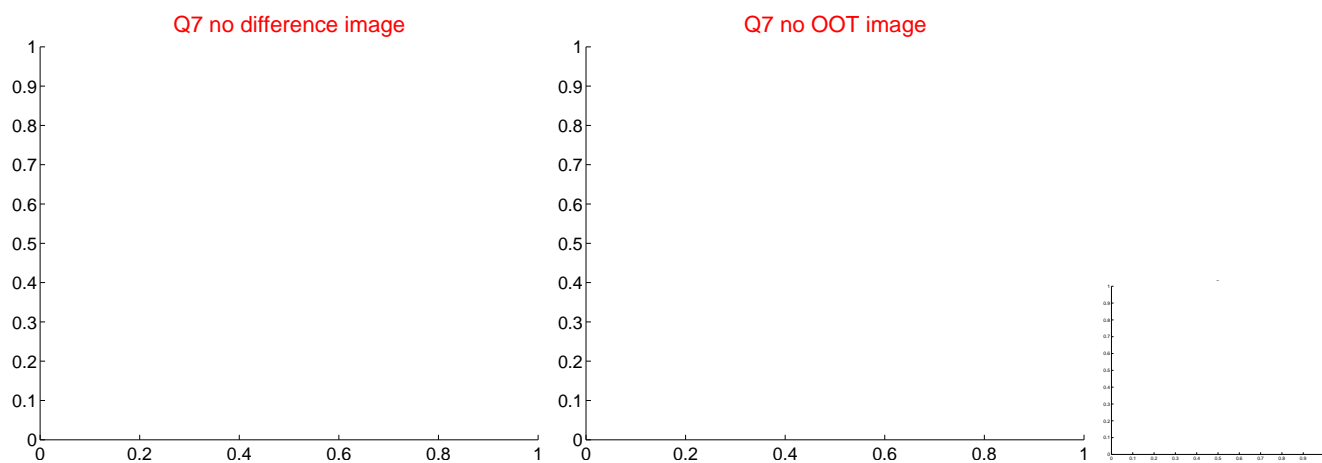
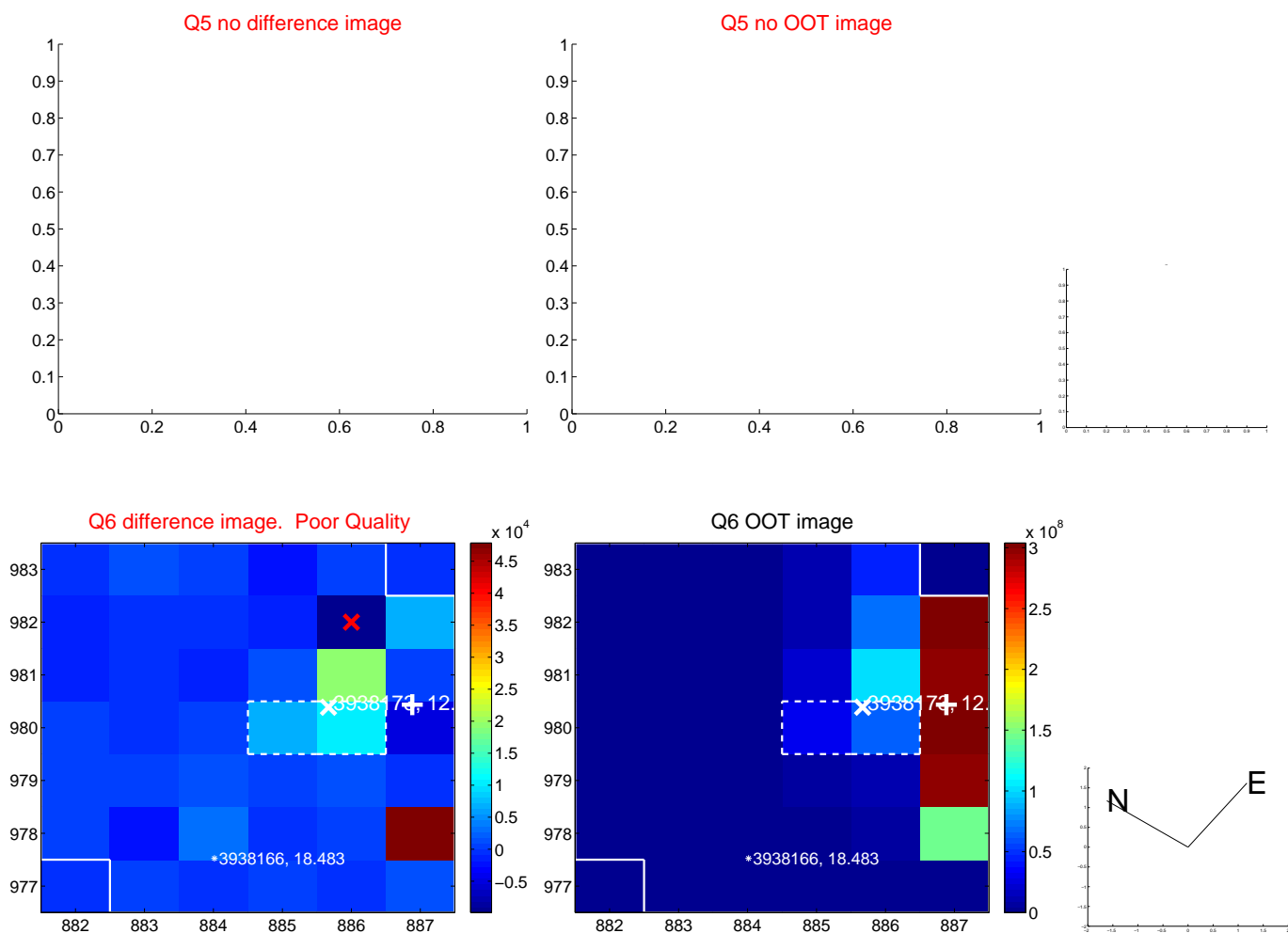


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

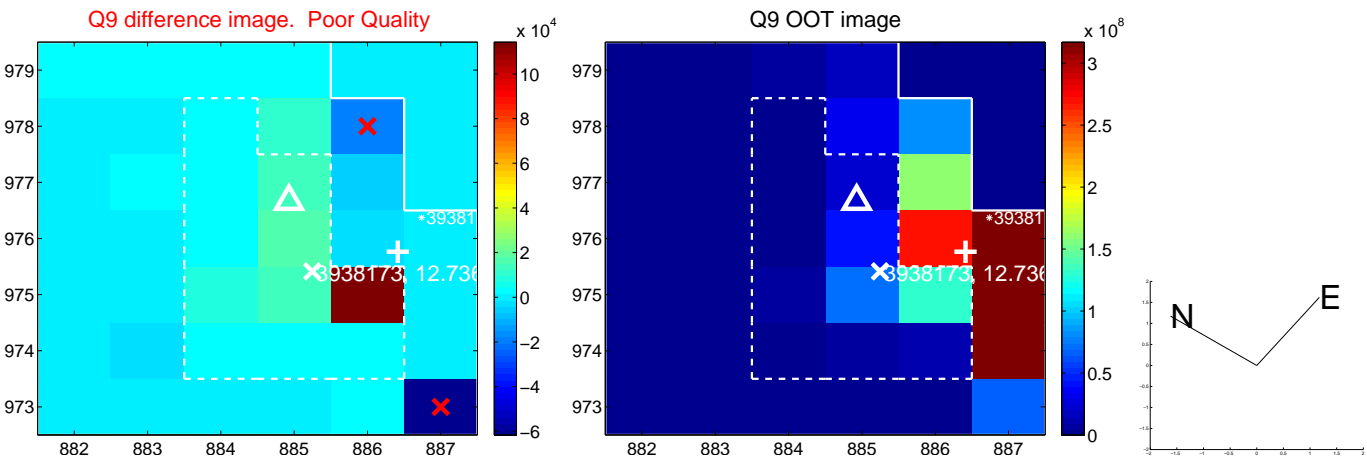
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



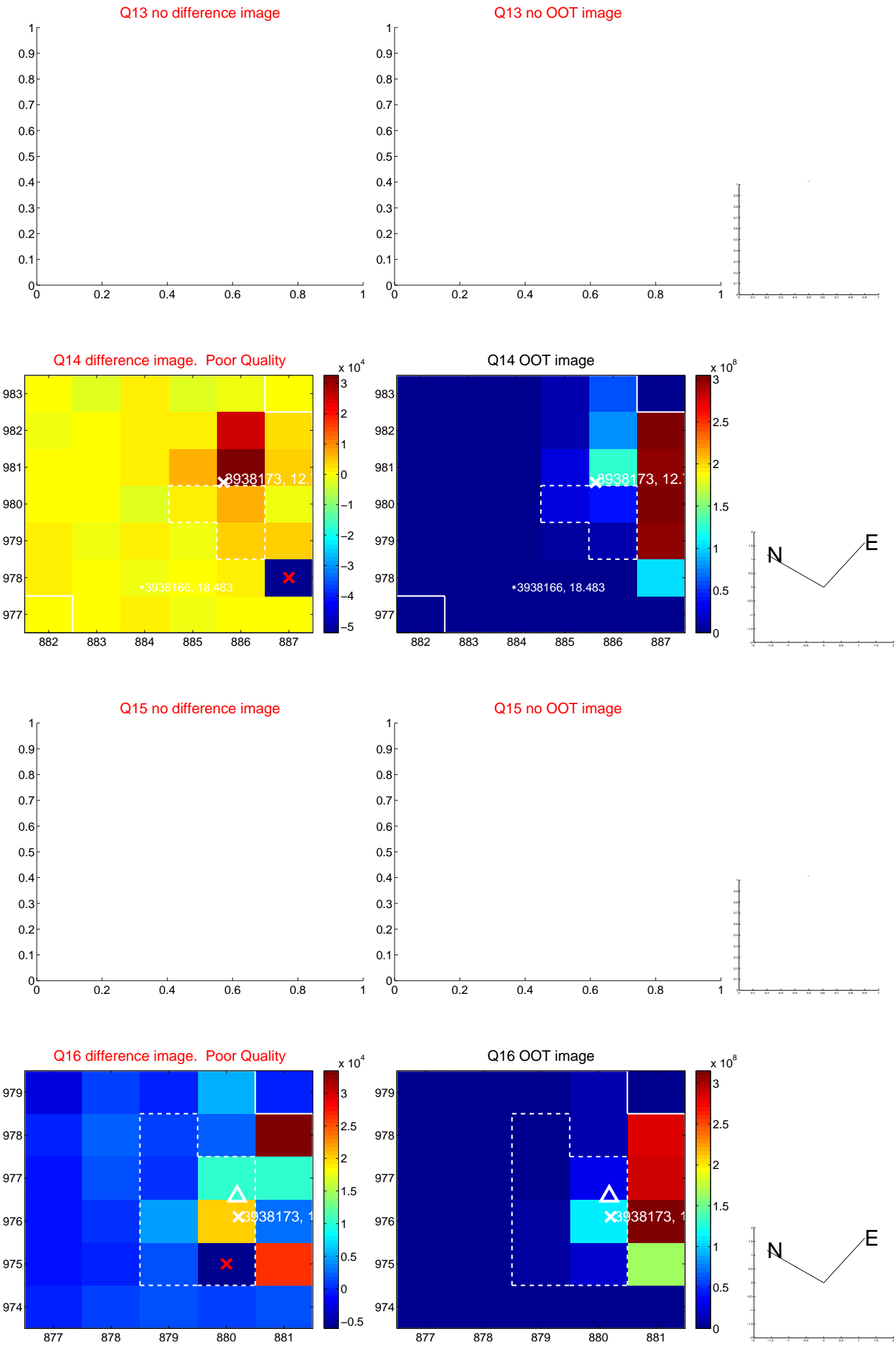
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



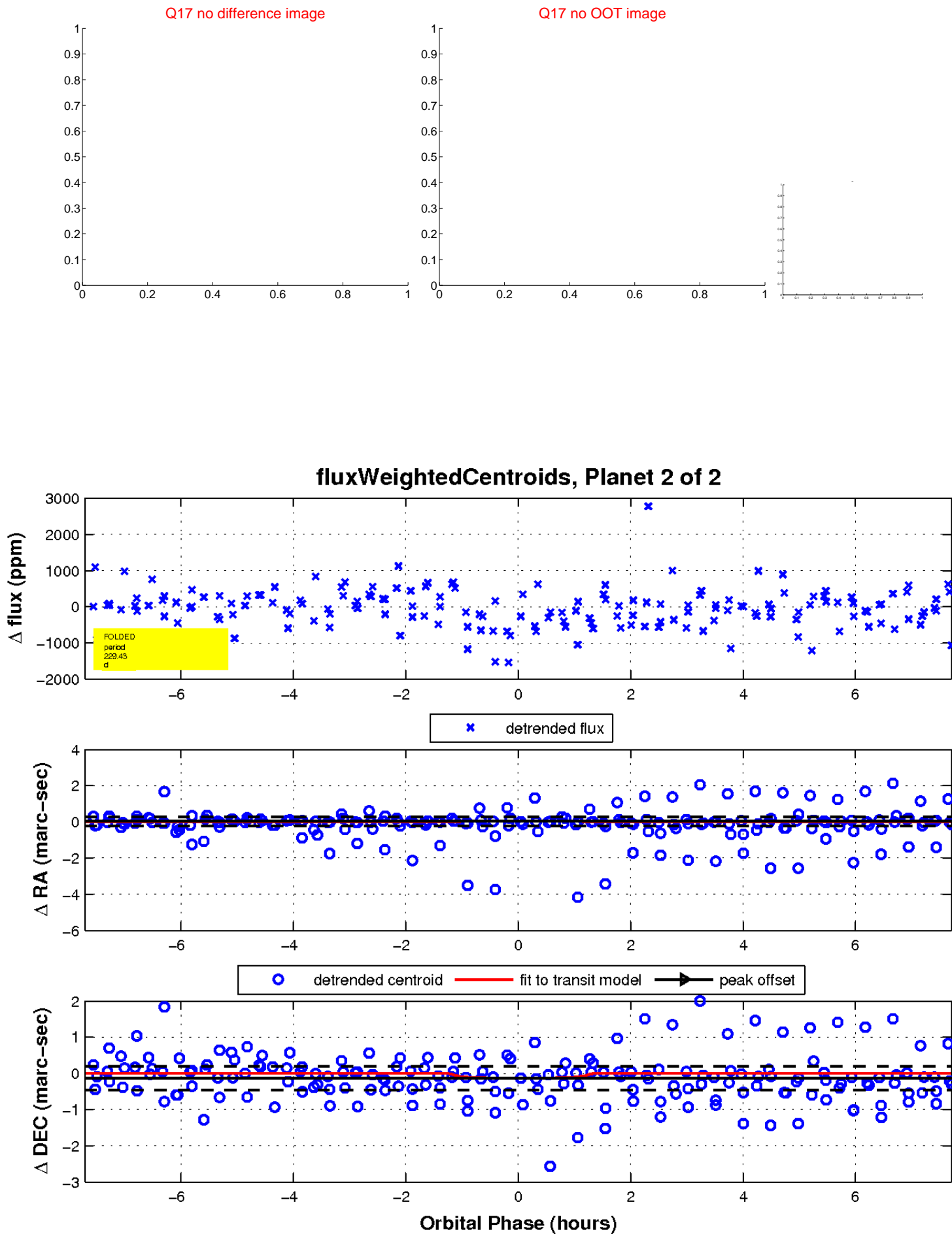
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

