

KIC 008439323

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})
008439323-01	OBS	4153.01	4.626053	134.677186	331.4	0.673	13.3	18.5	0.80	5834	1.75	248.19
008439323-02	OBS	No	368.593287	201.155959	1056.2	7.683	7.8	10.2	0.80	5834	2.72	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008439323-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008439323-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

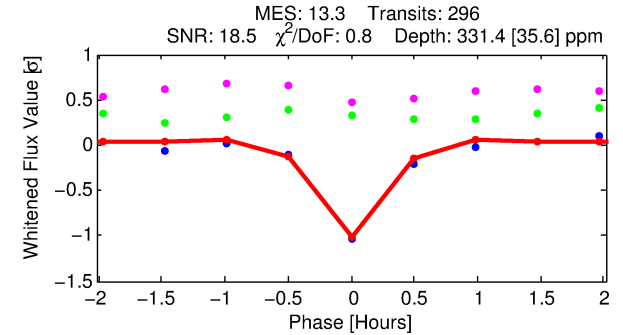
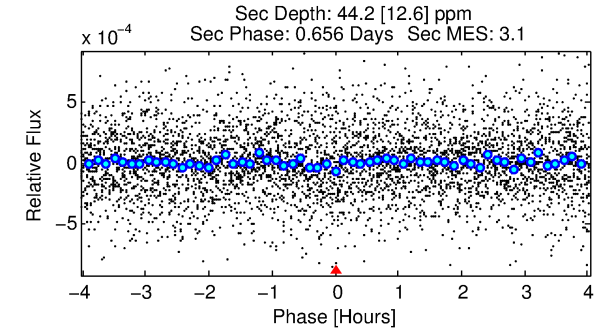
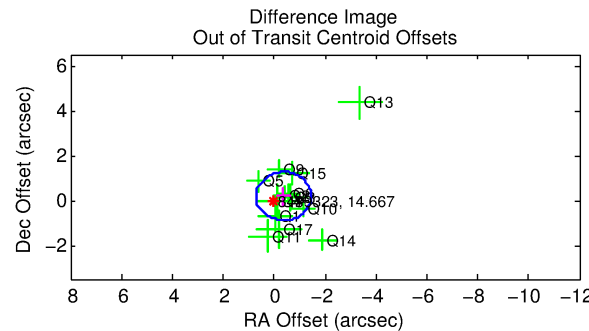
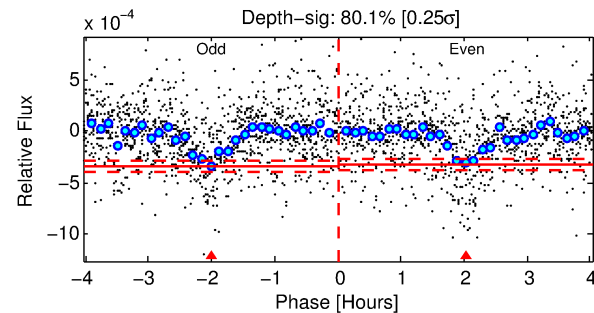
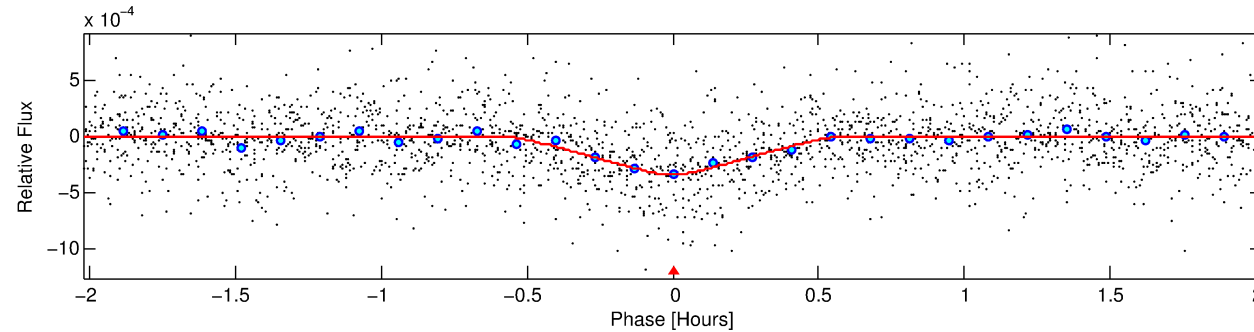
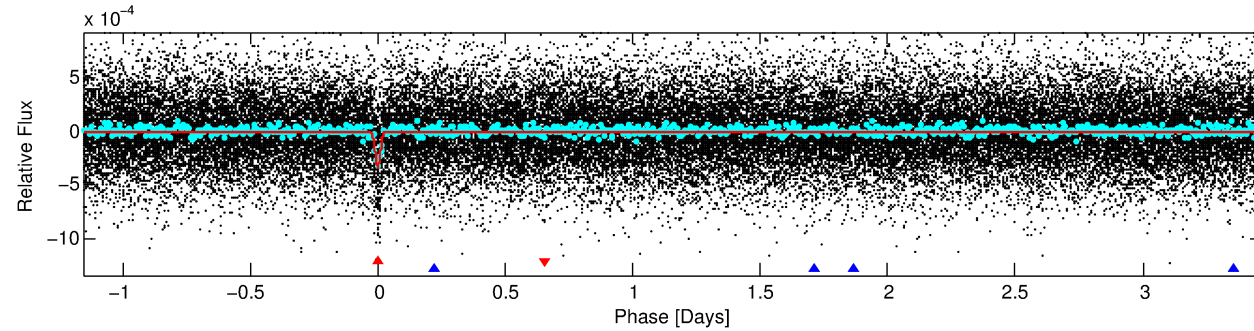
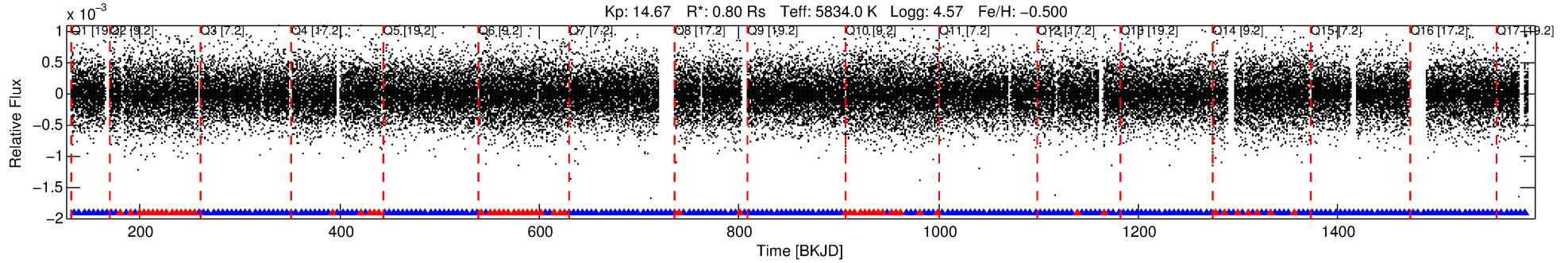
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008439323-01

No Significant Match Found

DV One-Page Summary

KIC: 8439323 Candidate: 1 of 2 Period: 4.626 d
KOI: K04153.01 Corr: 0.897



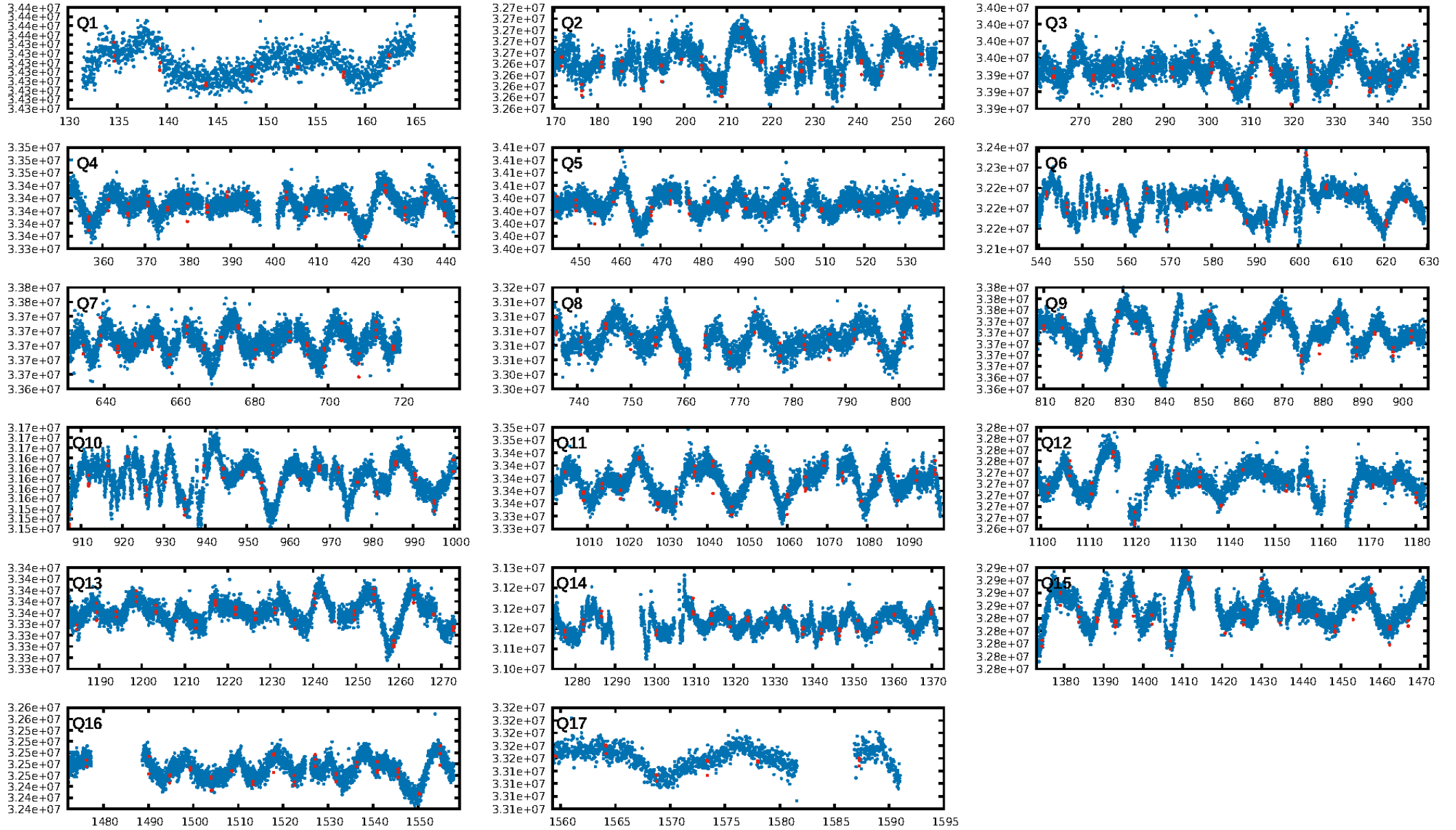
DV Fit Results:

Period = 4.62605 [0.00001] d
Epoch = 134.6772 [0.0008] BKJD
Rp/R* = 0.0202 [0.0079]
a/R* = 25.19 [48.97]
b = 0.90 [0.42]
Seff = 248.19 [83.24]
Teff = 1012 [85] K
Rp = 1.75 [0.83] Re
a = 0.0515 [0.0113] AU
Ag = 21.00 [18.76] [1.07 σ]
Teffp = 3350 [708] K [3.28 σ]

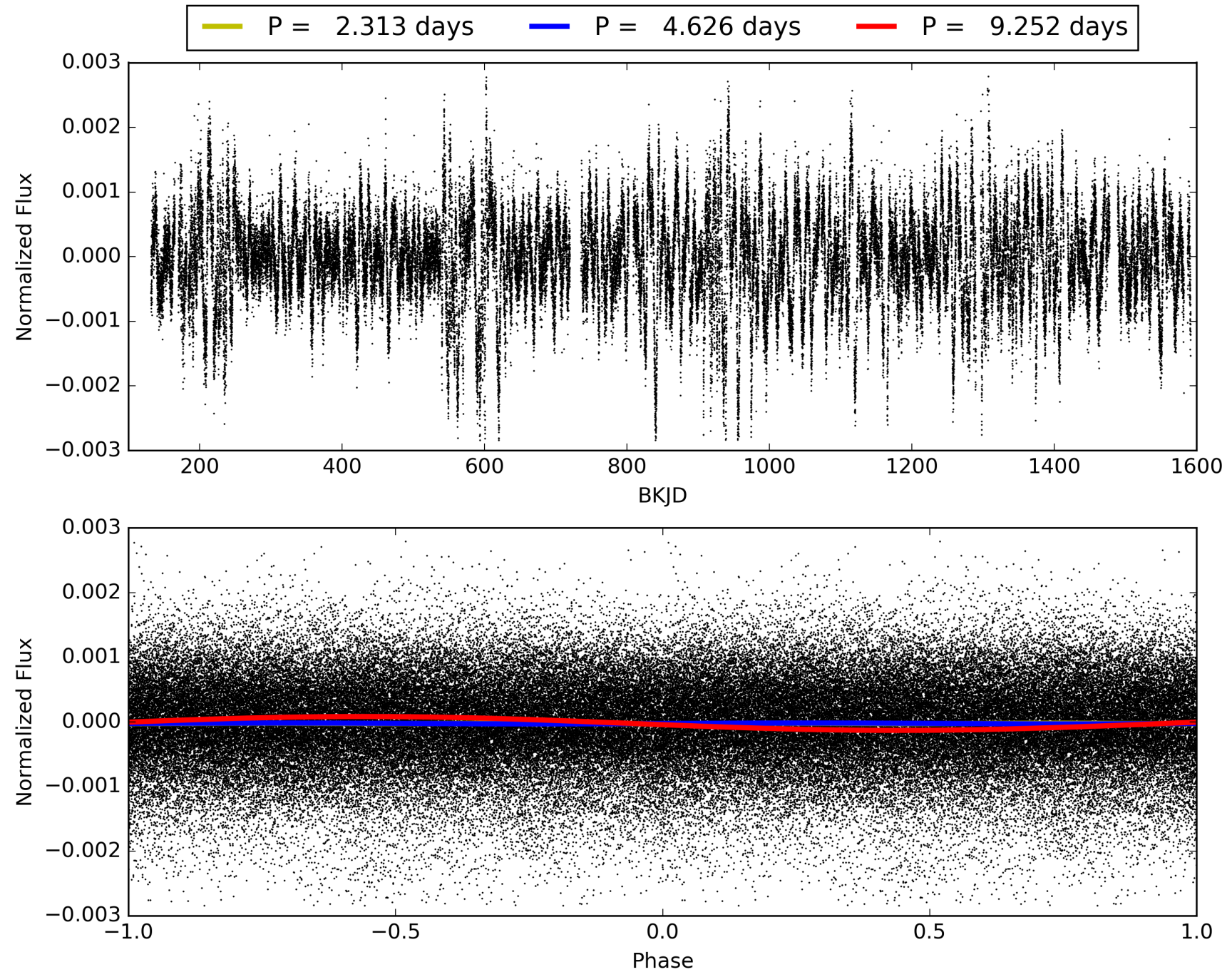
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1132.65 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.30e-39
RollingBand-fgt: 0.78 [222/283]
GhostDiagnostic-chr: 1659
Centroid-sig: 65.8%
Centroid-so: 0.648 arcsec [0.66 σ]
OotOffset-rm: 0.415 arcsec [1.16 σ]
KicOffset-rm: 0.442 arcsec [1.53 σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008439323-01, PDC Light Curves

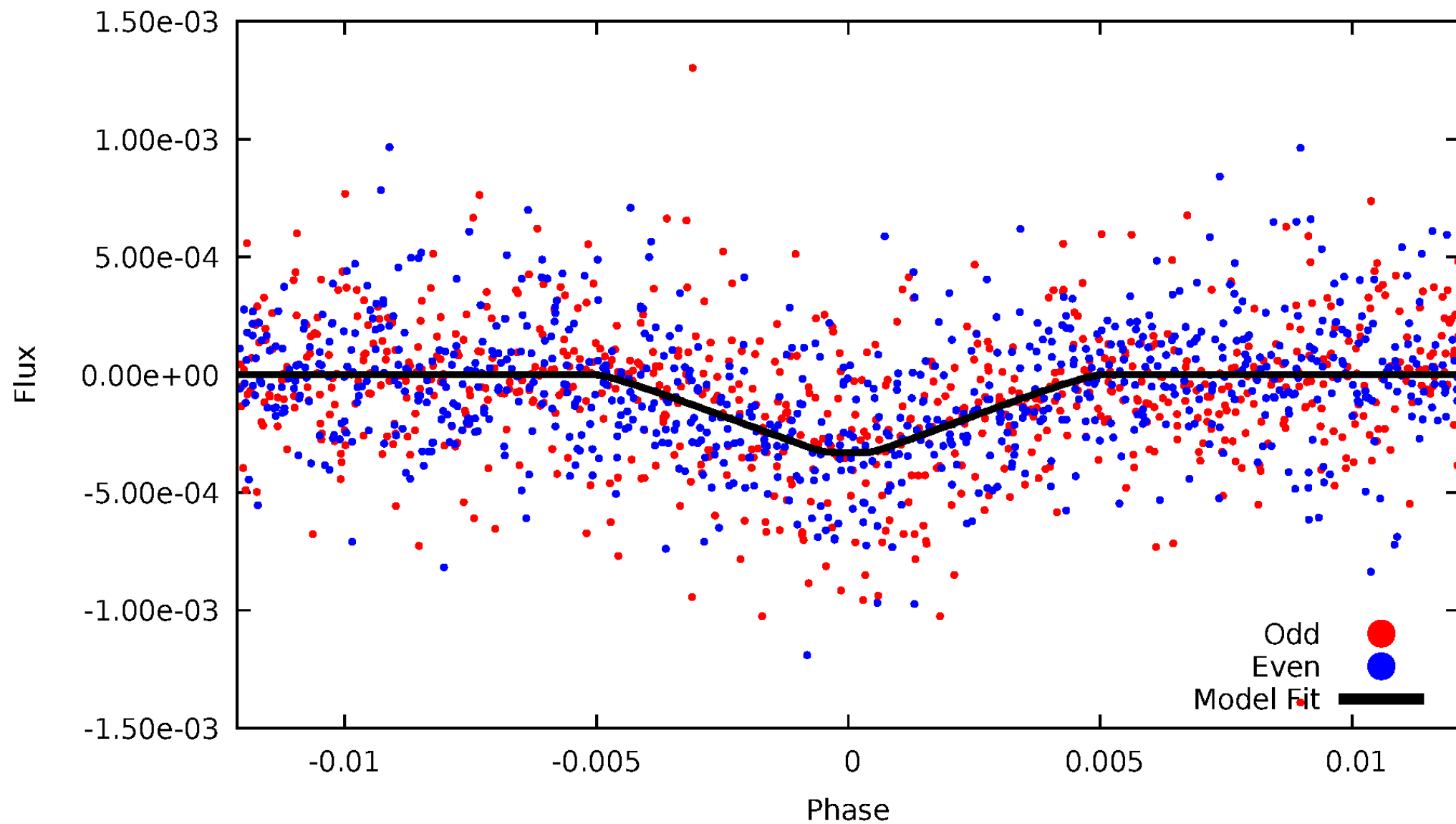


TCE 008439323-01



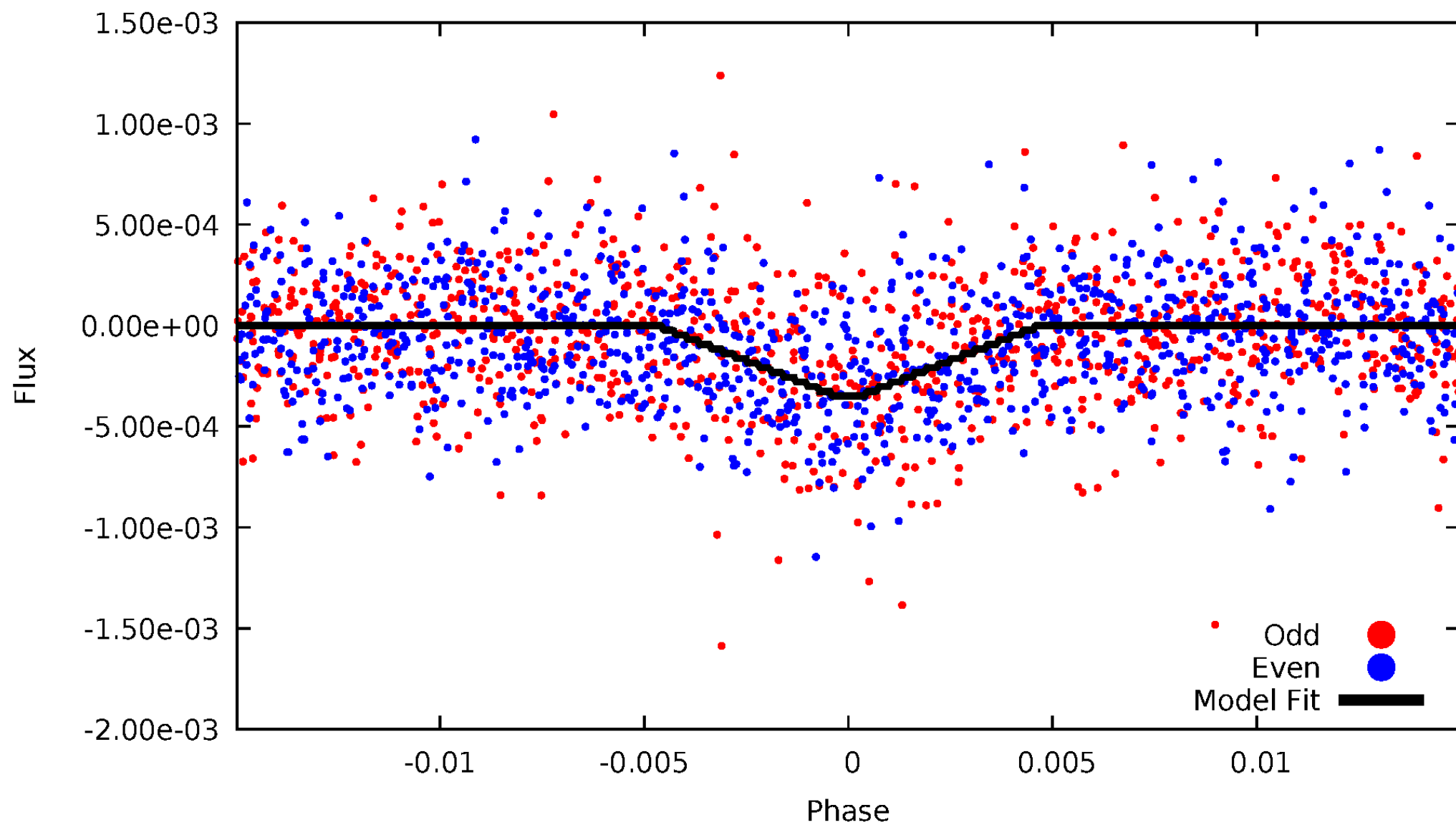
DV Odd/Even

TCE 008439323-01

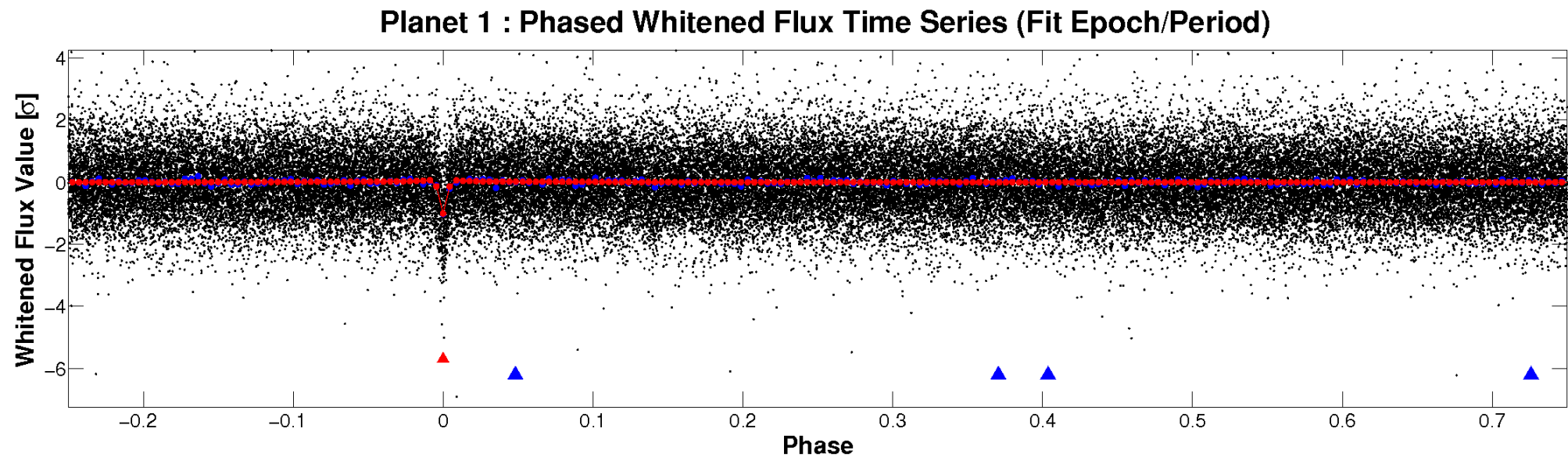
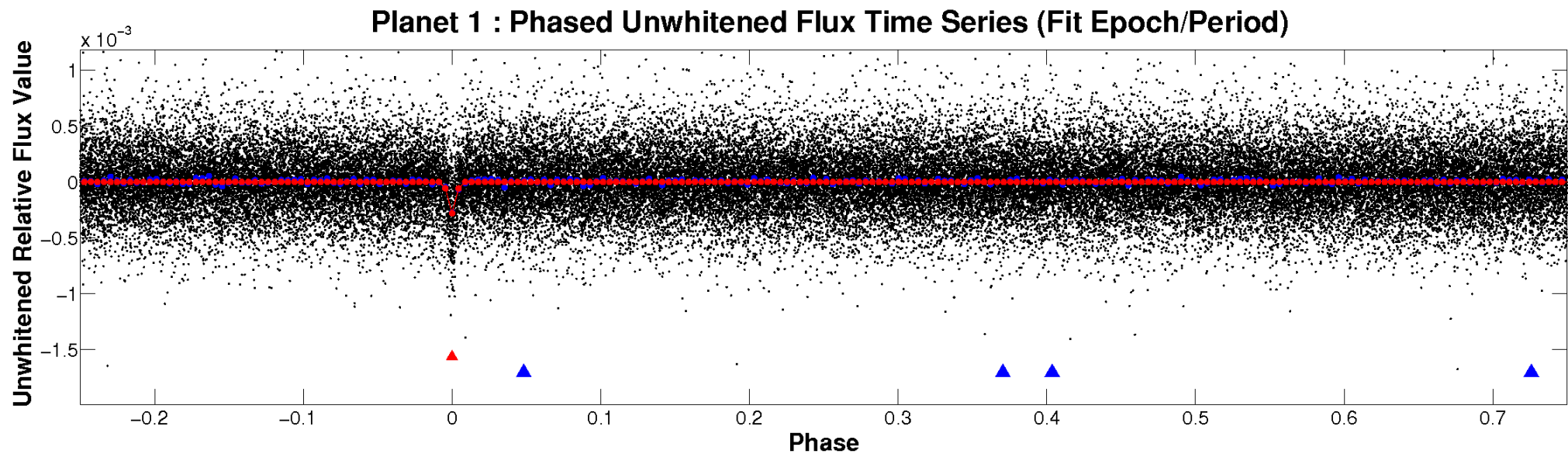


ALT Odd/Even

TCE 008439323-01

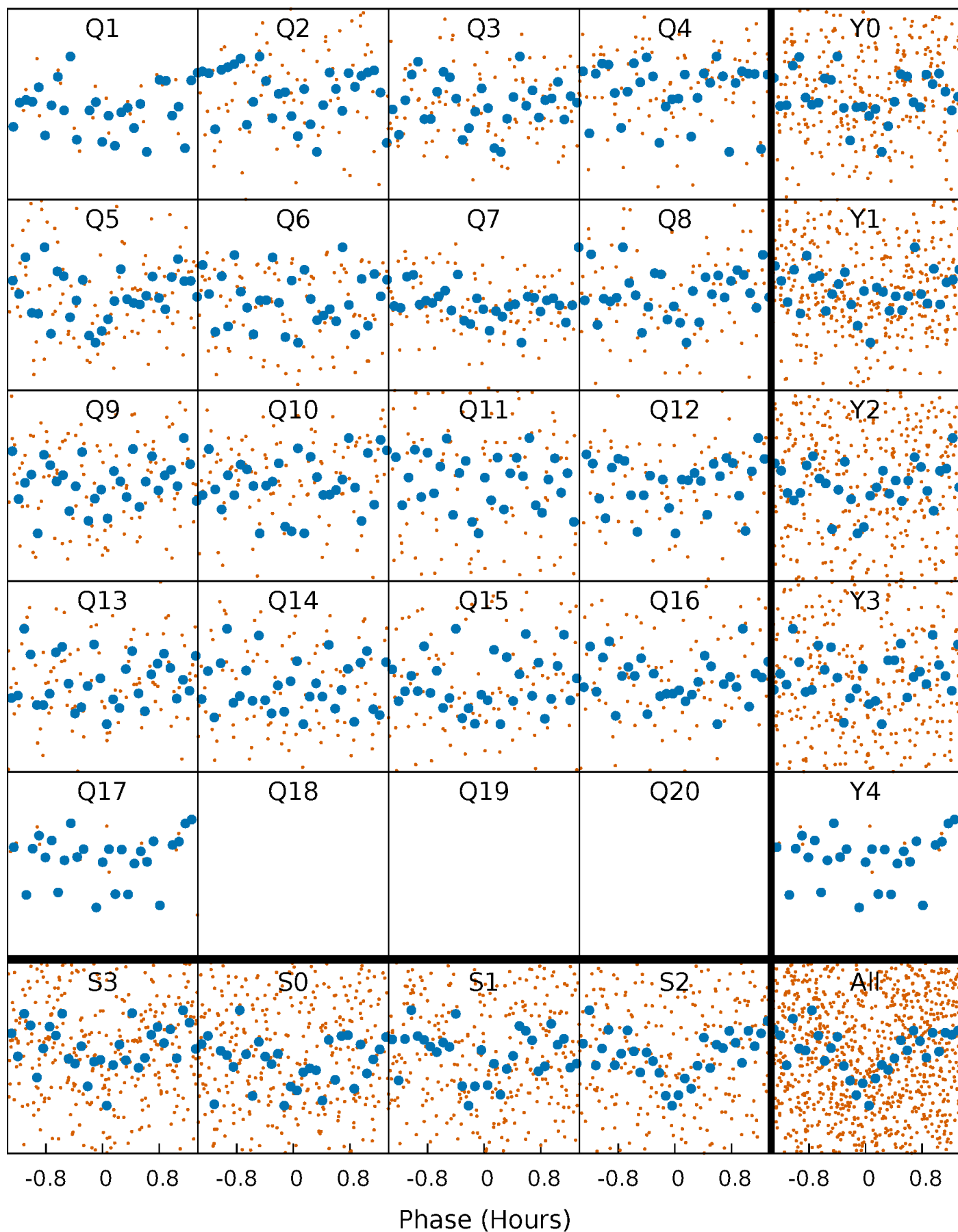


Non-Whitened Vs. Whitened Light Curve



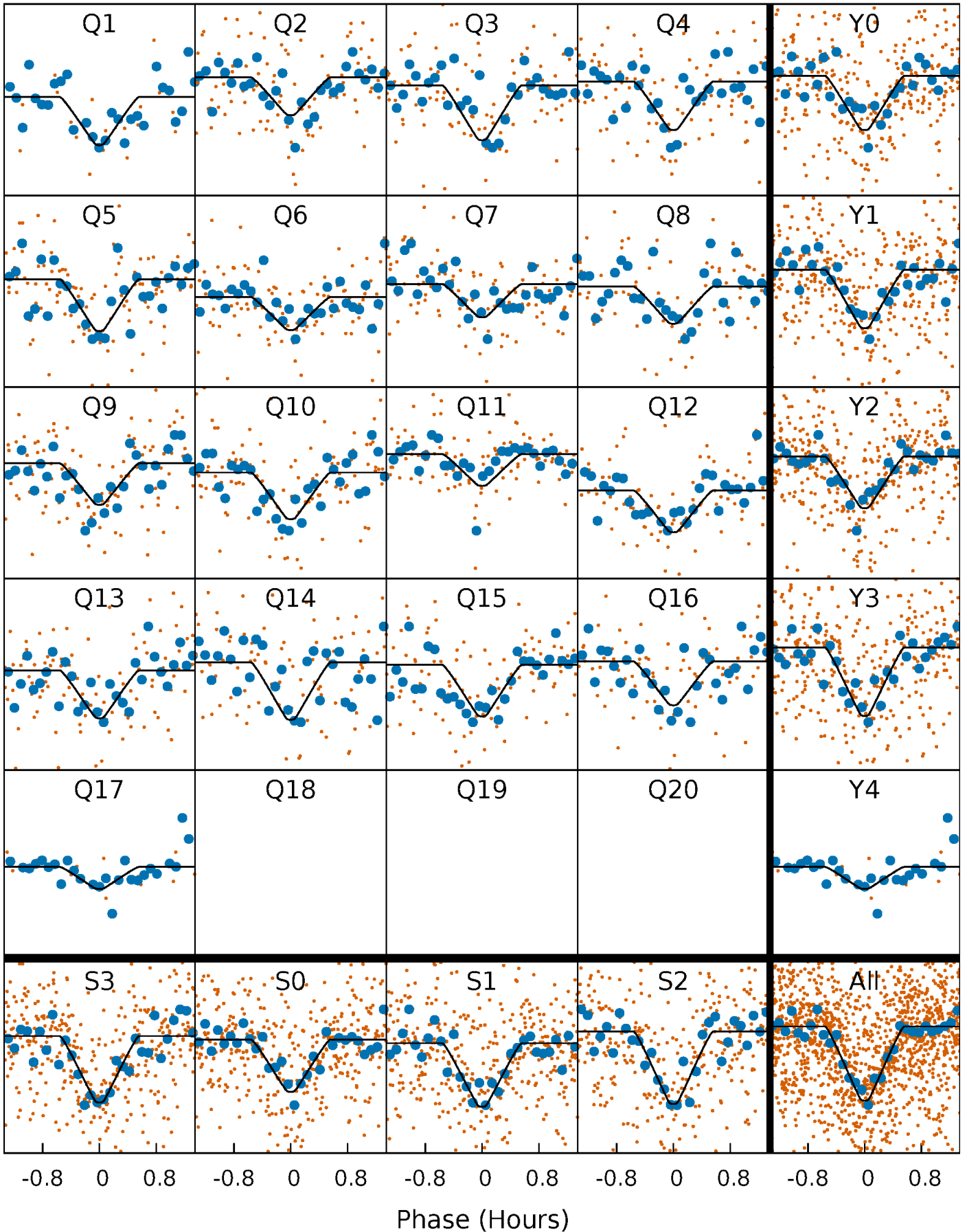
PDC Quarter-Phased Transit Curves

TCE 008439323-01 P= 4.626053 Days $T_0=134.677186$ (BKJD)



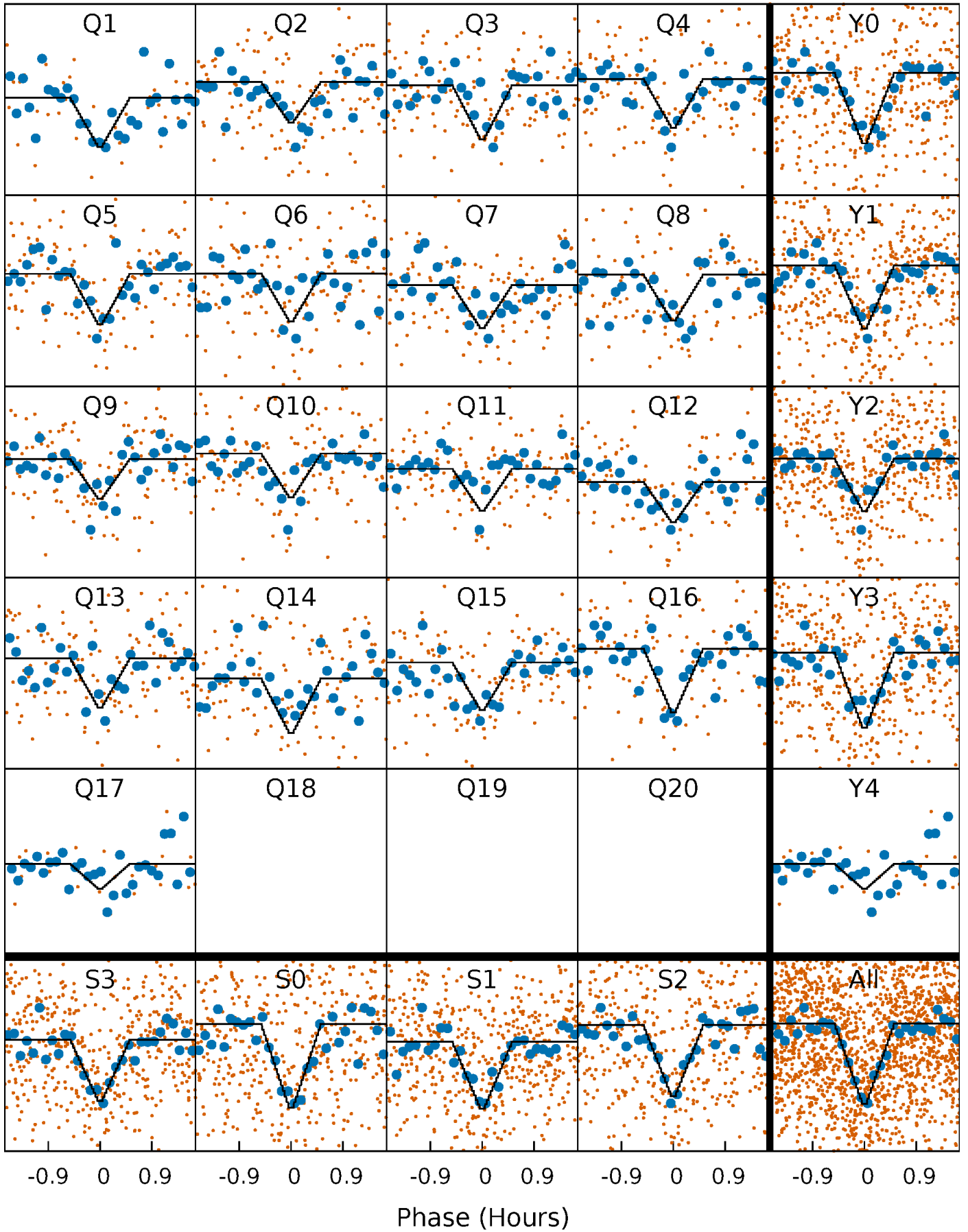
DV Quarter-Phased Transit Curves

TCE 008439323-01 P= 4.626053 Days $T_0=134.677186$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

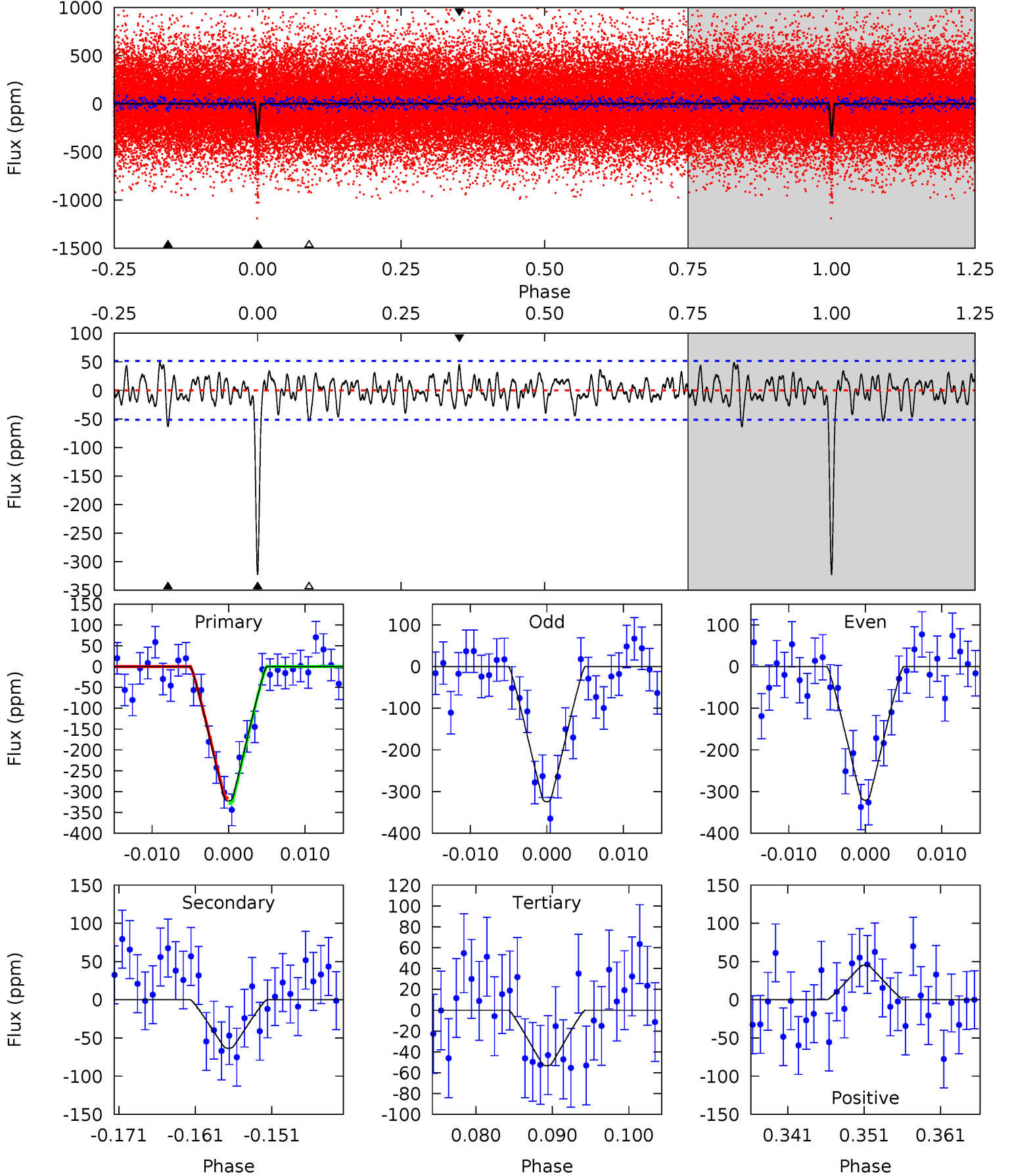
TCE 008439323-01 P= 4.626050 Days $T_0=134.677642$ (BKJD)



DV Model-Shift Uniqueness Test

008439323-01, P = 4.626053 Days, E = 130.051133 Days

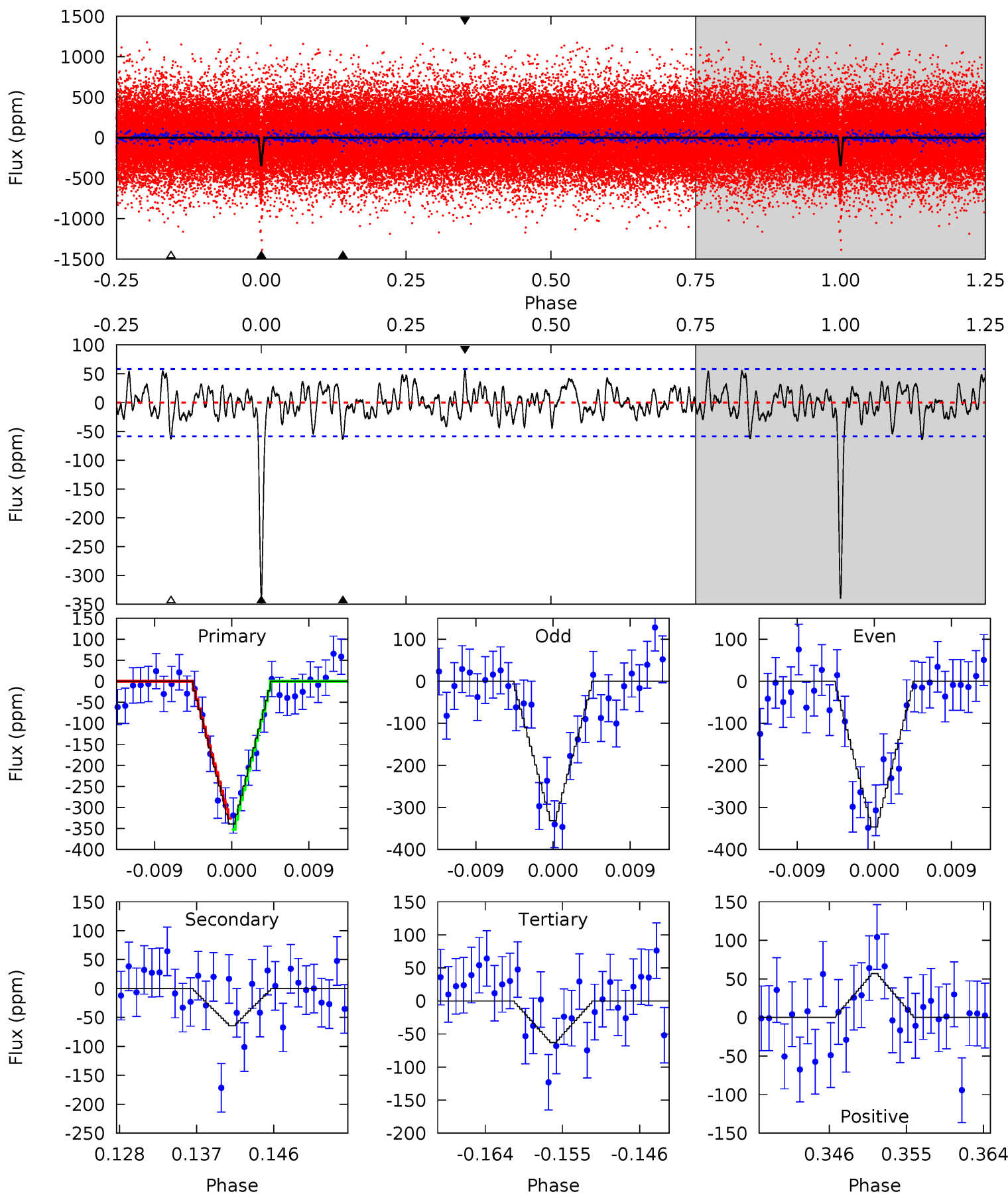
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	6.18	5.19	4.41	5.03	2.57	1.66	26.2	27.0	0.99	1.78	0.20	1.00	0.13	0.64



Alt Model-Shift Uniqueness Test

008439323-01, P = 4.626050 Days, E = 130.051592 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.3	5.54	5.45	4.91	5.04	2.61	1.74	23.9	24.4	0.08	0.62	0.66	1.03	0.14	1.15



Stellar Parameters For KIC 008439323

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5834^{+157}_{-174}	$4.566^{+0.042}_{-0.168}$	$-0.500^{+0.300}_{-0.300}$	$0.797^{+0.213}_{-0.071}$	$0.852^{+0.095}_{-0.086}$	$2.373^{+0.526}_{-1.069}$
	+3%/-3%	+1%/-4%	+60%/-60%	+27%/-9%	+11%/-10%	+22%/-45%
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 008439323-01 / KOI 4153.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-63 ± 10	$1.82^{+0.76}_{-0.72}$	1441^{+90}_{-63}	3985^{+835}_{-471}	28^{+45}_{-15}
Alt.	-64 ± 12	$1.66^{+0.78}_{-0.66}$	1443^{+83}_{-60}	4077^{+994}_{-486}	32^{+60}_{-17}

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

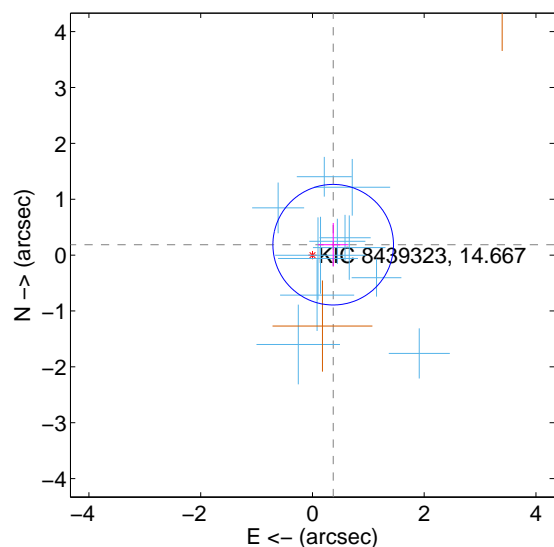
Supplemental centroid analysis for 008439323-01. Kepler magnitude: 14.67. Transit SNR 18.48

There are 12 quarters with good PRF difference image offsets

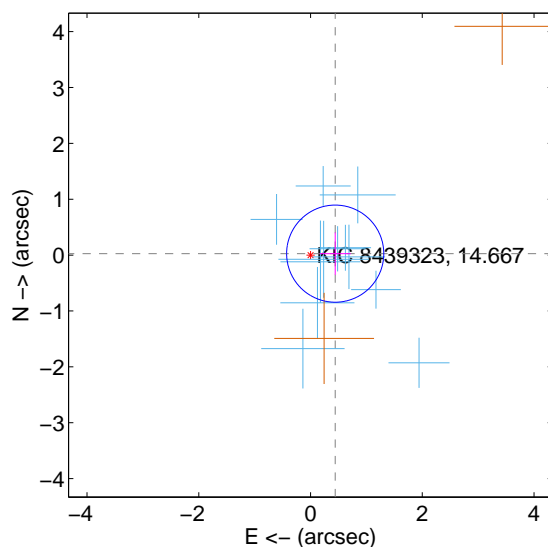
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.415 ± 0.360	1.16	-0.371 ± 0.267	0.186 ± 0.388
PRF-fit source offset from KIC position	0.442 ± 0.290	1.53	-0.442 ± 0.278	0.026 ± 0.379
photometric centroid source offset	0.65 ± 0.99	0.66	-0.35 ± 0.87	-0.55 ± 1.03

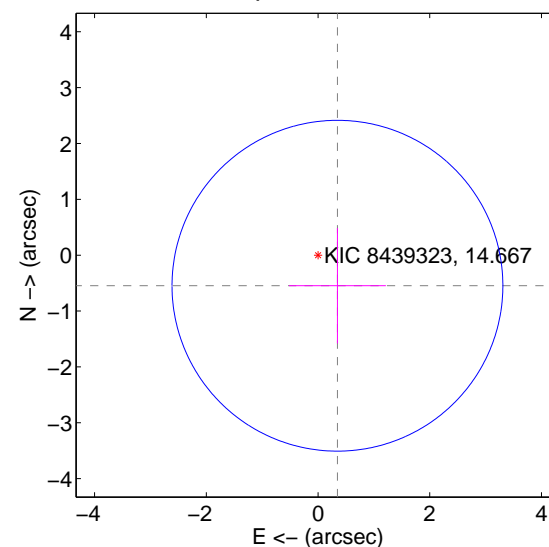
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

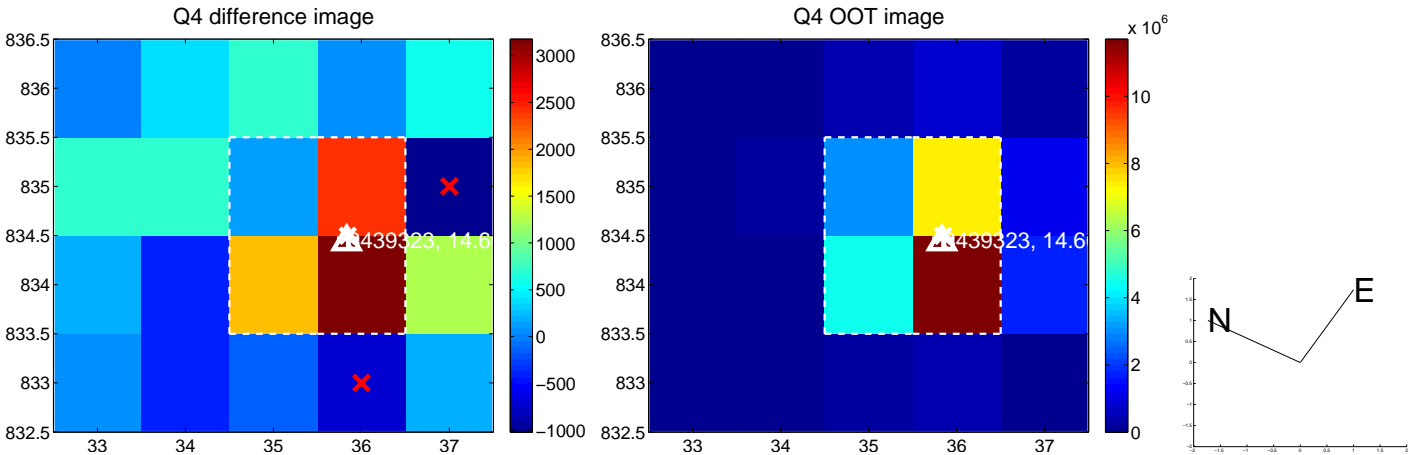
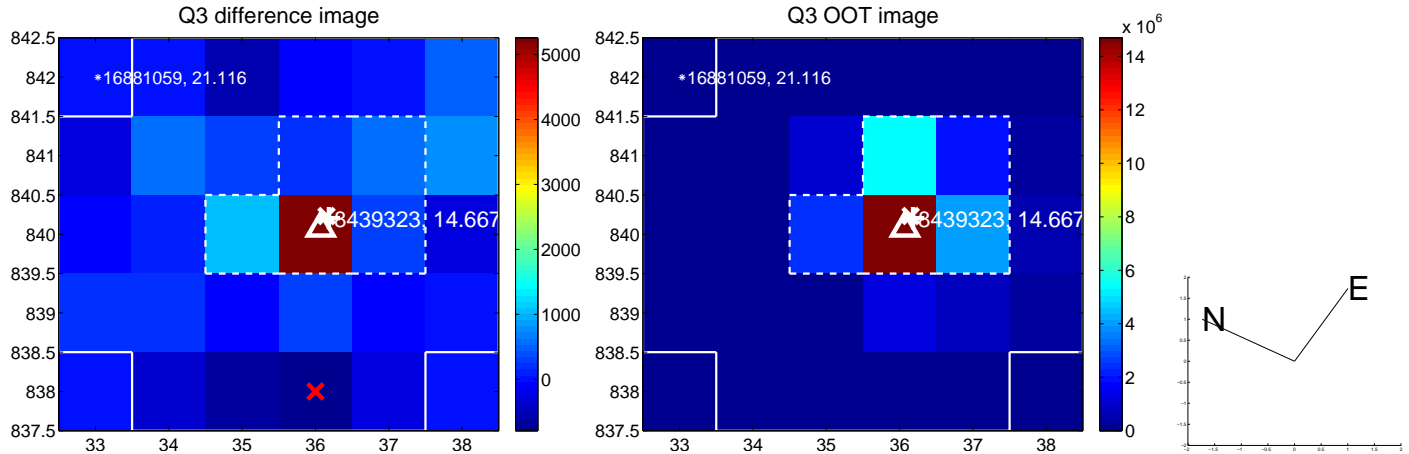
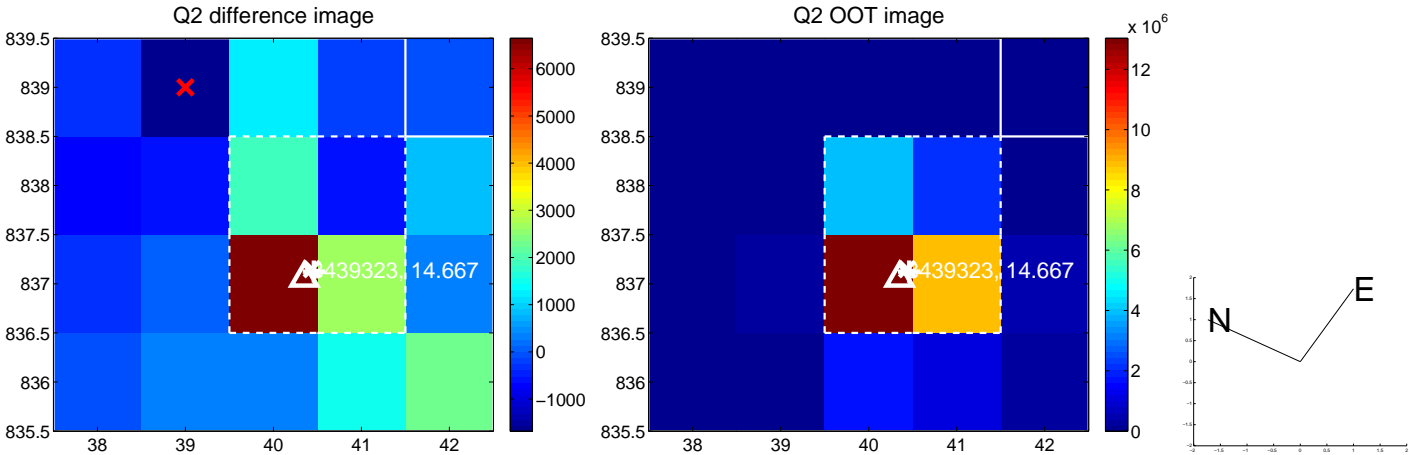
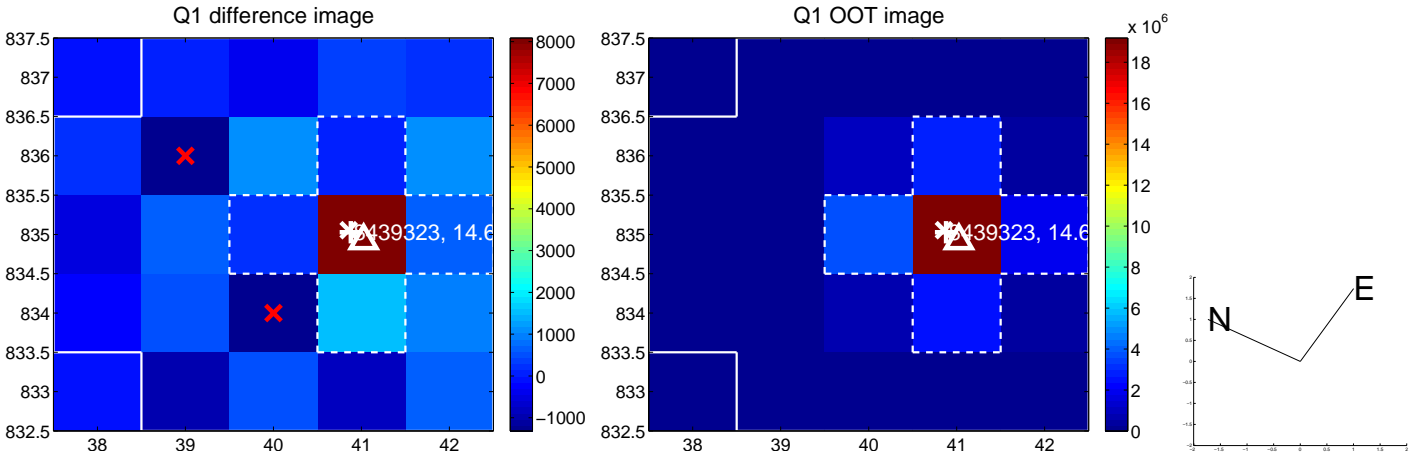


offset from photometric centroids

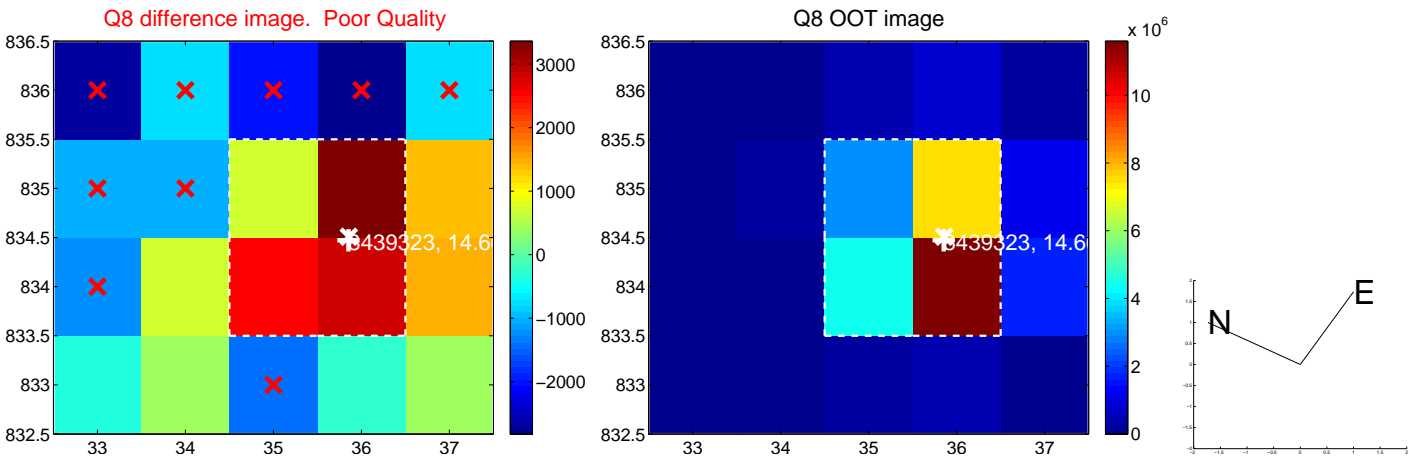
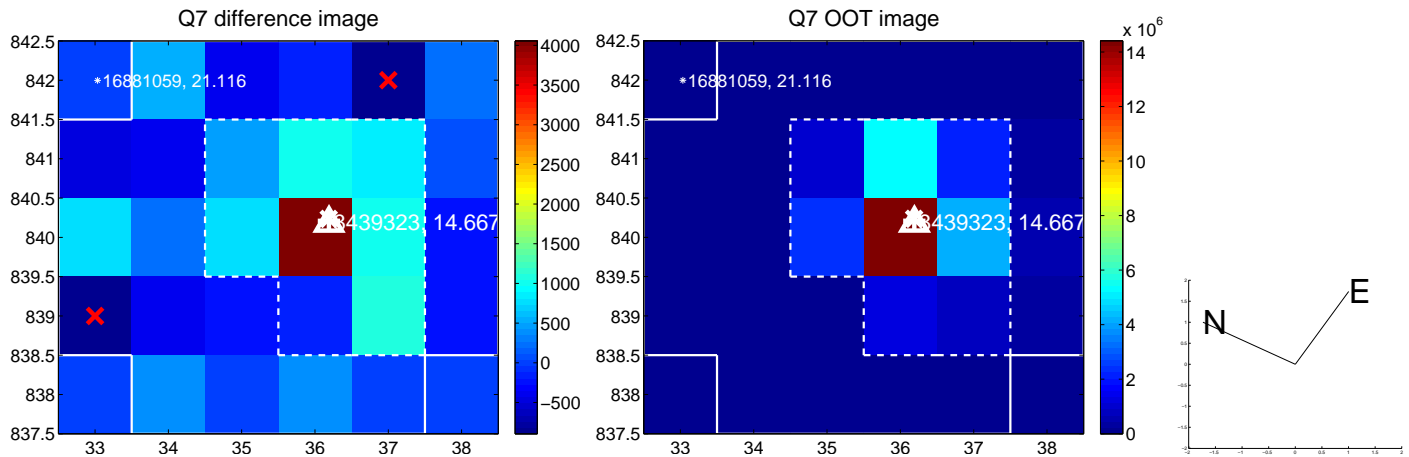
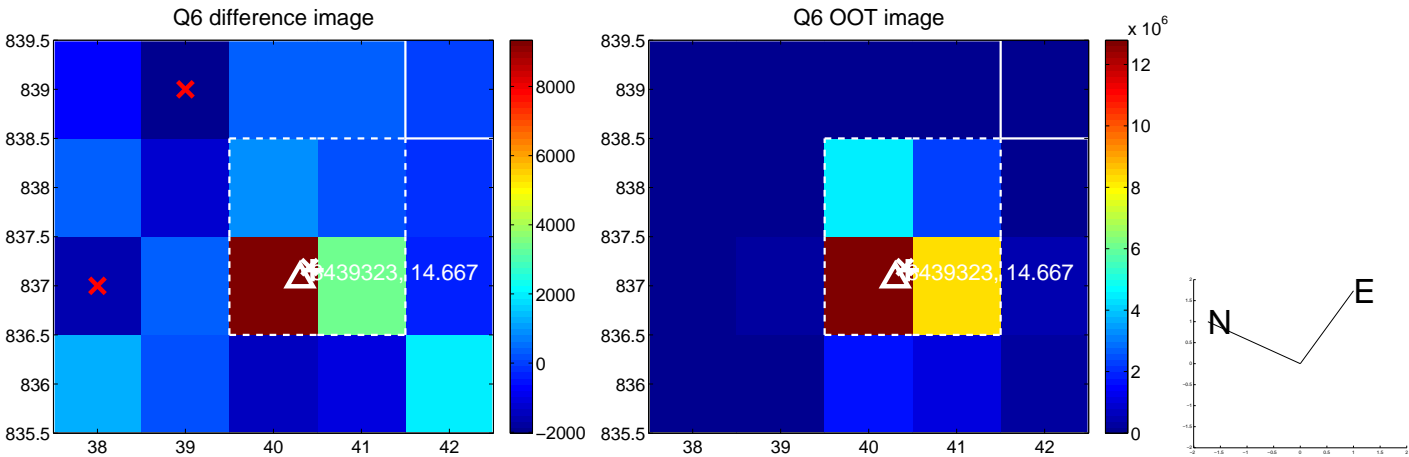
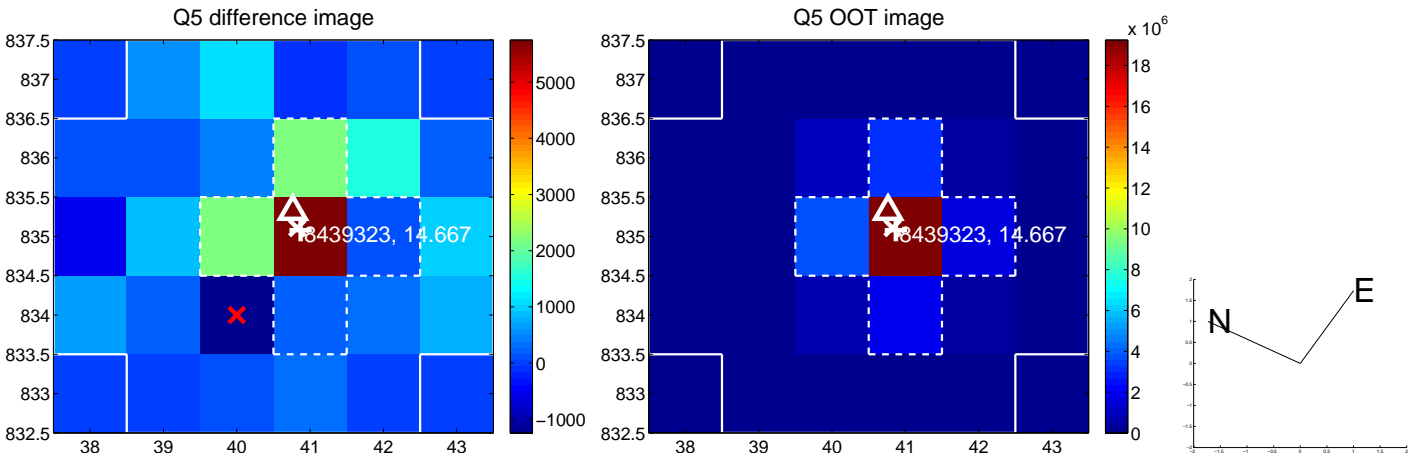


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

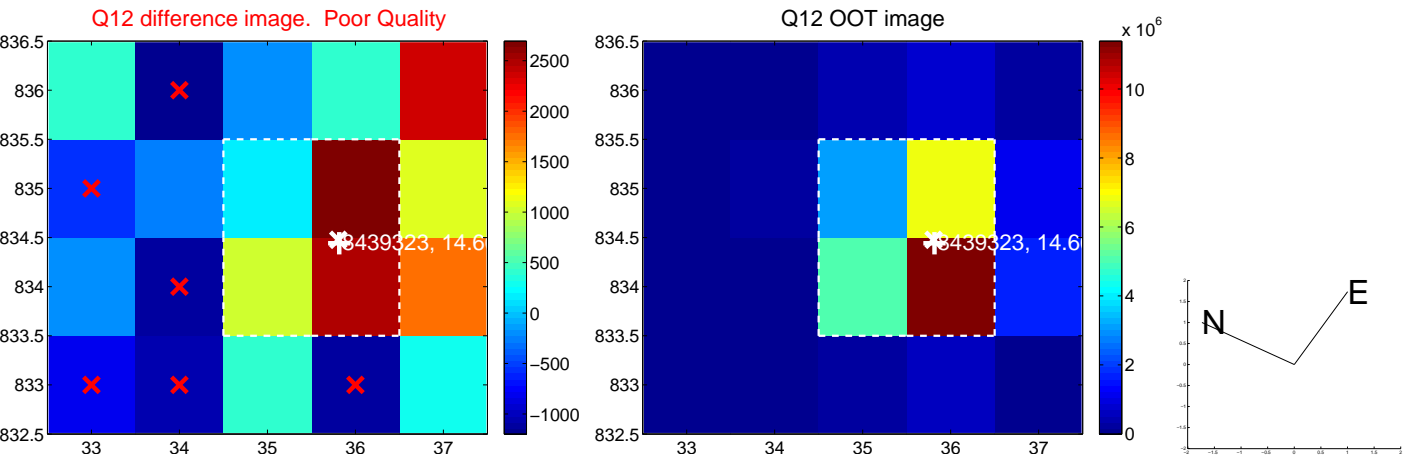
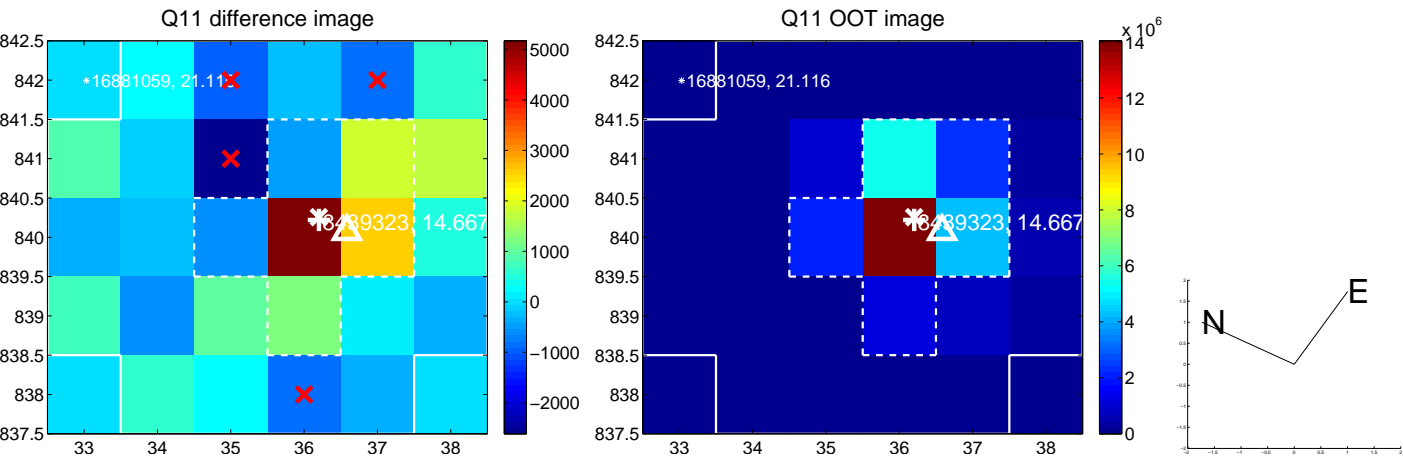
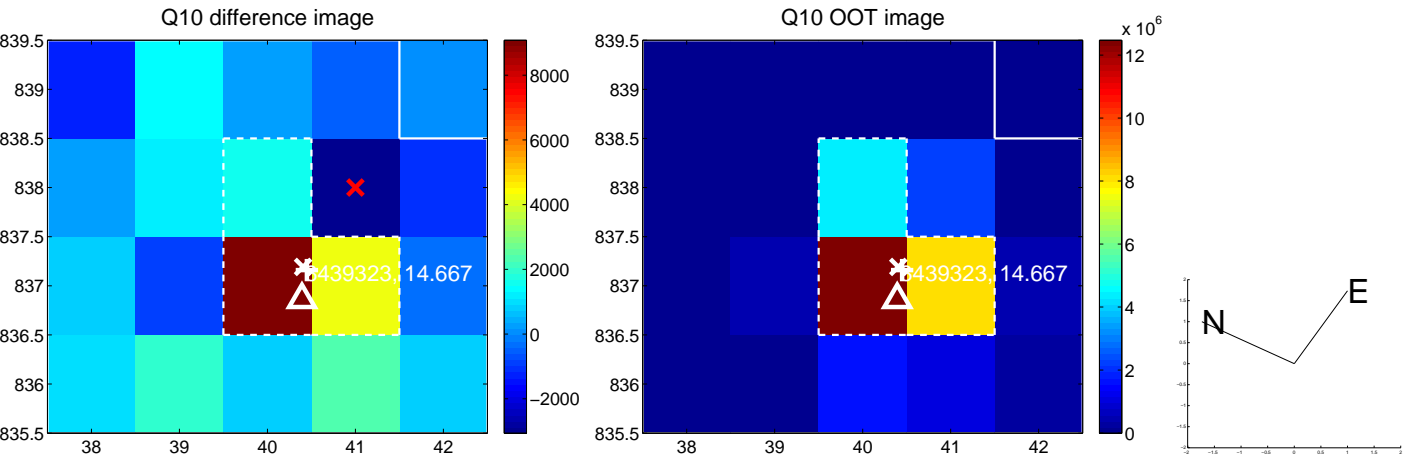
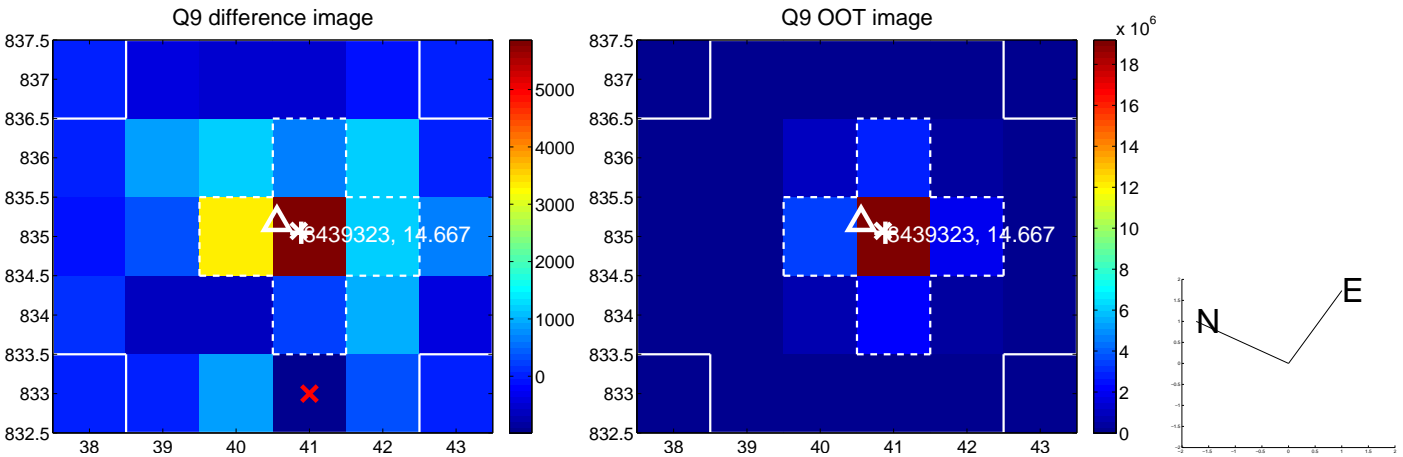
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



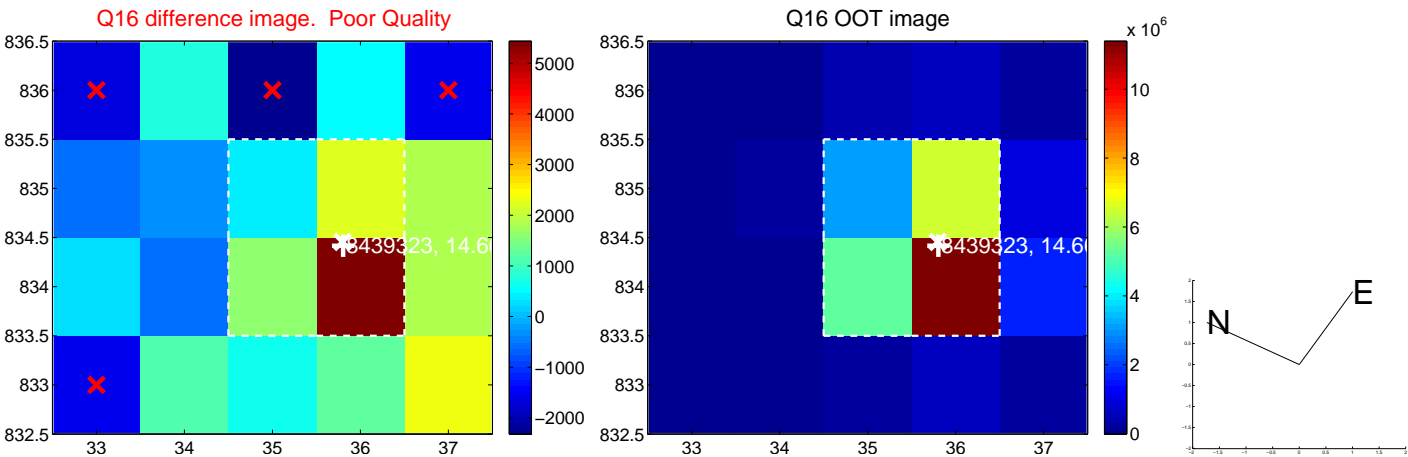
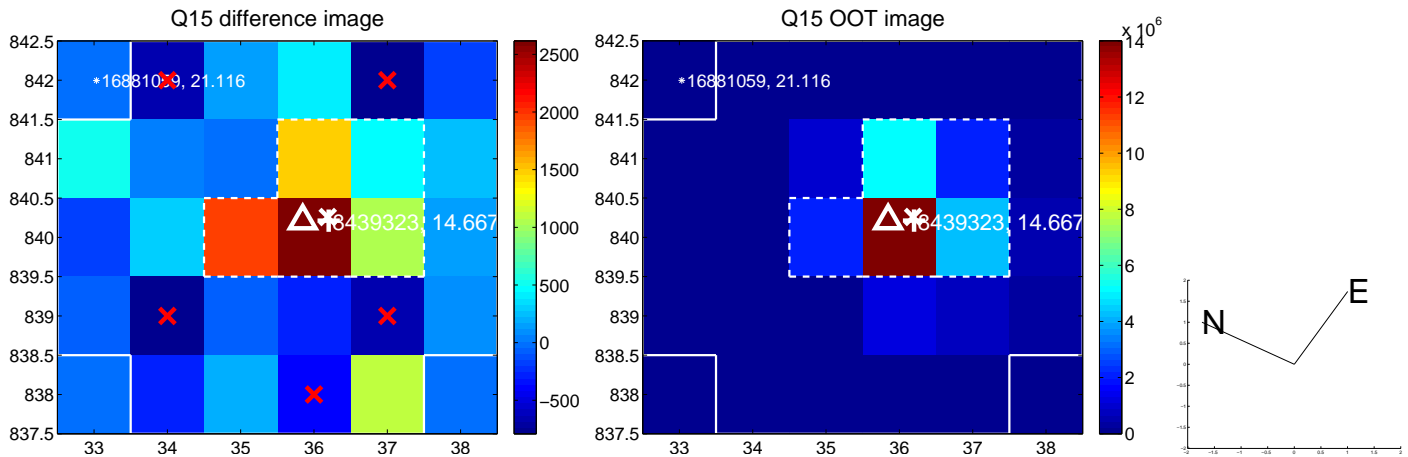
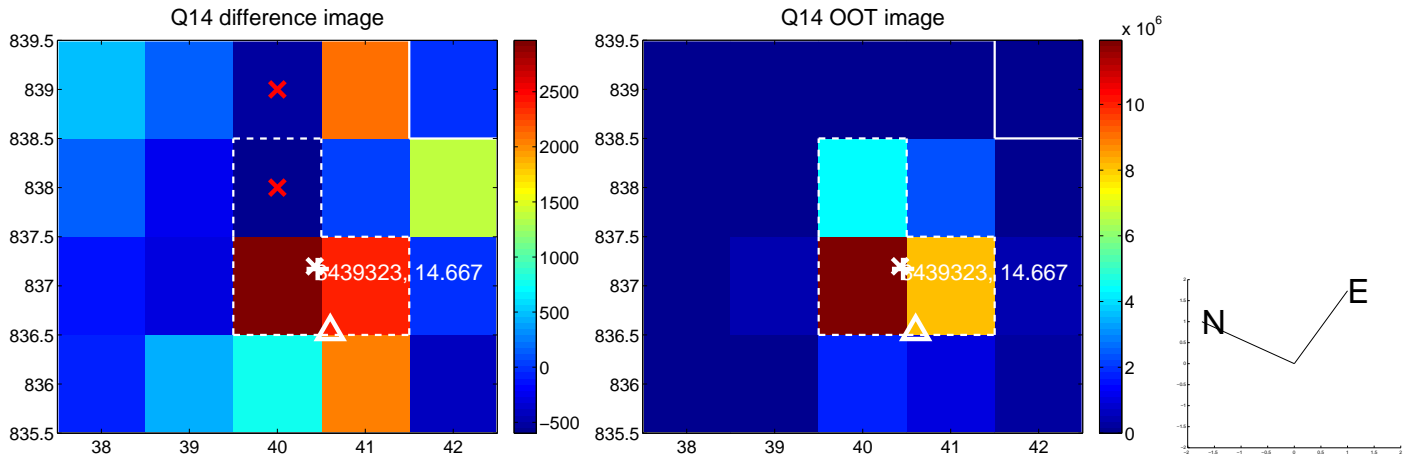
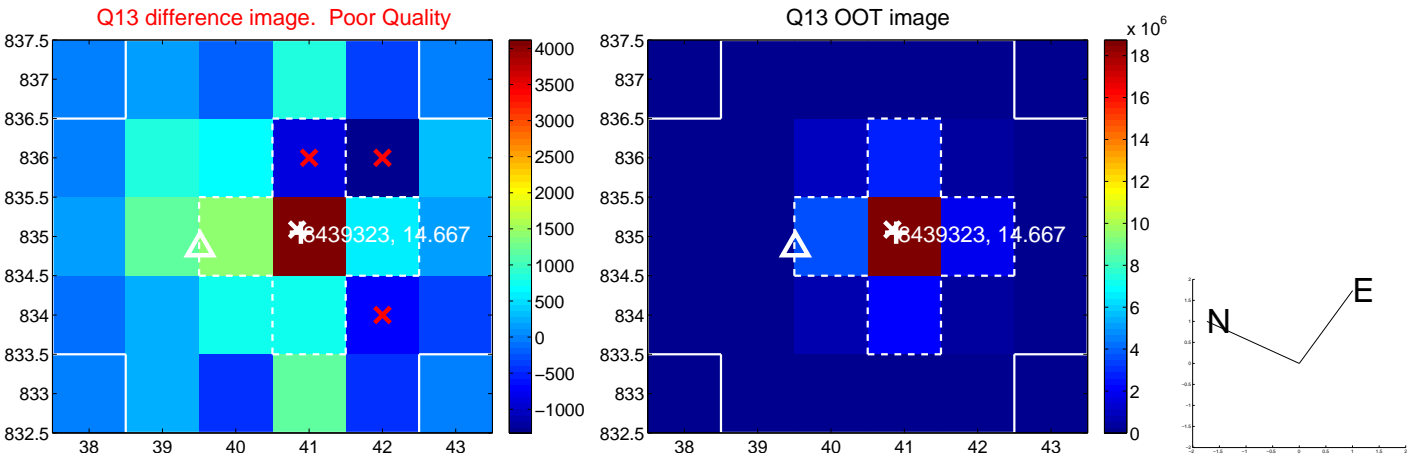
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



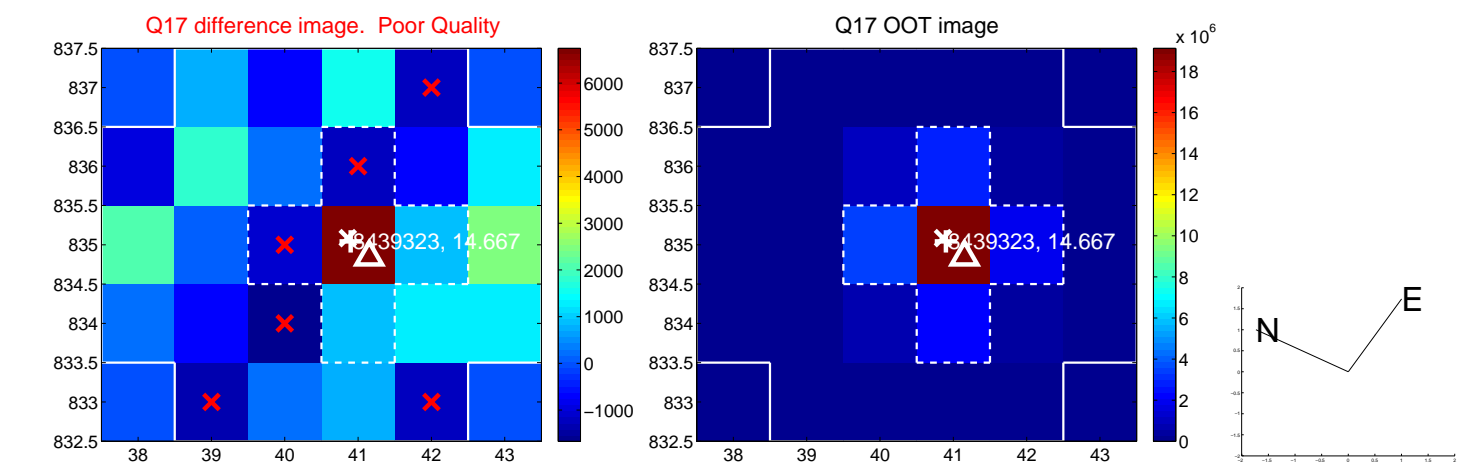
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



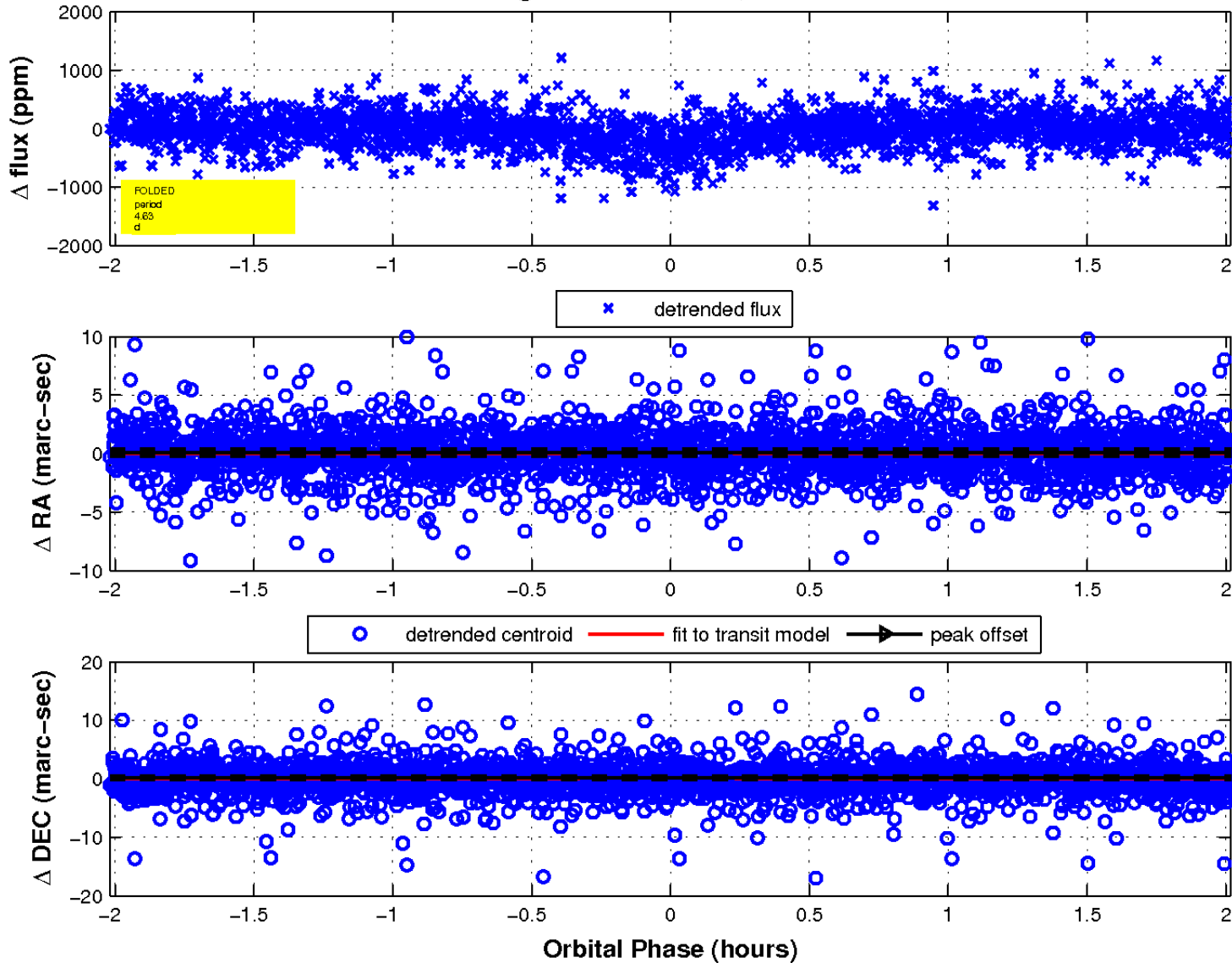
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

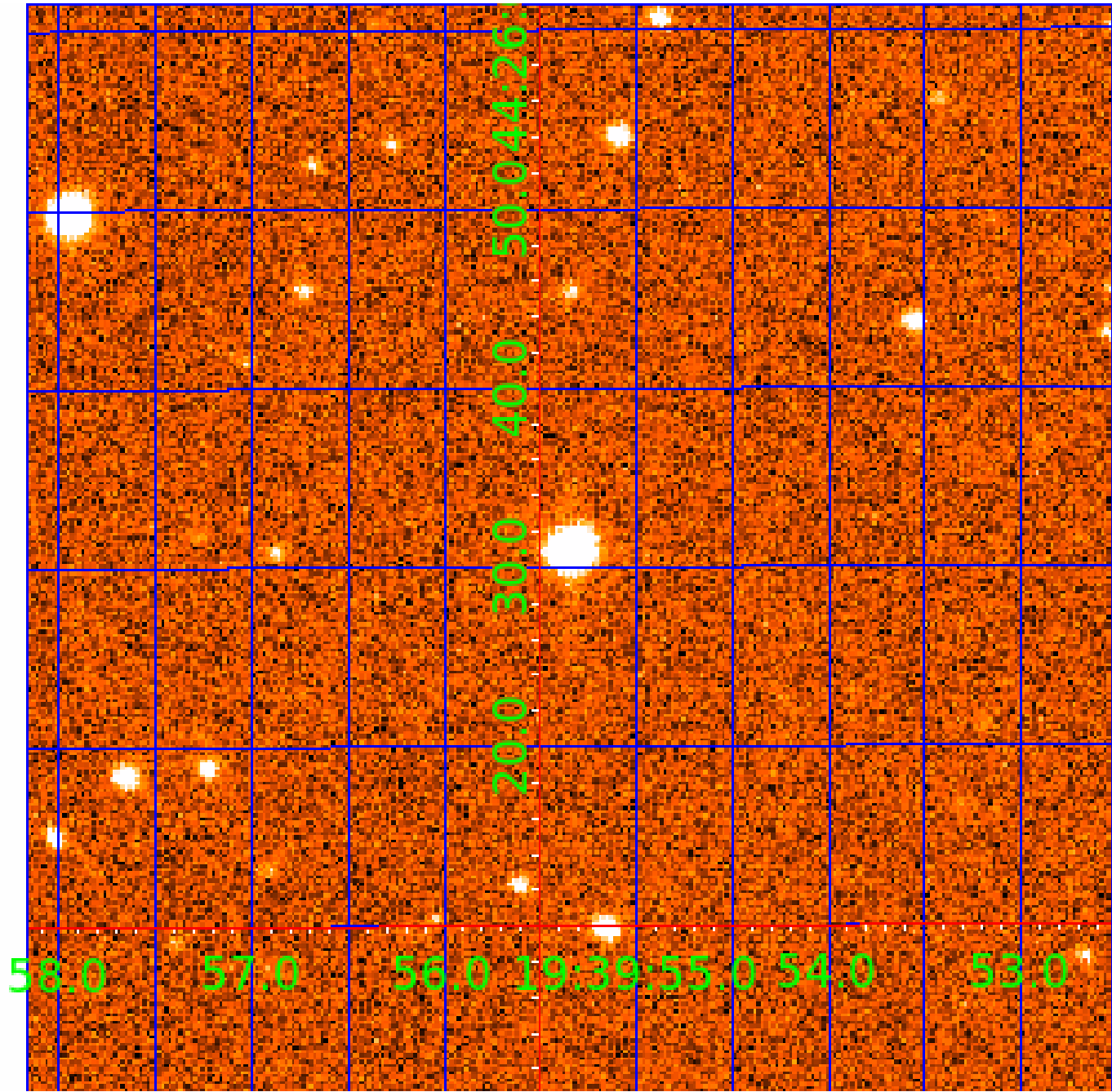


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008439323

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})
008439323-01	OBS	4153.01	4.626053	134.677186	331.4	0.673	13.3	18.5	0.80	5834	1.75	248.19
008439323-02	OBS	No	368.593287	201.155959	1056.2	7.683	7.8	10.2	0.80	5834	2.72	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008439323-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008439323-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

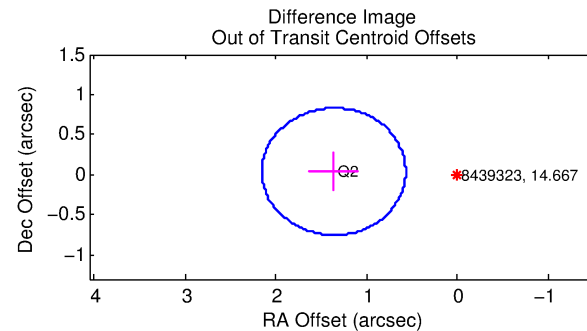
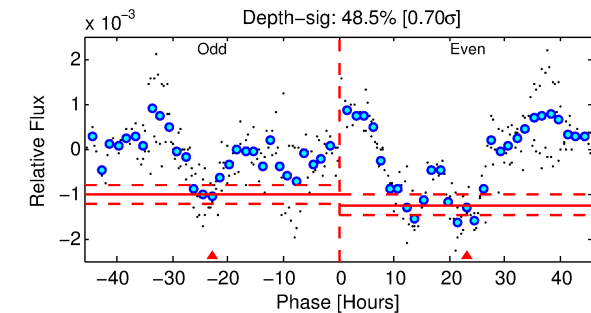
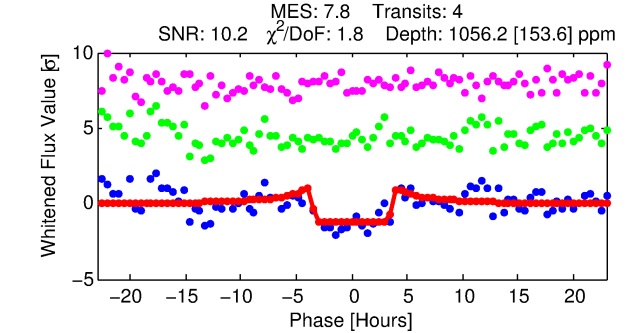
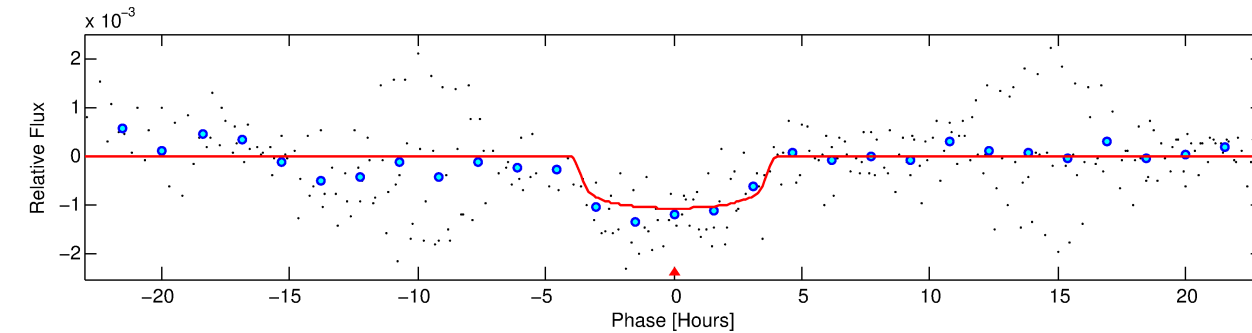
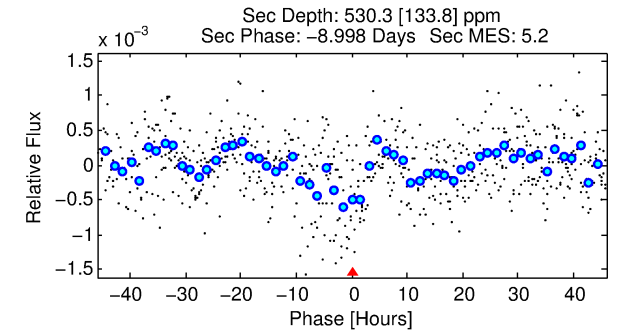
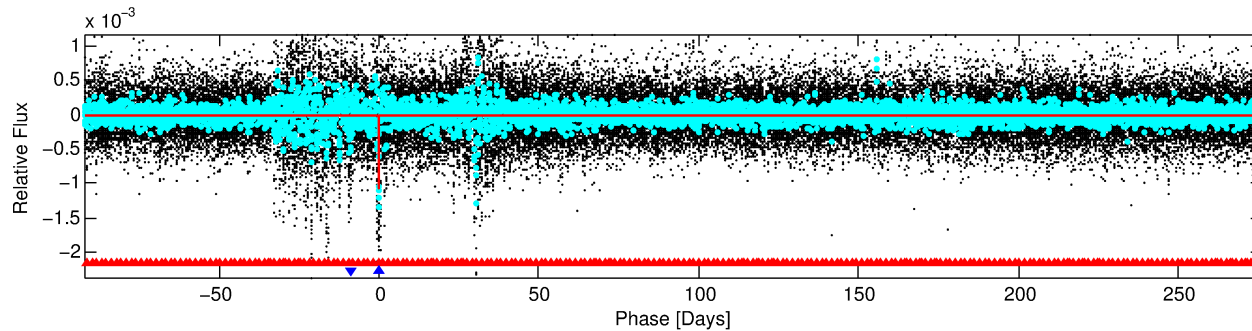
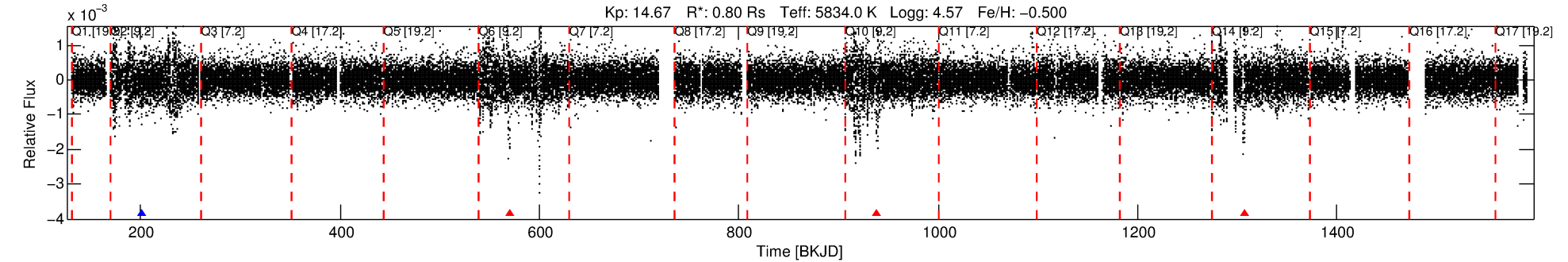
Ephemeris Match Information For 008439323-02

No Significant Match Found

DV One-Page Summary

KIC: 8439323 Candidate: 2 of 2 Period: 368.593 d
KOI: K04153 Corr: No Ephemeris Match

Kp: 14.67 R*: 0.80 Rs Teff: 5834.0 K Logg: 4.57 Fe/H: -0.500



DV Fit Results:

Period = 368.59329 [0.00554] d
Epoch = 201.1560 [0.0108] BKJD
Rp/R* = 0.0312 [0.0127]
a/R* = 301.13 [569.67]
b = 0.62 [1.86]
Seff = 0.72 [0.24]
Teq = 235 [20] K
Rp = 2.72 [1.32] Re
a = 0.9543 [0.2099] AU
Ag = 36003.55 [32728.39] [1.10σ]
Teffp = 5009 [1079] K [4.42σ]

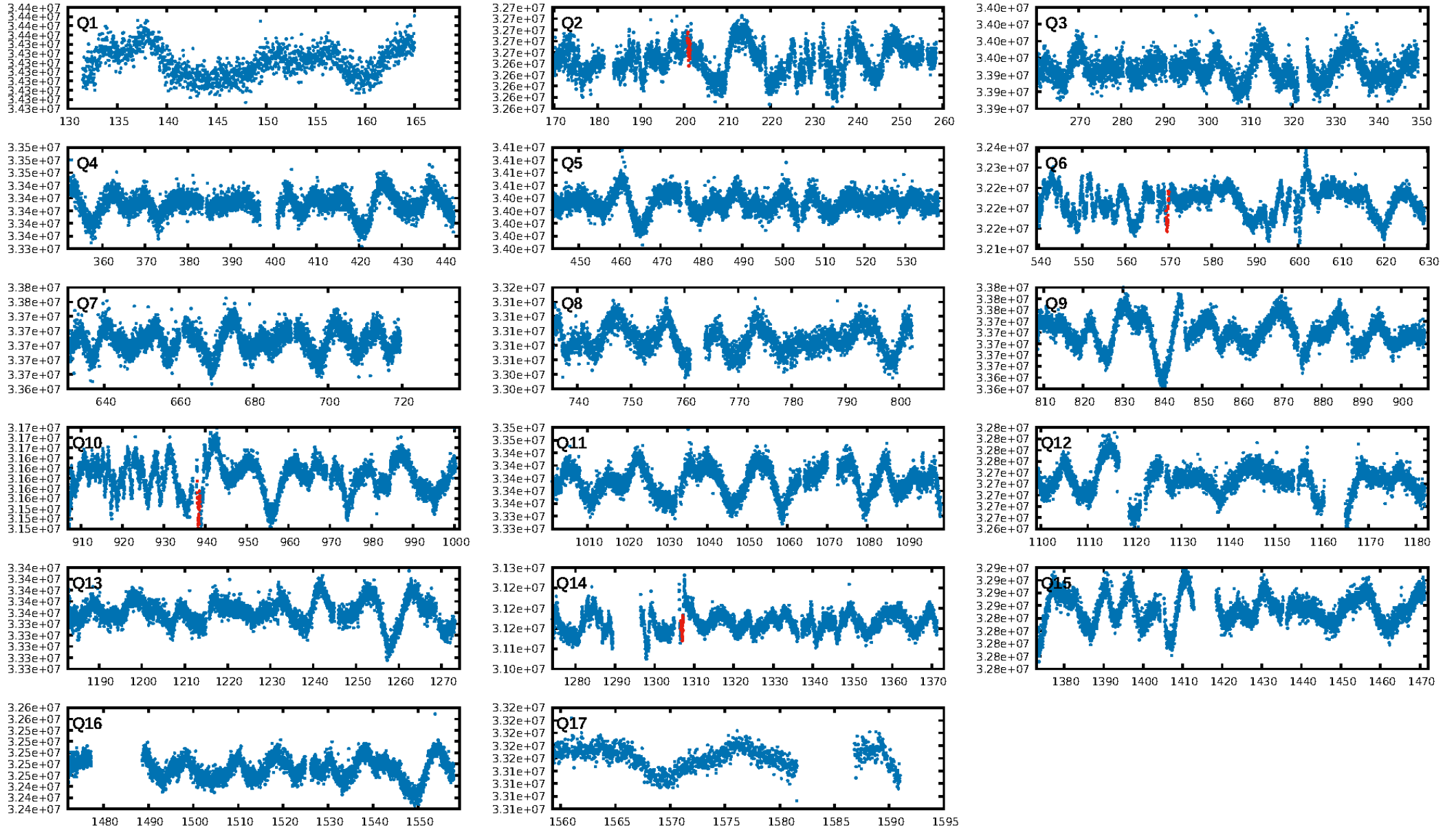
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1132.65σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.6%
ModelChiSquareGof-sig: 76.6%
Bootstrap-pfa: 6.97e-10
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: 4.87
Centroid-sig: 1.4%
Centroid-so: 2.755 arcsec [1.44σ]
OotOffset-rm: 1.360 arcsec [5.15σ]
KicOffset-rm: 1.313 arcsec [4.98σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
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DiffImageOverlap-fno: 0.50 [1/2]

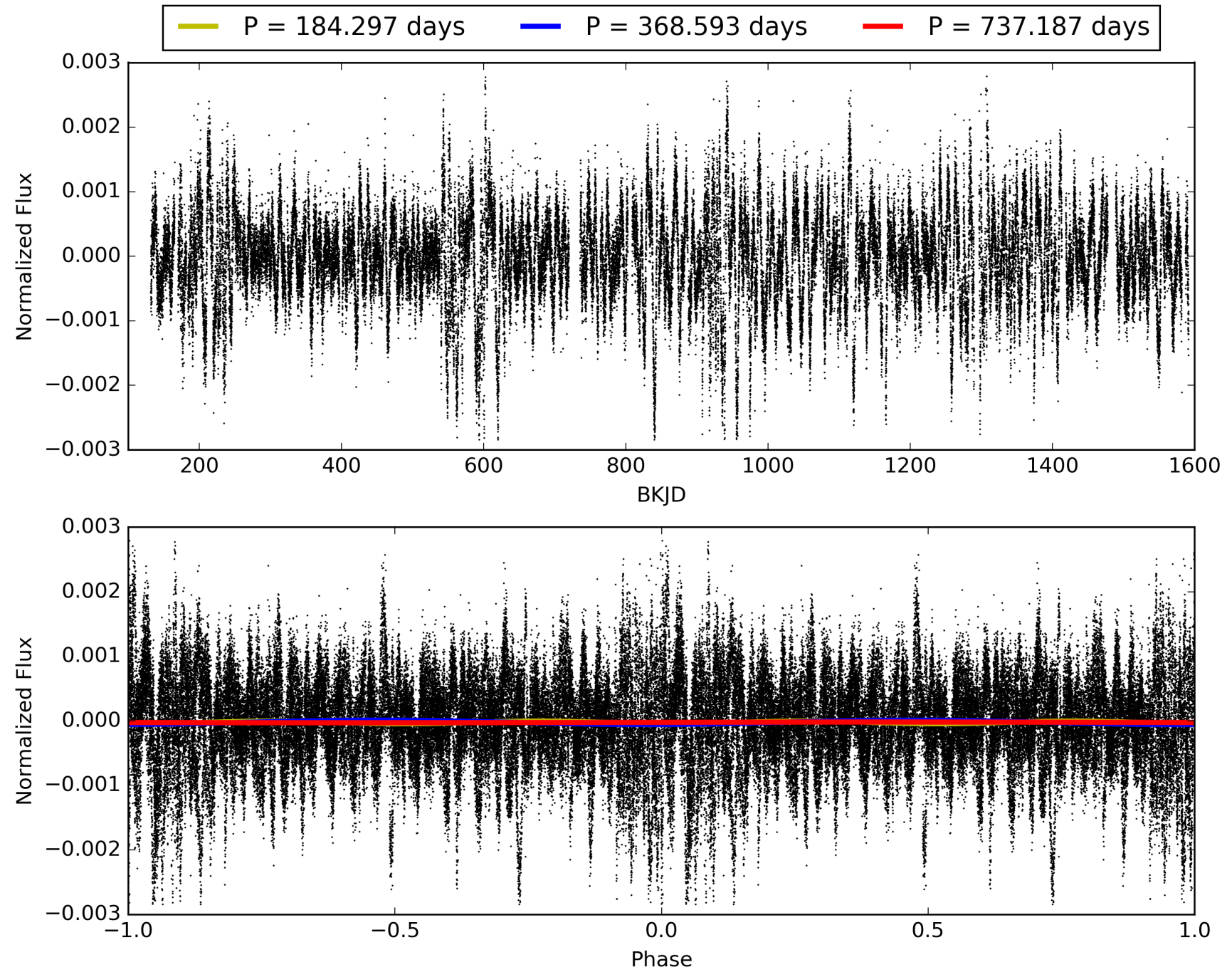
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:20:50 Z

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

TCE 008439323-02, PDC Light Curves

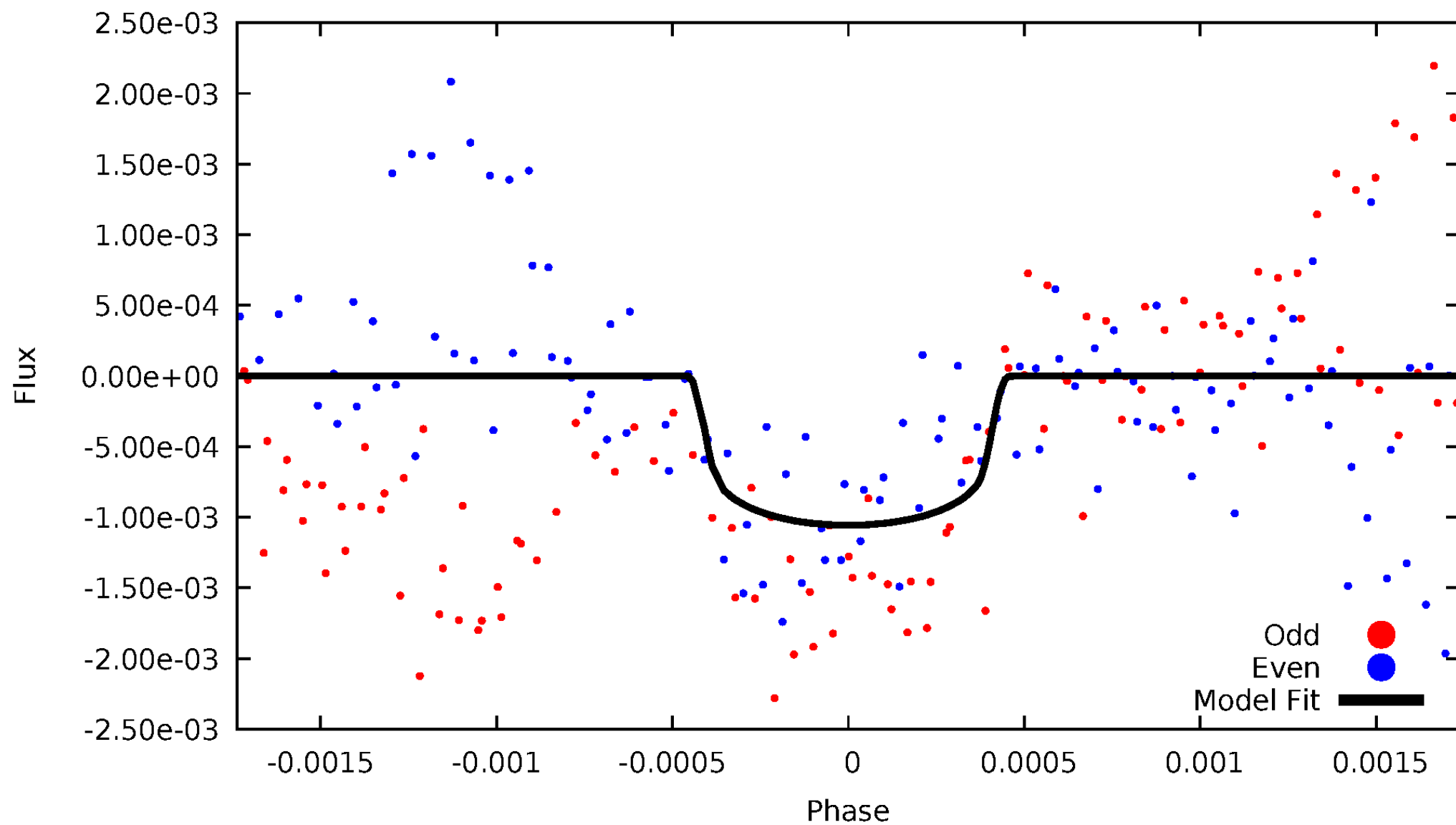


TCE 008439323-02



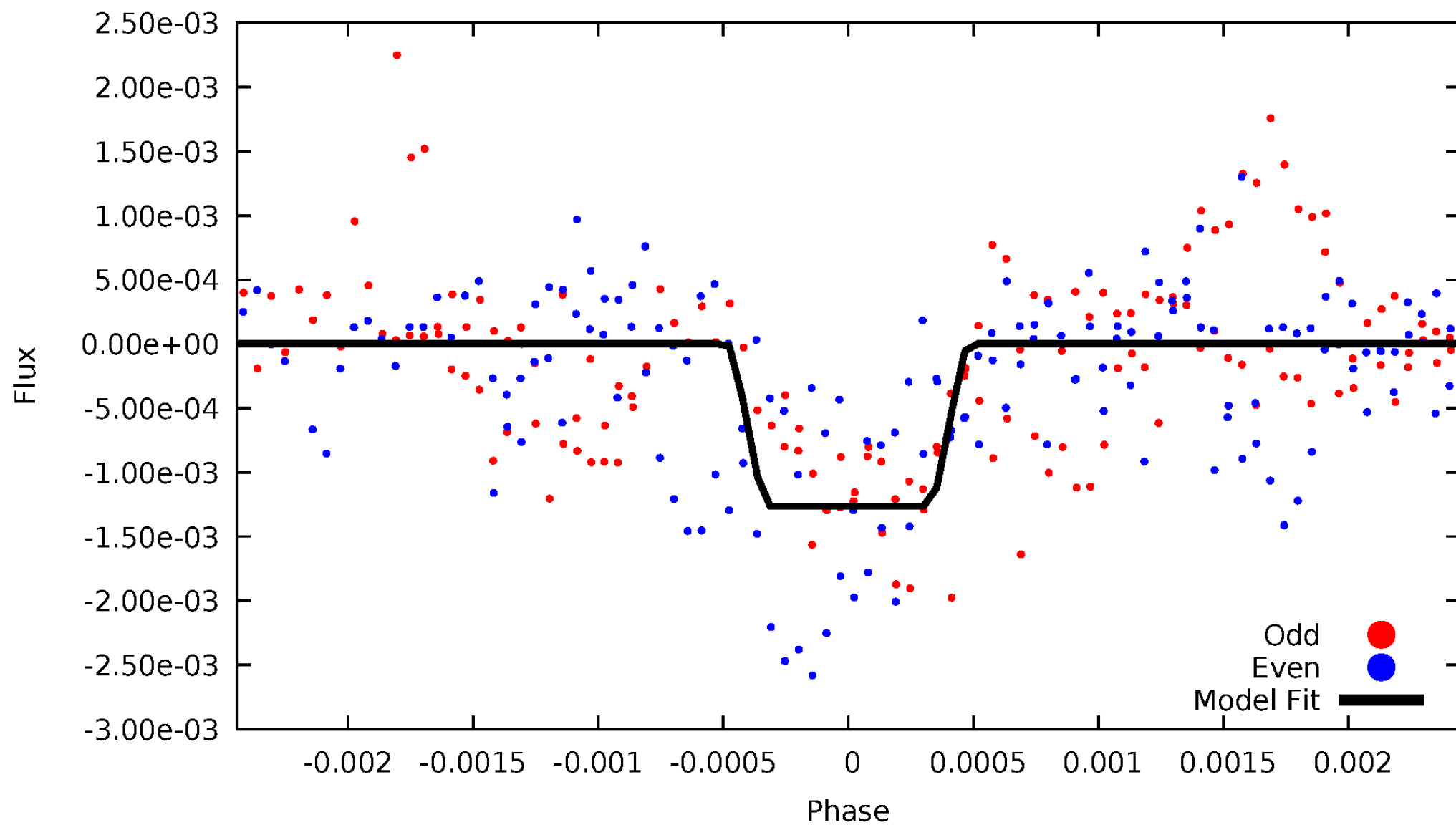
DV Odd/Even

TCE 008439323-02



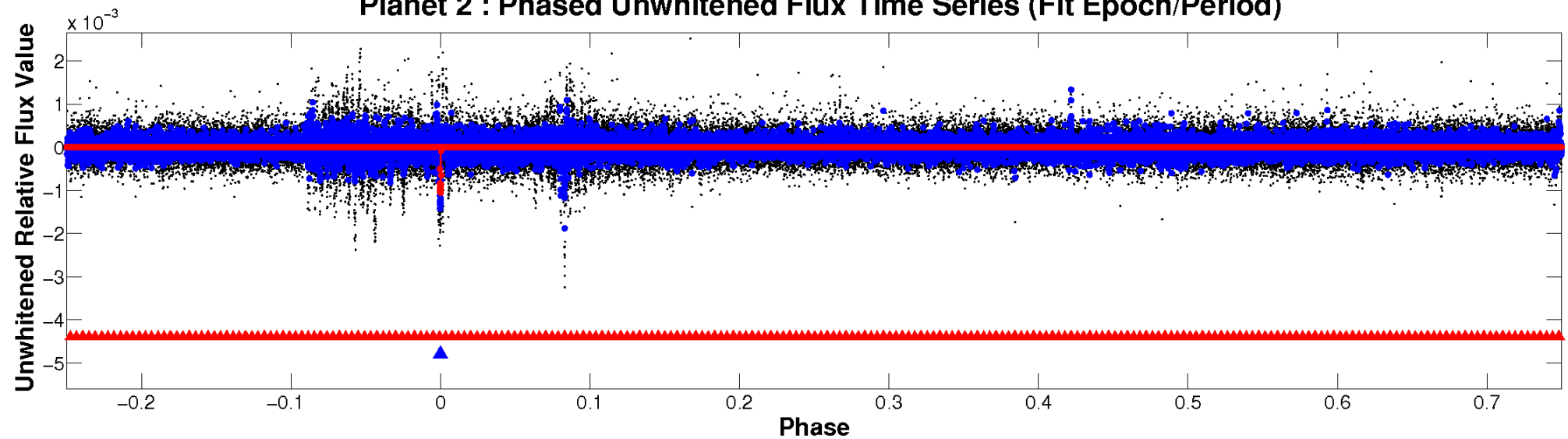
ALT Odd/Even

TCE 008439323-02

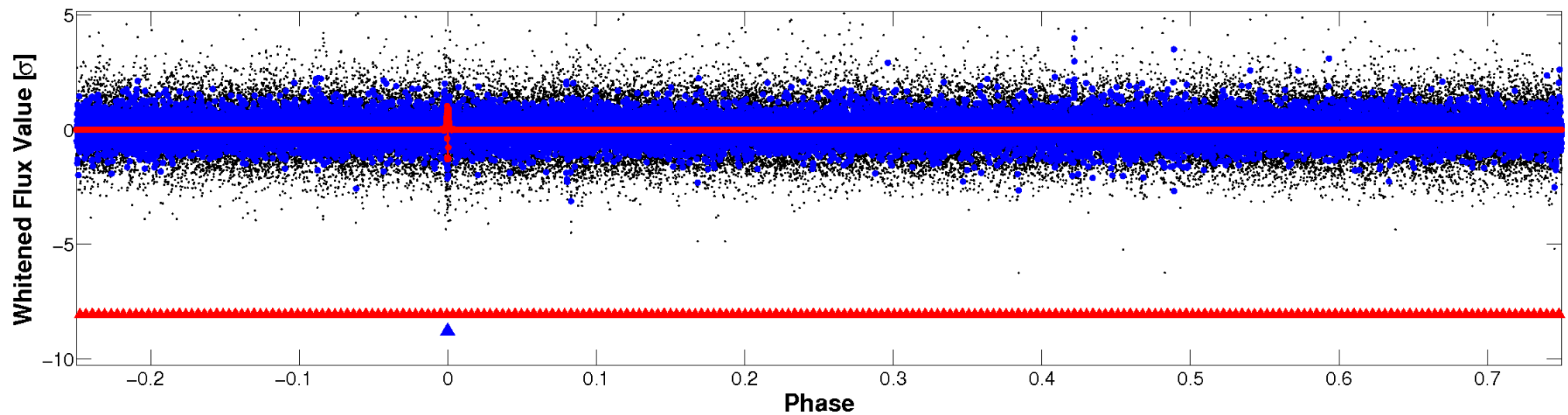


Non-Whitened Vs. Whitened Light Curve

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

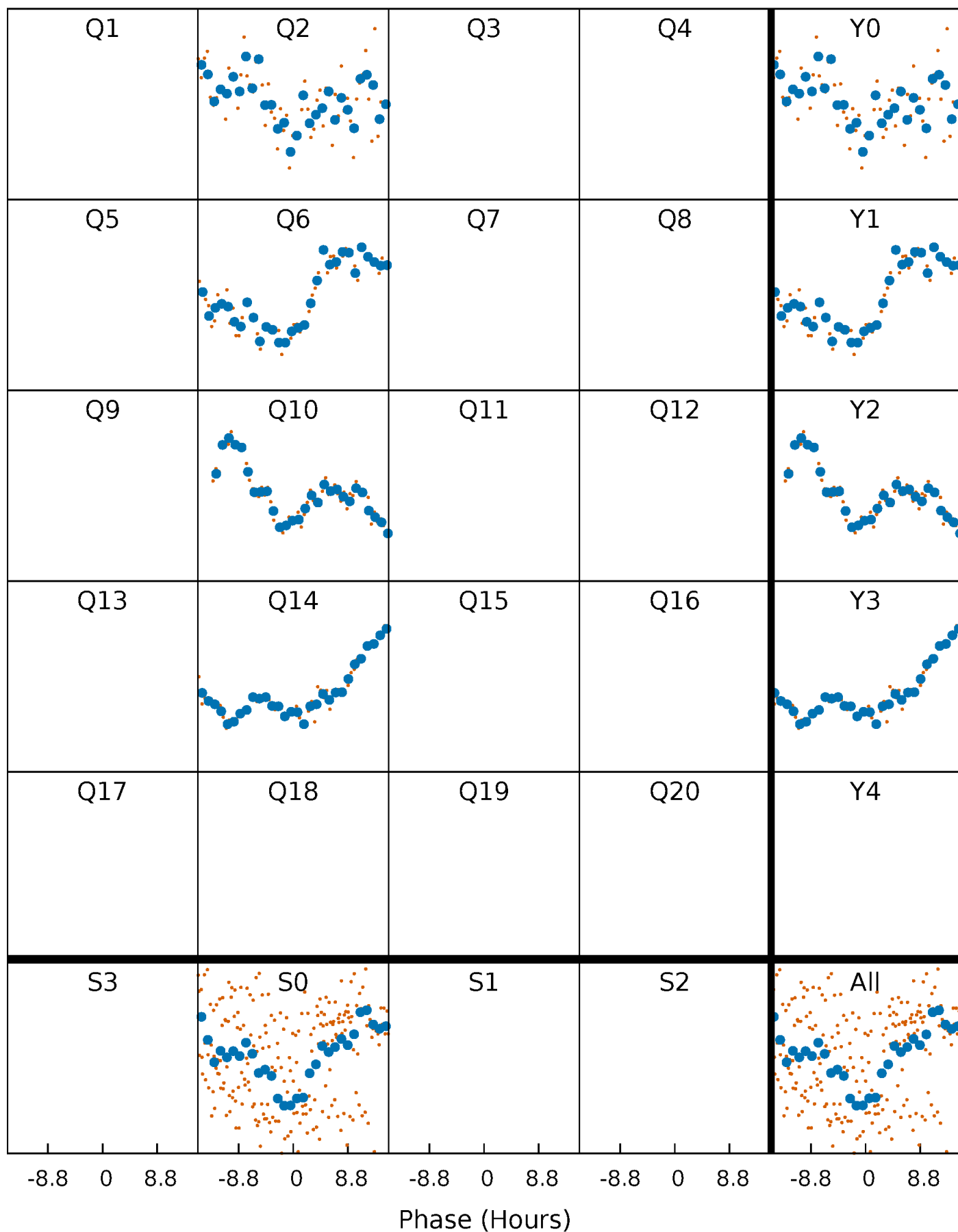


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



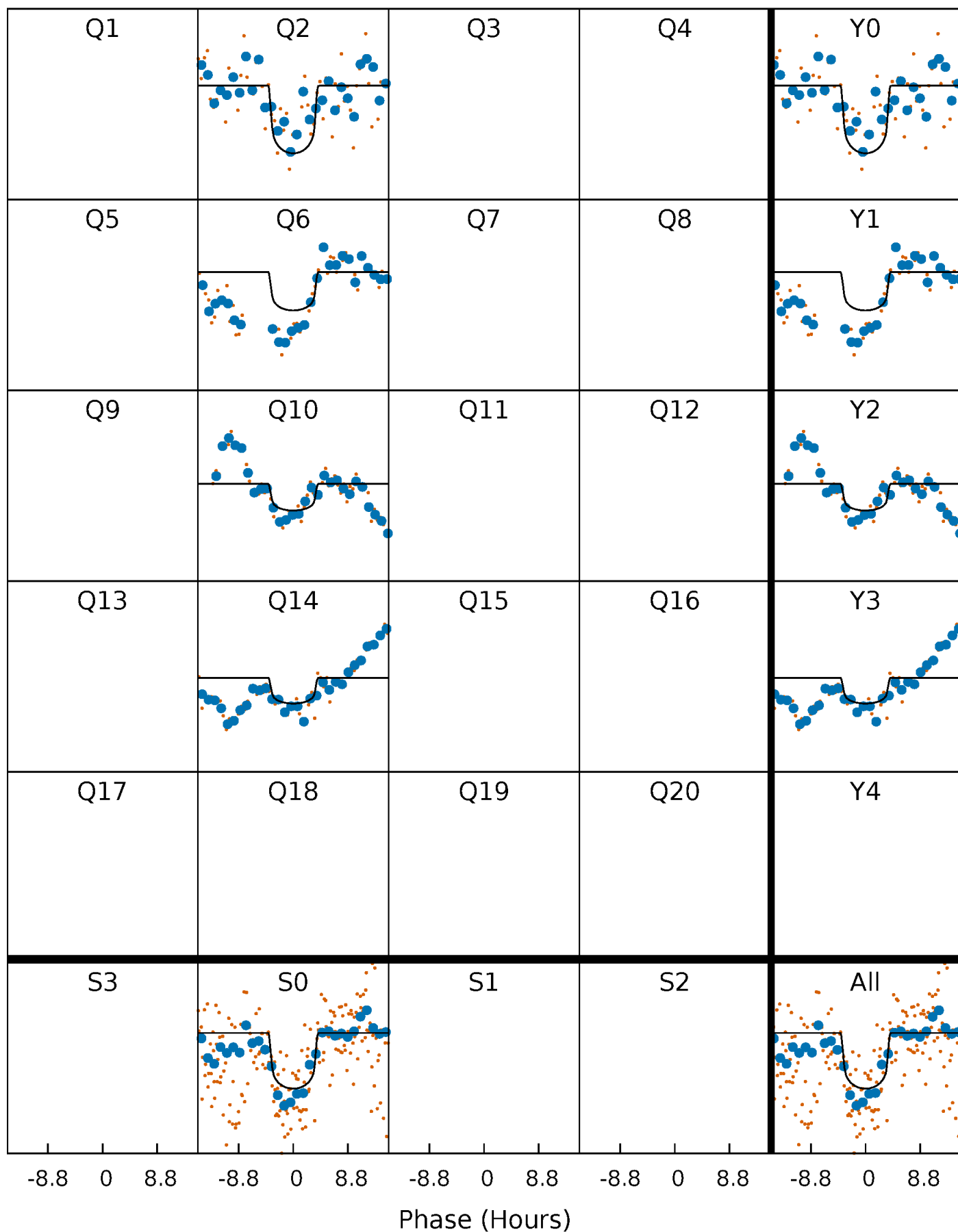
PDC Quarter-Phased Transit Curves

TCE 008439323-02 P=368.593287 Days $T_0=201.155959$ (BKJD)



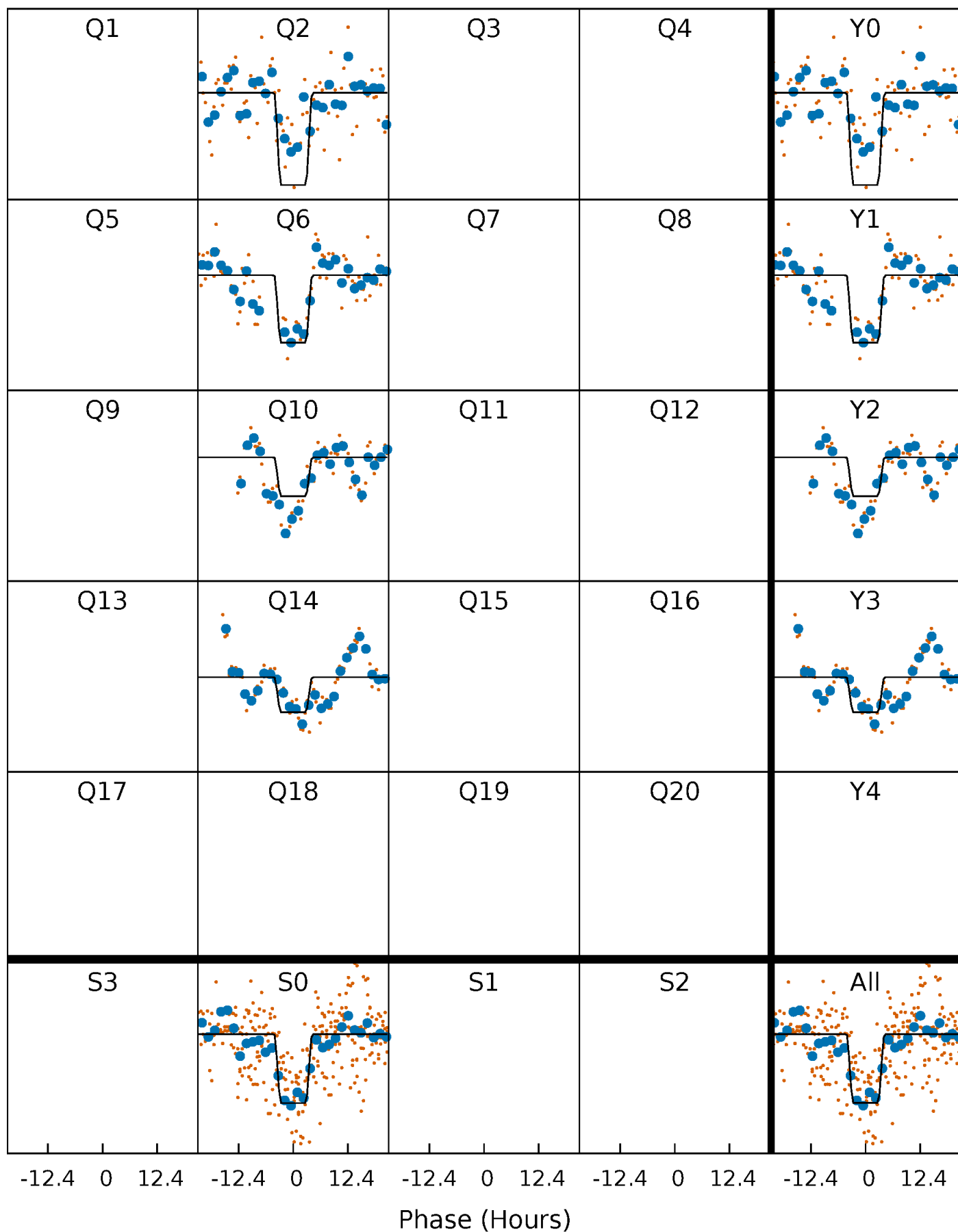
DV Quarter-Phased Transit Curves

TCE 008439323-02 P=368.593287 Days $T_0=201.155959$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

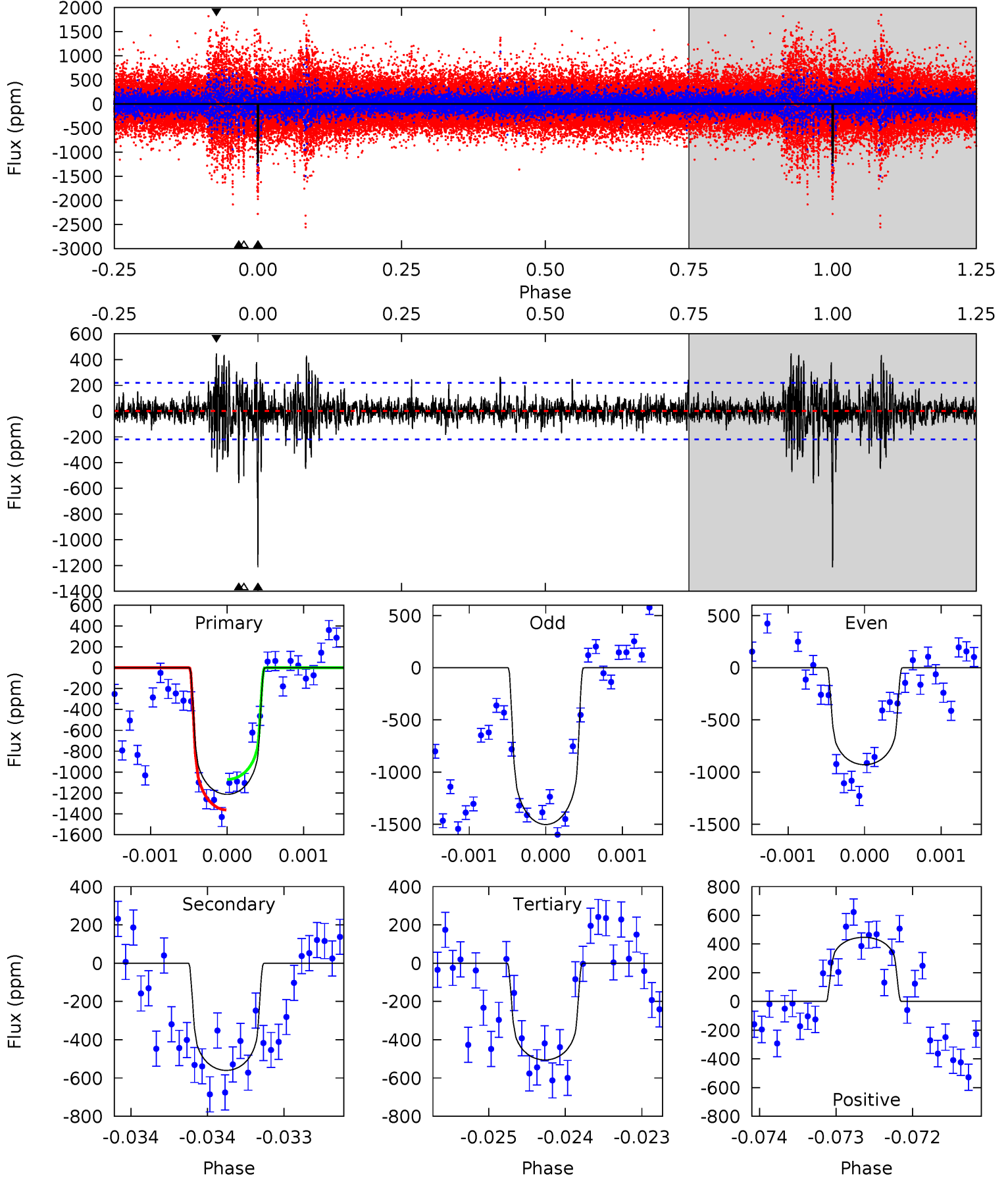
TCE 008439323-02 P=368.600989 Days $T_0=201.124265$ (BKJD)



DV Model-Shift Uniqueness Test

008439323-02, P = 368.593287 Days, E = 201.155959 Days

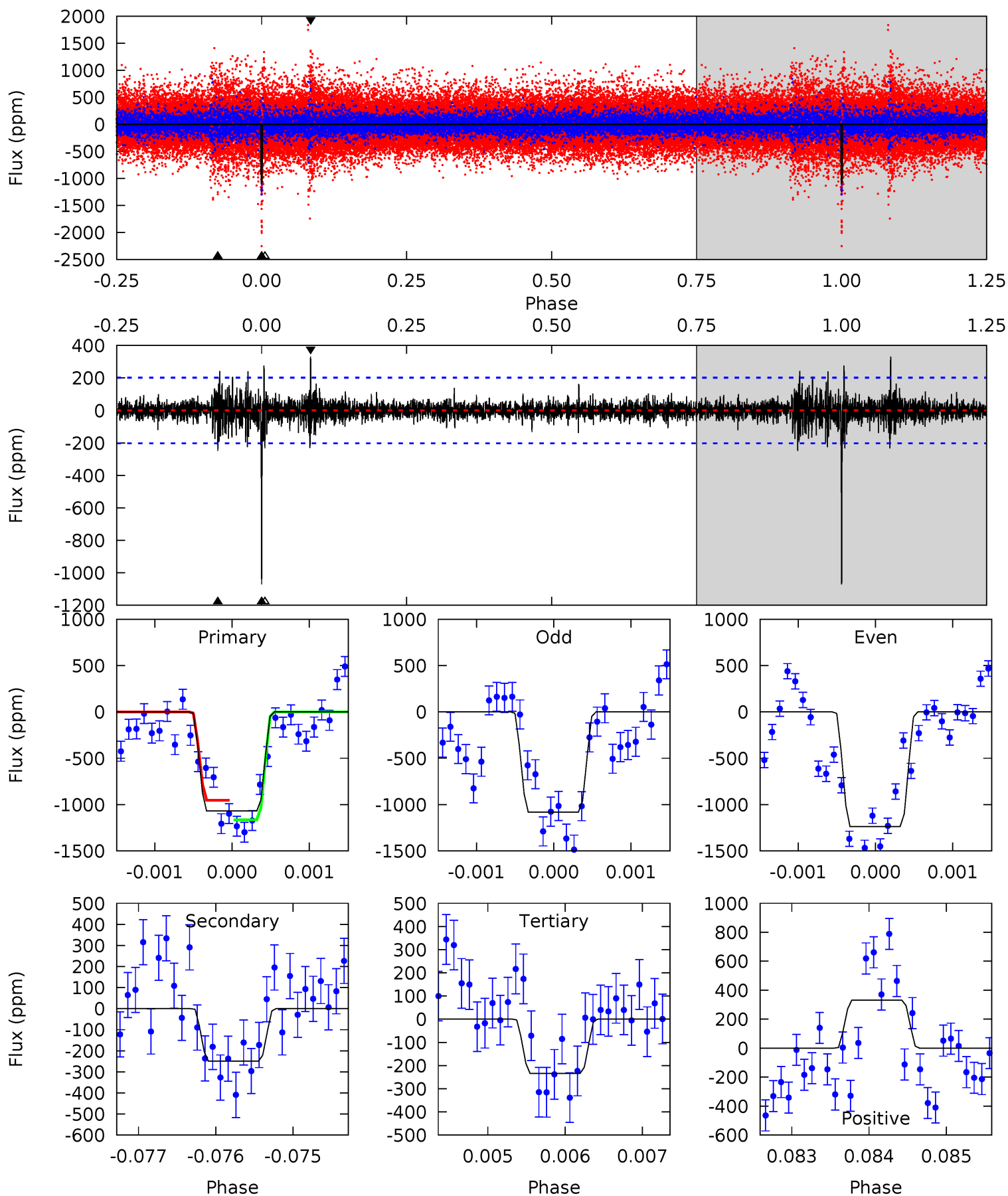
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.2	14.0	12.6	11.1	5.46	3.31	2.08	17.6	19.1	1.36	2.82	7.05	0.96	0.27	3.64



Alt Model-Shift Uniqueness Test

008439323-02, P = 368.600989 Days, E = 201.124265 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.9	6.73	6.30	8.92	5.46	3.31	1.12	22.6	19.9	0.43	-2.19	2.15	1.05	0.24	2.83



Stellar Parameters For KIC 008439323

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5834^{+157}_{-174}	$4.566^{+0.042}_{-0.168}$	$-0.500^{+0.300}_{-0.300}$	$0.797^{+0.213}_{-0.071}$	$0.852^{+0.095}_{-0.086}$	$2.373^{+0.526}_{-1.069}$
	+3%/-3%	+1%/-4%	+60%/-60%	+27%/-9%	+11%/-10%	+22%/-45%
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 008439323-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-560 ± 40	$2.87^{+1.30}_{-1.20}$	335^{+20}_{-14}	5131^{+1445}_{-749}	34111^{+64858}_{-18269}
Alt.	-249 ± 37	$3.20^{+1.31}_{-1.14}$	335^{+19}_{-14}	4153^{+840}_{-446}	11941^{+18149}_{-5846}

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 $A_{obs} \gg 1.0$

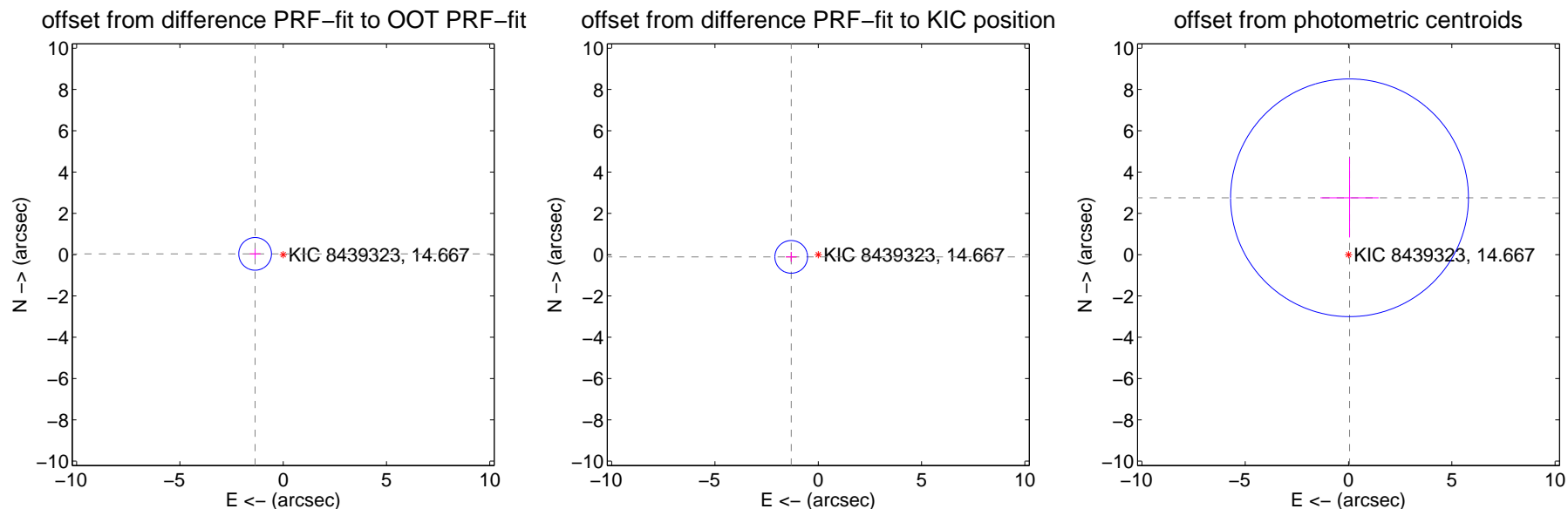
DV Centroid Data

Supplemental centroid analysis for 008439323-02. Kepler magnitude: 14.67. Transit SNR 10.16

There are 0 quarters with good PRF difference image offsets

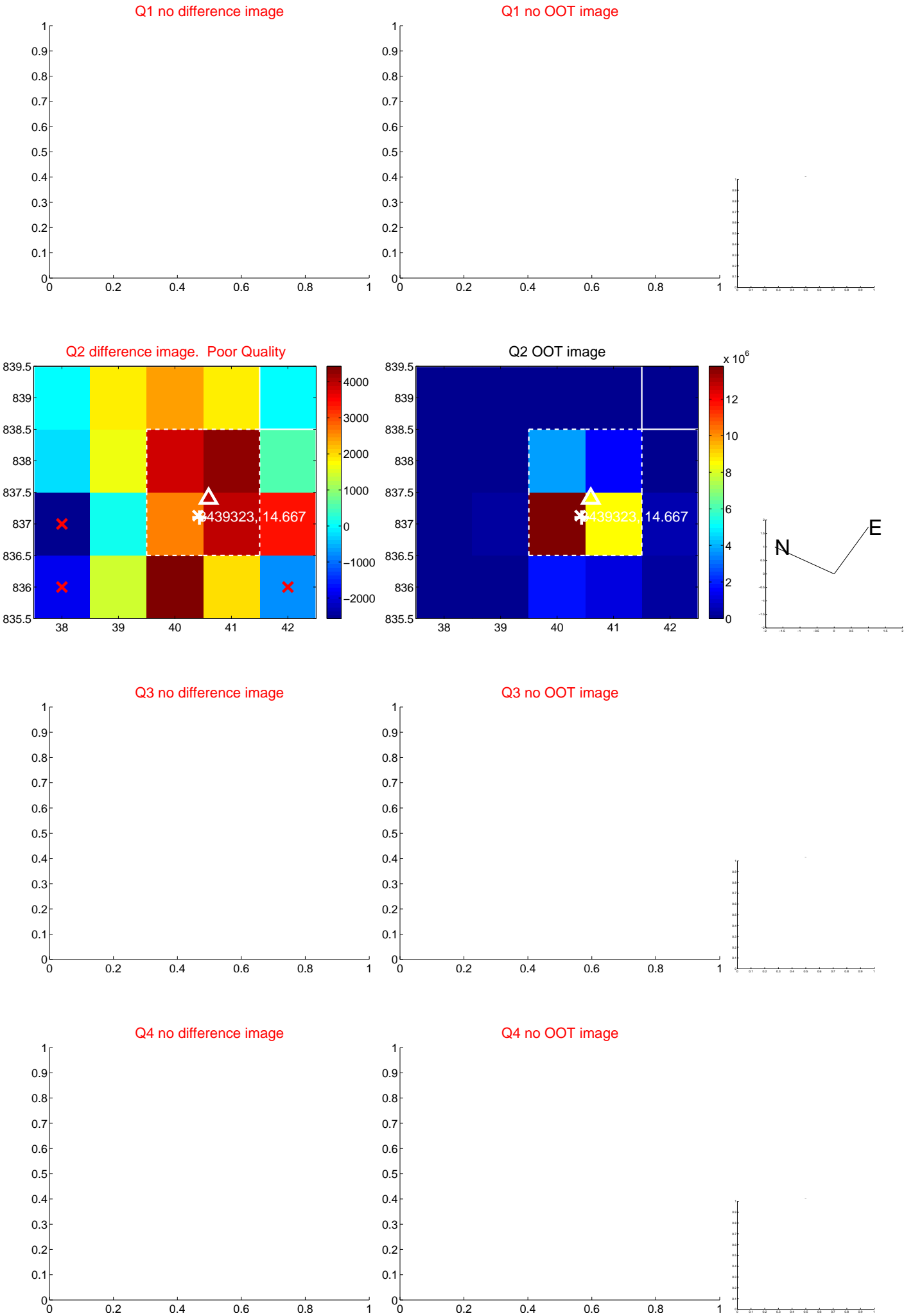
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.360 ± 0.264	5.15	1.359 ± 0.264	0.038 ± 0.239
PRF-fit source offset from KIC position	1.313 ± 0.264	4.98	1.309 ± 0.264	-0.108 ± 0.239
photometric centroid source offset	2.75 ± 1.92	1.44	-0.05 ± 1.41	2.75 ± 1.92

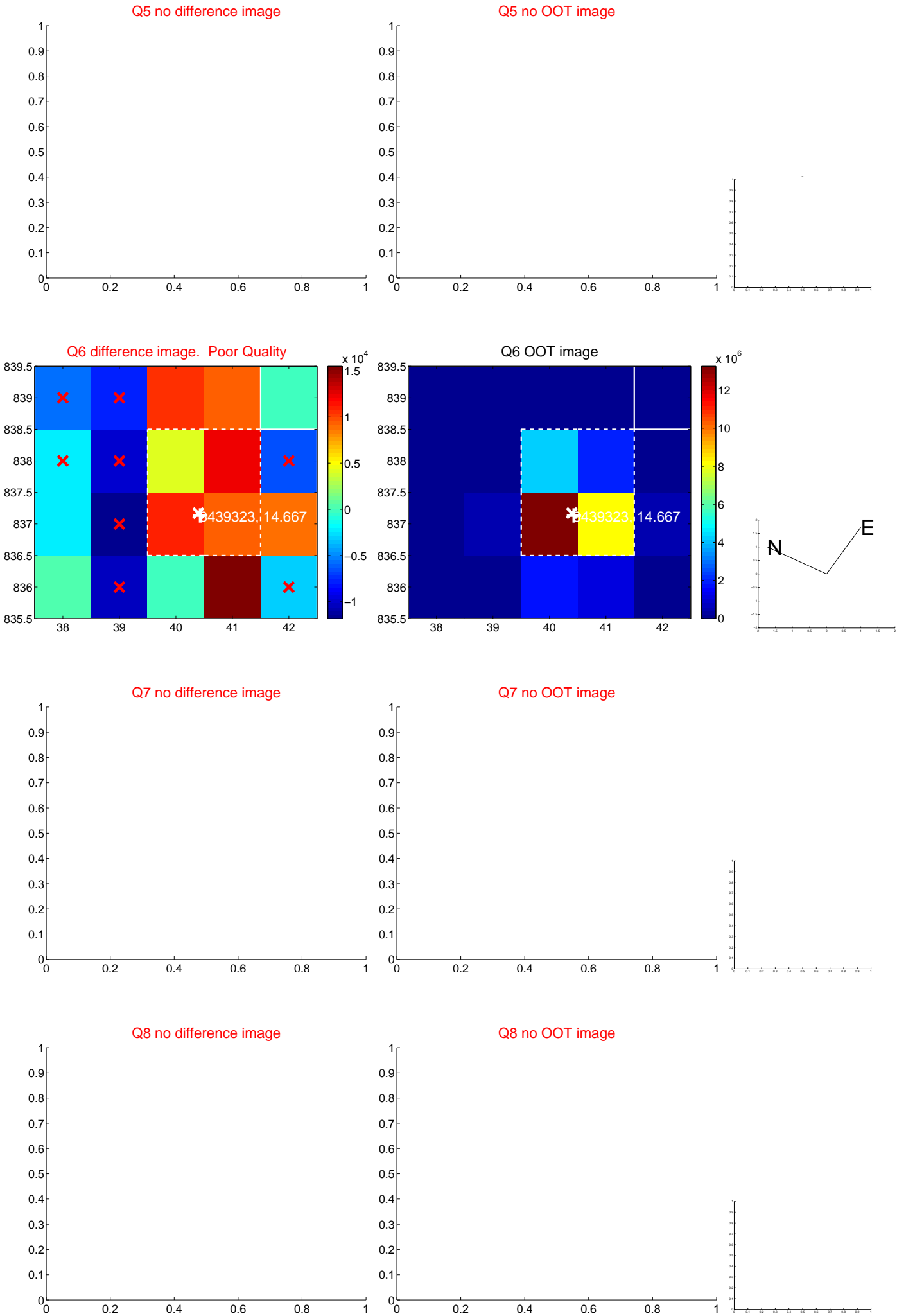


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



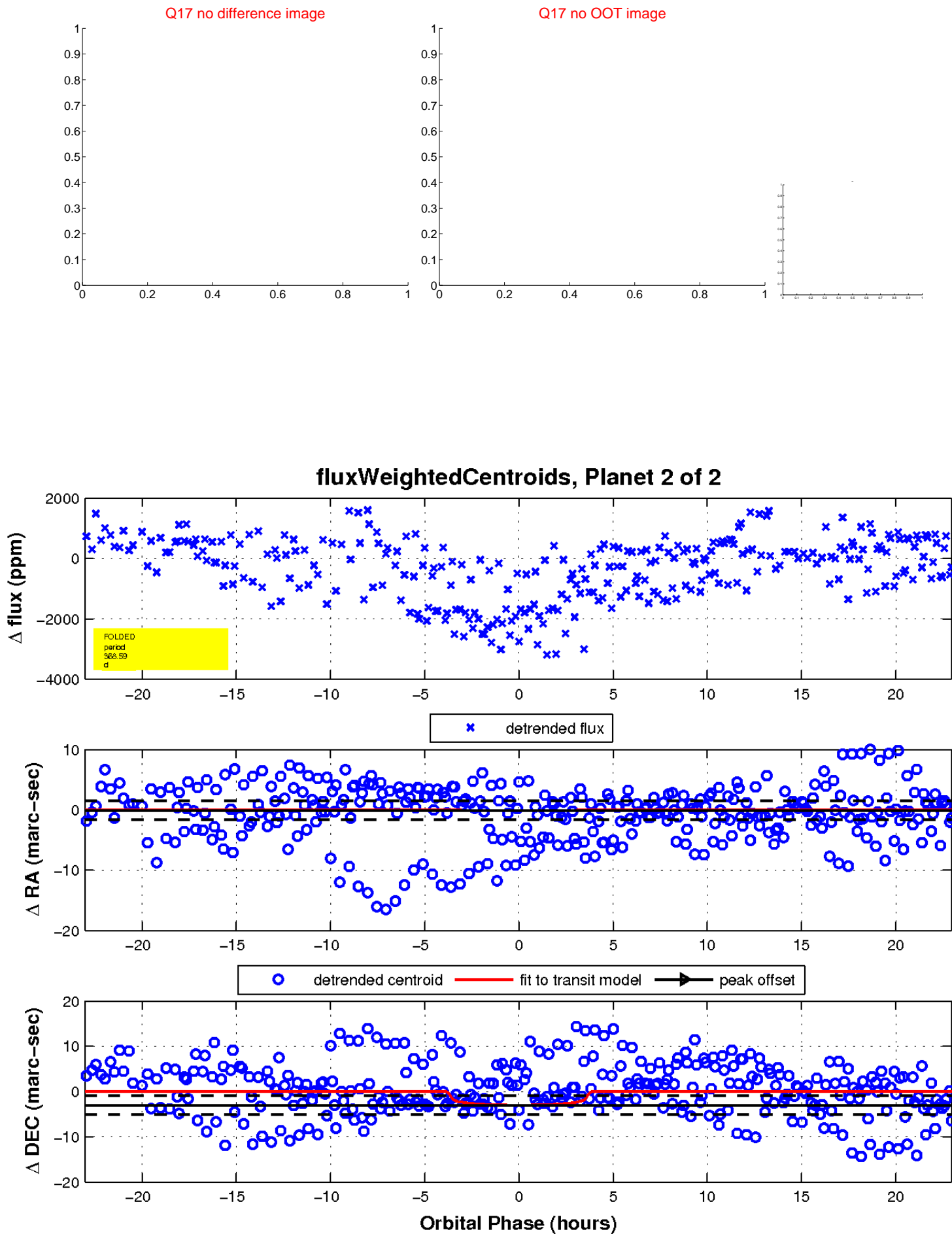
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

