

KIC 010464666

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})
010464666-01	OBS	3578.01	131.736282	194.583530	58107.2	5.295	1395.6	1269.7	1.67	5102	57.54	6.91
010464666-02	OBS	No	131.736476	160.413784	804.5	3.939	21.5	23.5	1.67	5102	6.80	6.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010464666-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—DEEP_V_SHAPED—HAS_SEC_TCE
010464666-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

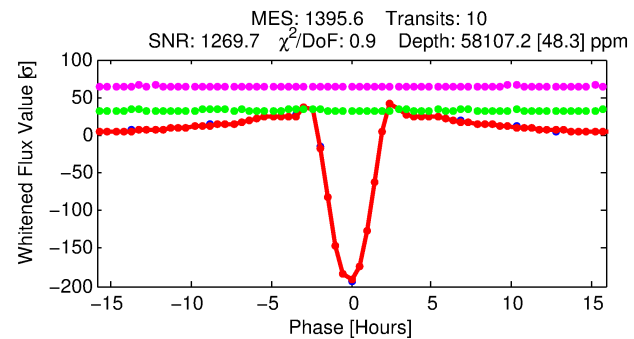
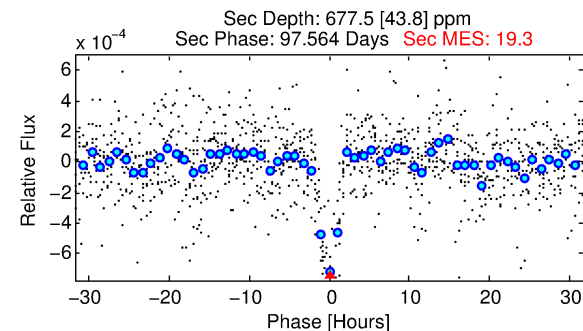
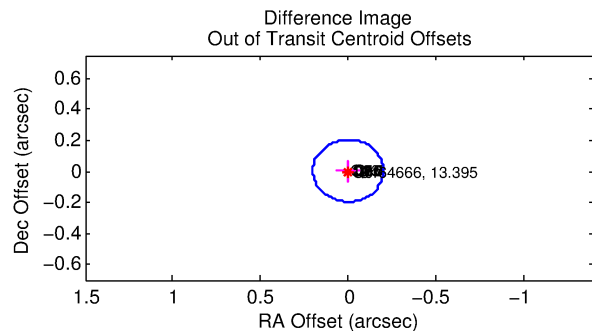
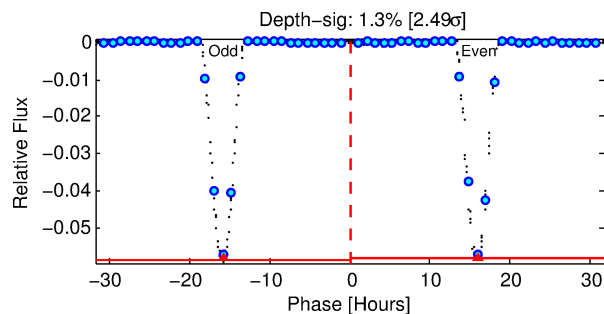
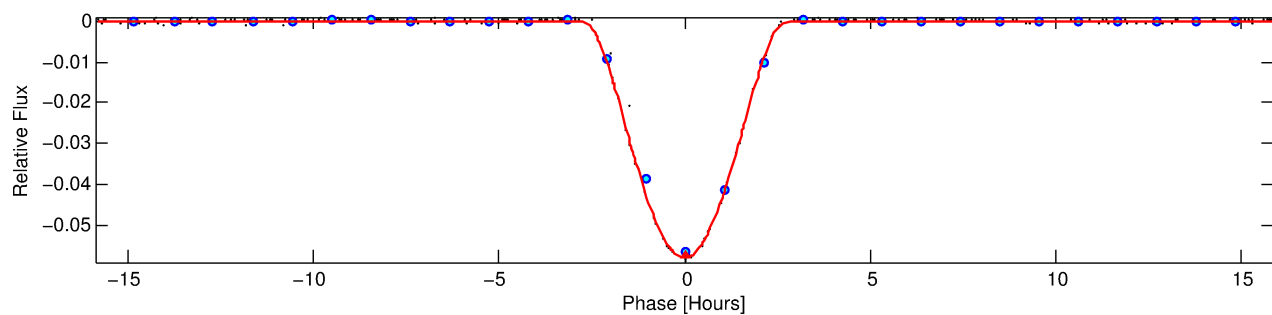
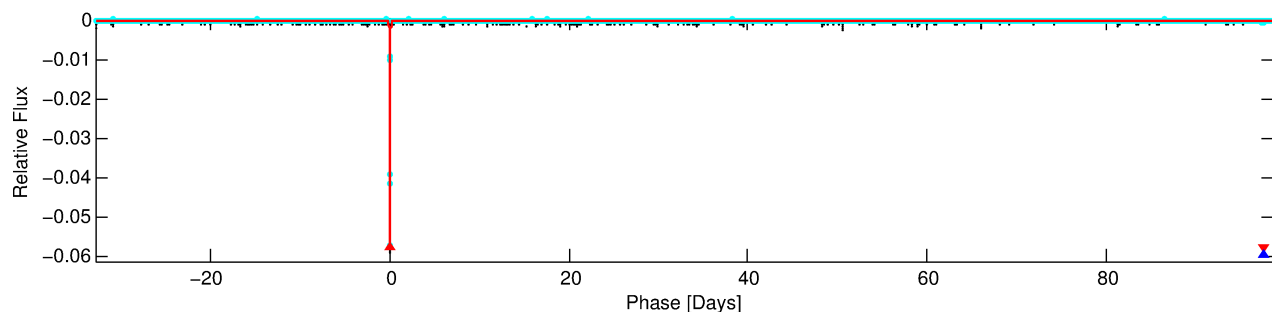
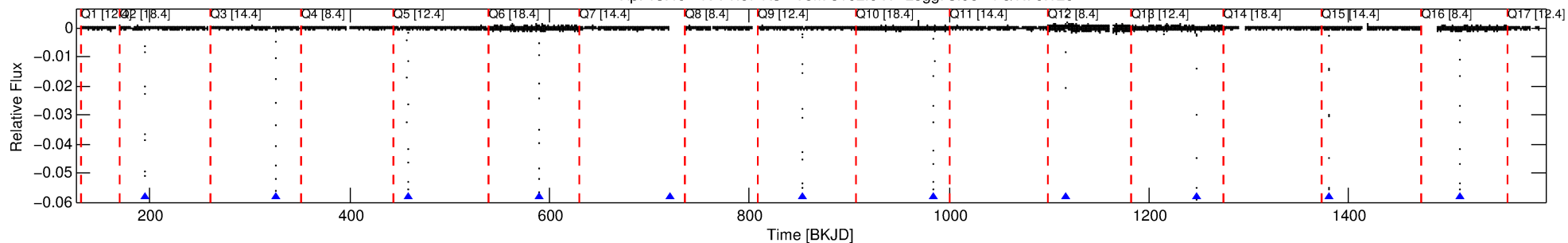
Ephemeris Match Information For 010464666-01

No Significant Match Found

DV One-Page Summary

KIC: 10464666 Candidate: 1 of 2 Period: 131.736 d
KOI: K03578.01 Corr: 1.000

Kp: 13.40 R*: 1.67 Rs Teff: 5102.0 K Logg: 3.96 Fe/H: 0.120



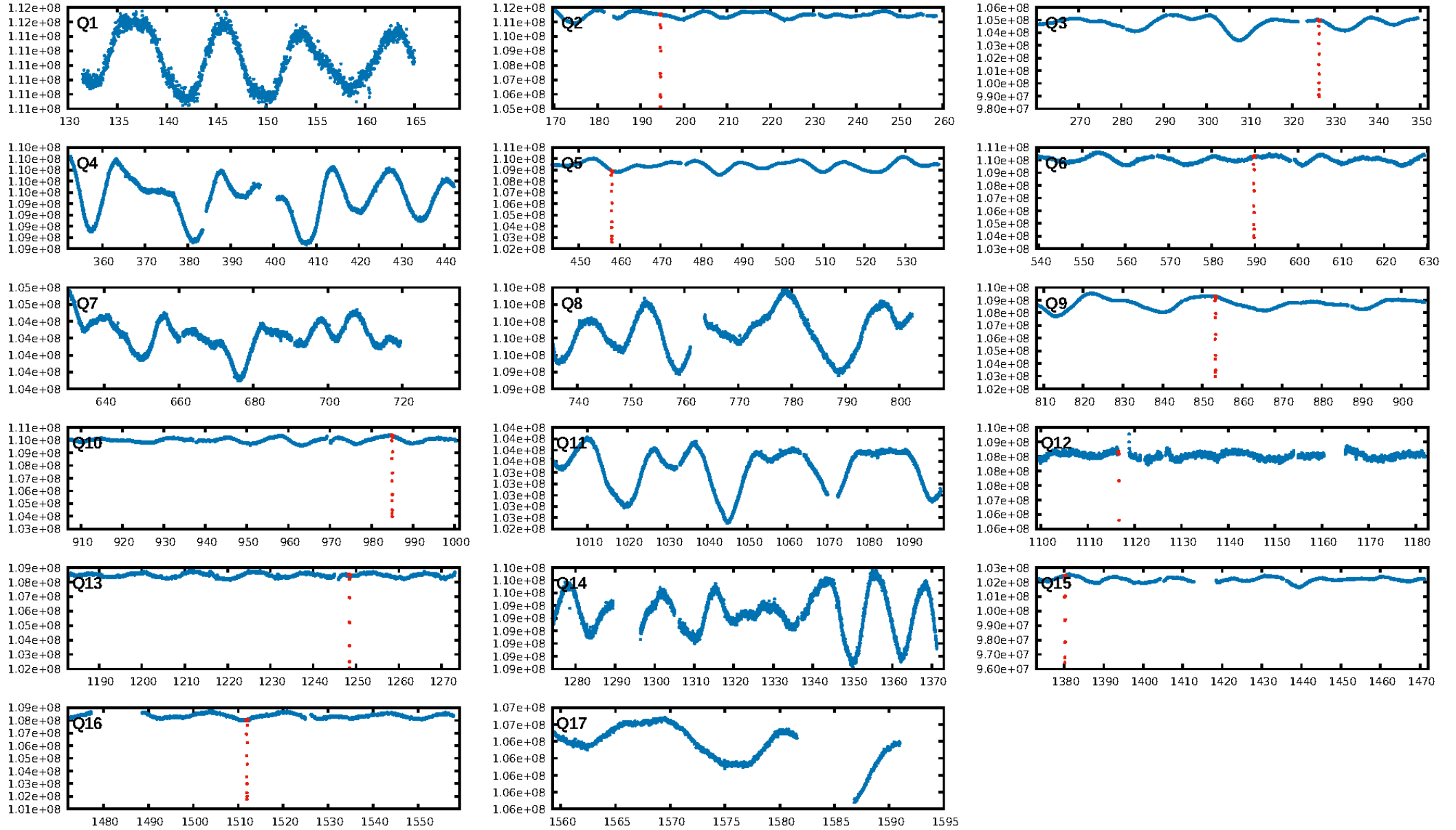
DV Fit Results:

Period = 131.73628 [0.00001] d
Epoch = 194.5835 [0.0001] BKJD
Rp/R* = 0.3160 [0.0069]
a/R* = 182.31 [0.29]
b = 0.90 [0.01]
Seff = 6.91 [6.93]
Teq = 413 [104] K
Rp = 57.54 [35.16] Re
a = 0.4948 [0.3016] AU
Ag = 27.56 [27.49] [0.97σ]
Teffp = 1464 [56] K [8.91σ]

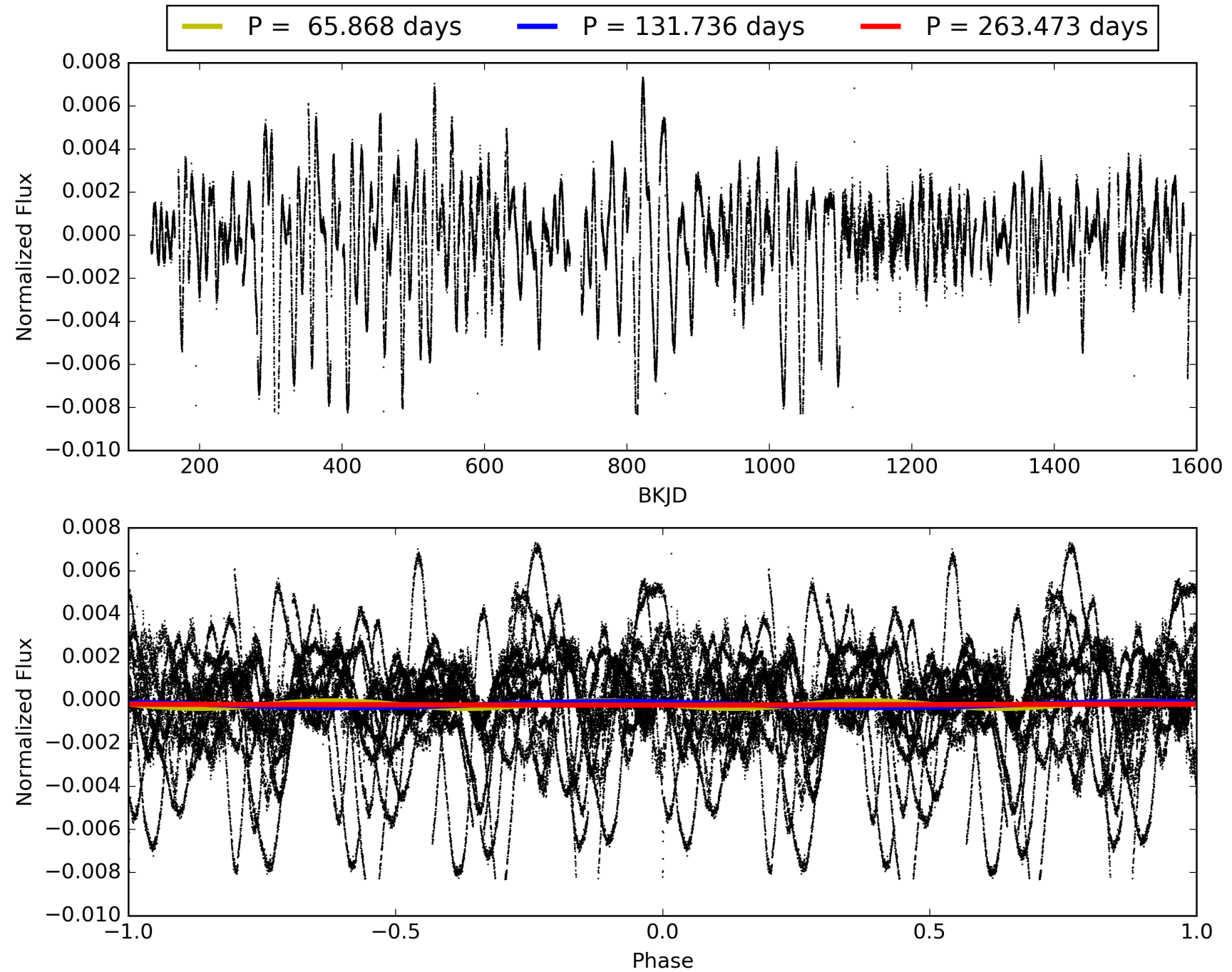
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 4.898
Centroid-sig: 0.0%
Centroid-so: 0.177 arcsec [36.22σ]
OotOffset-rm: 0.005 arcsec [0.07σ]
OotOffset-st: 3/2/1/3 [9]
KicOffset-rm: 0.297 arcsec [4.08σ]
KicOffset-st: 3/2/1/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [9/9]

TCE 010464666-01, PDC Light Curves

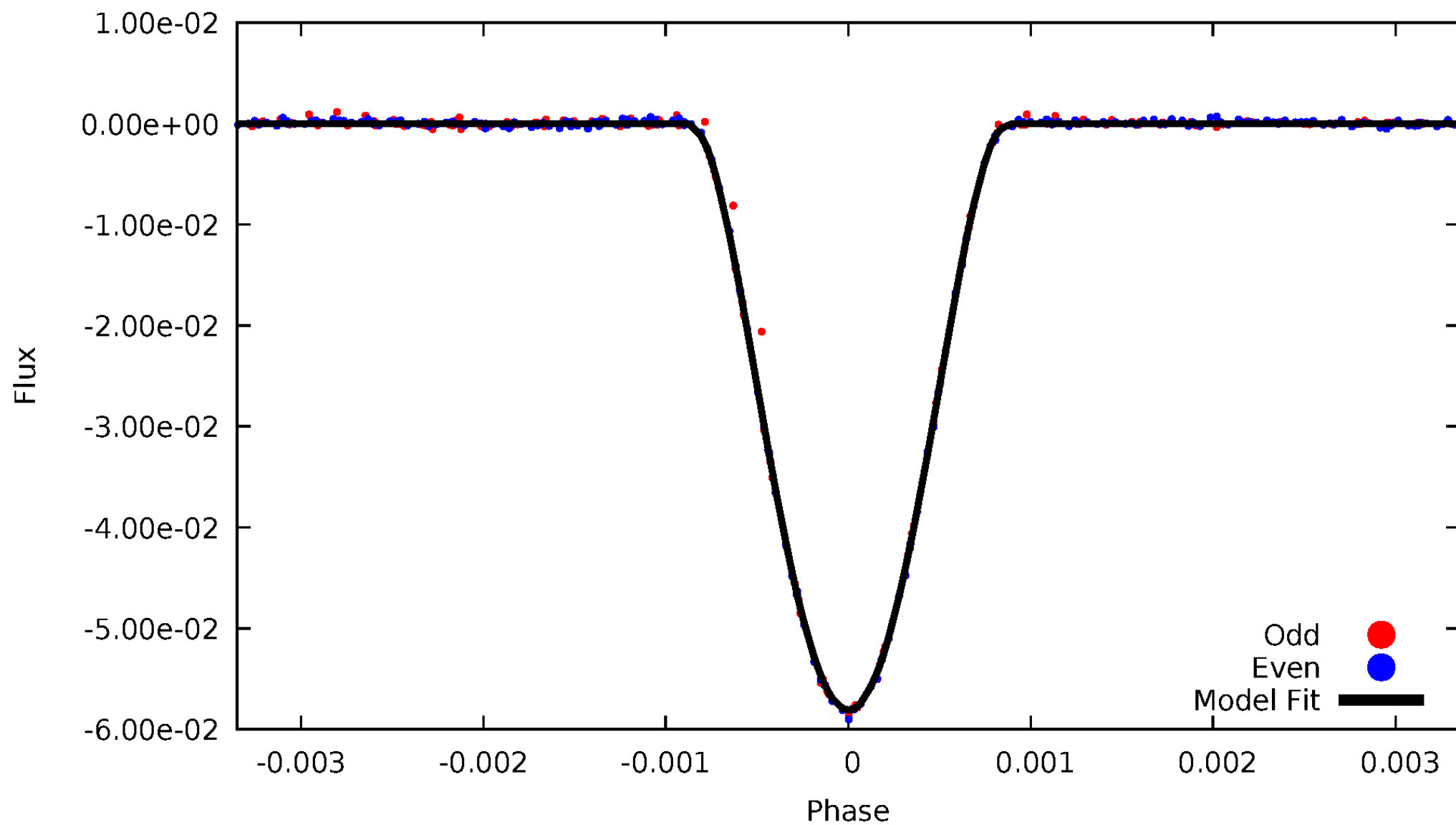


TCE 010464666-01



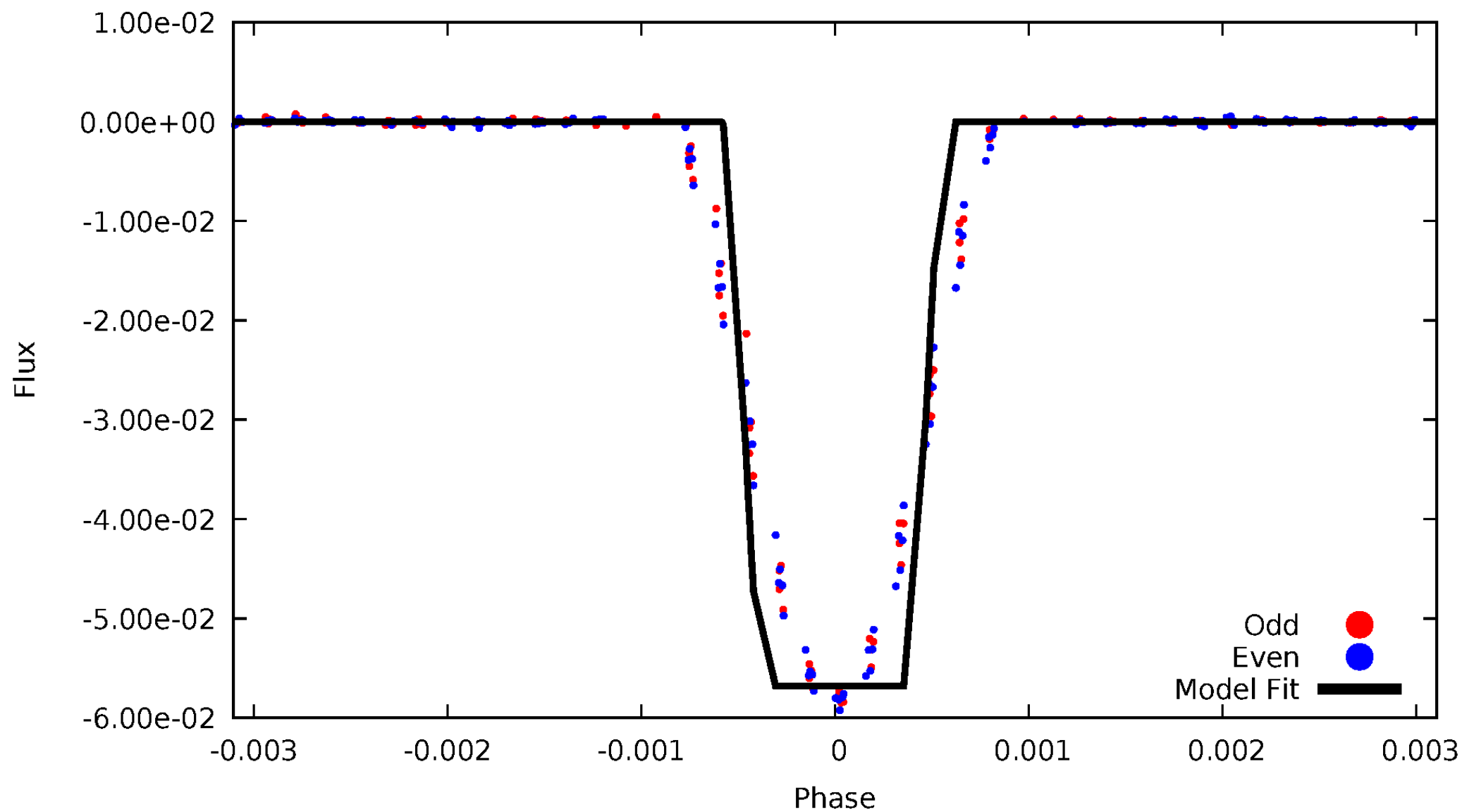
DV Odd/Even

TCE 010464666-01



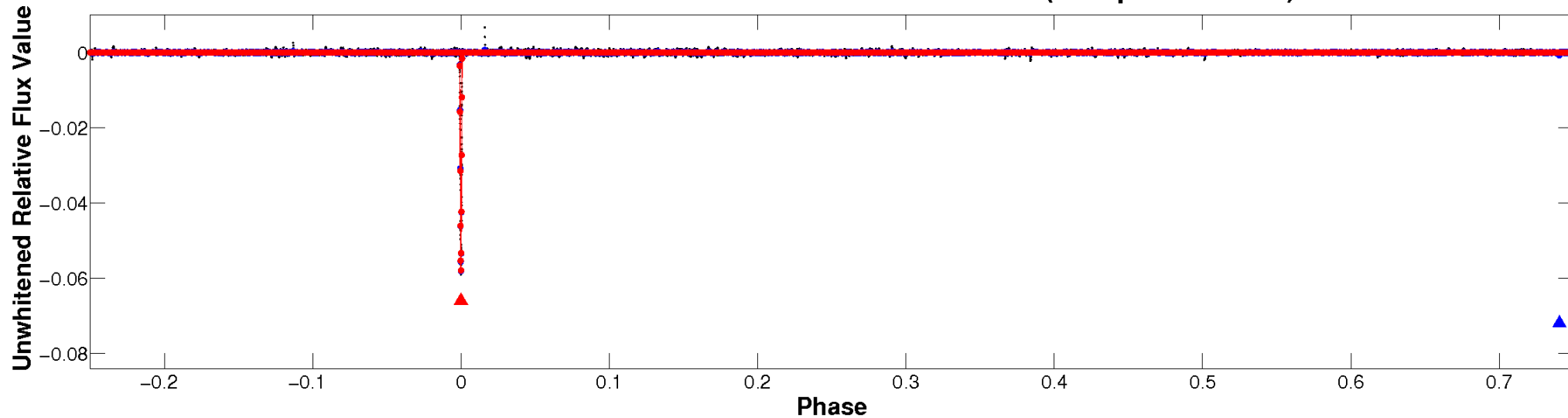
ALT Odd/Even

TCE 010464666-01

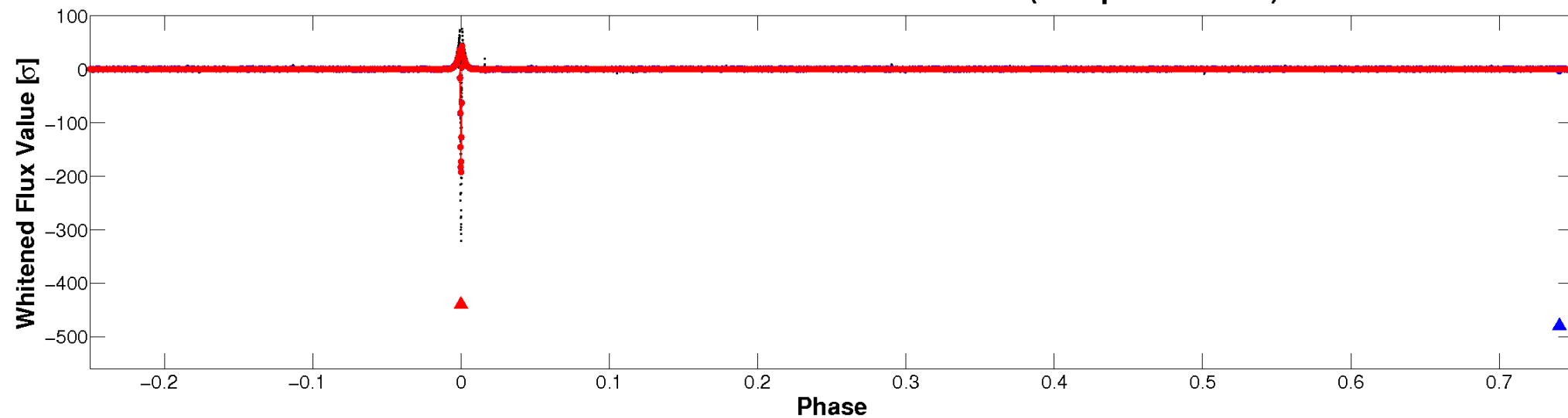


Non-Whitened Vs. Whitened Light Curve

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

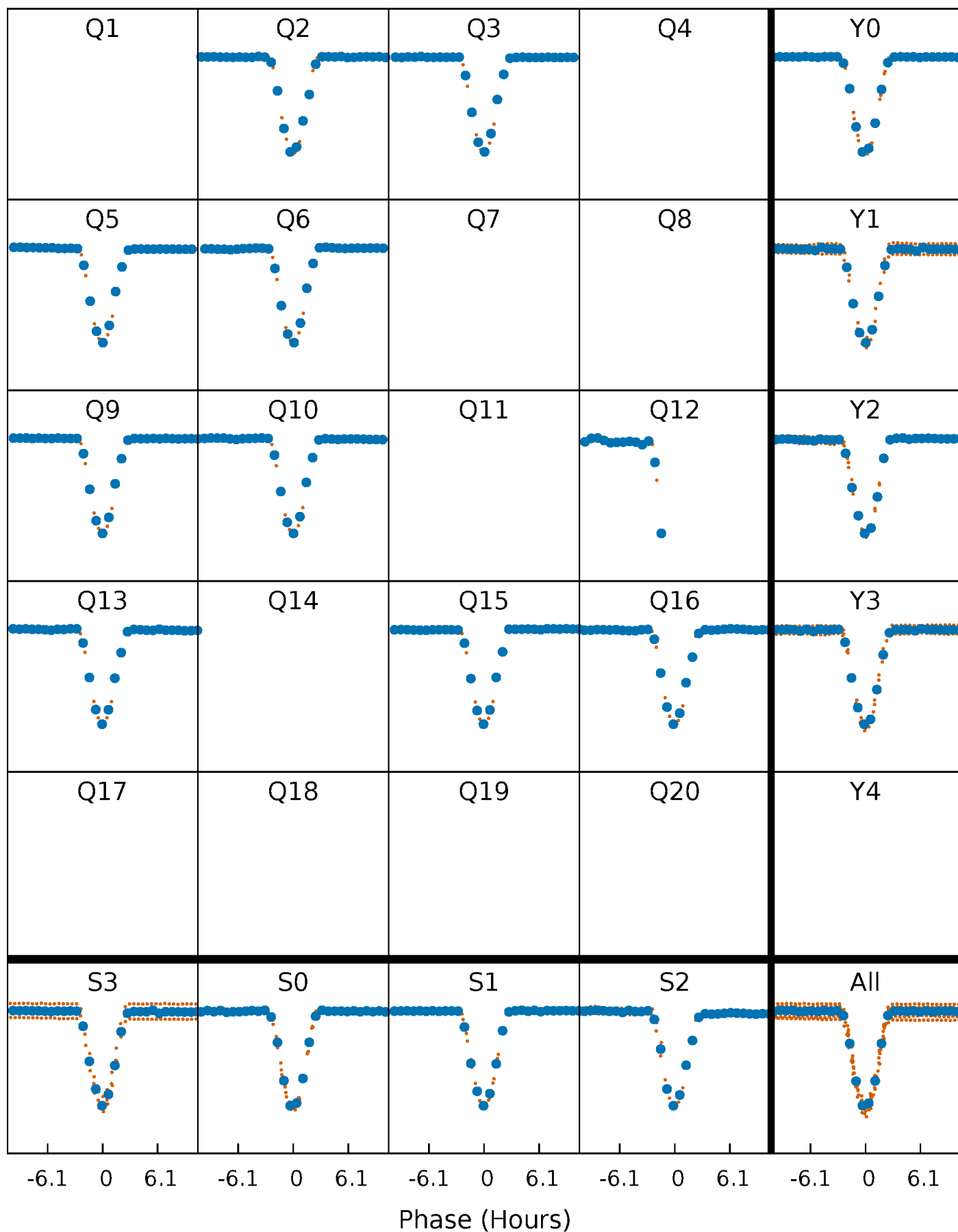


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



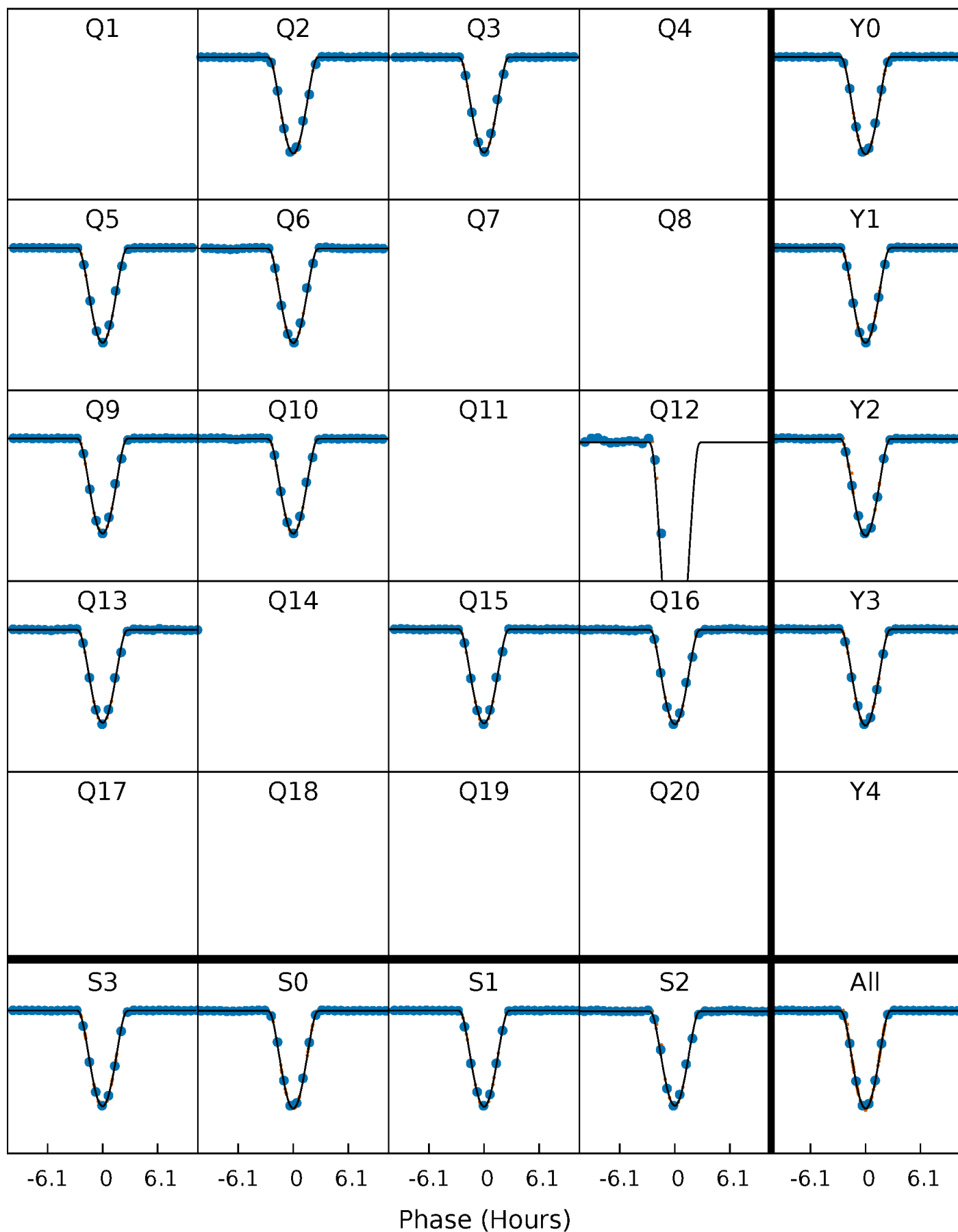
PDC Quarter-Phased Transit Curves

TCE 010464666-01 P=131.736282 Days $T_0=194.583529$ (BKJD)



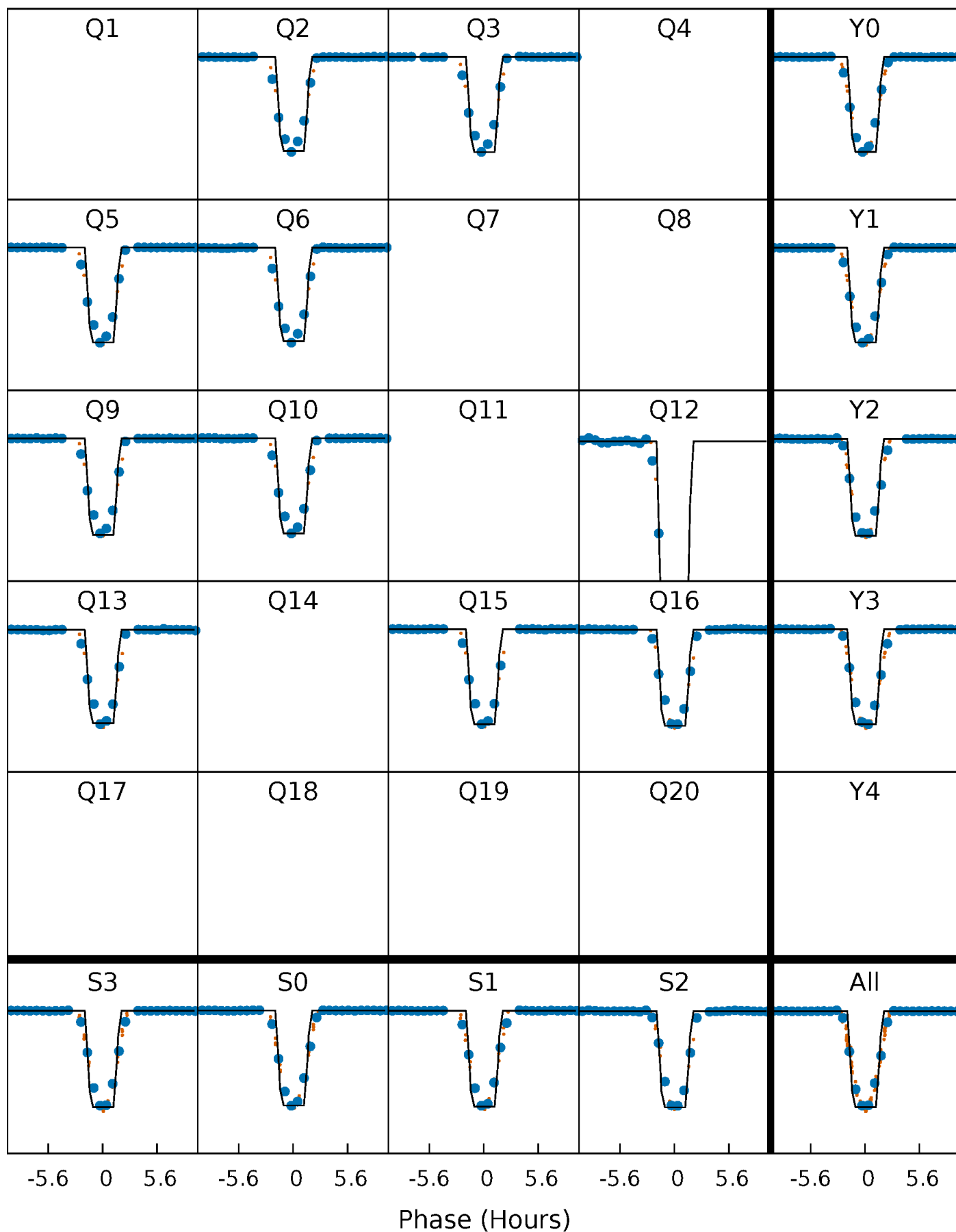
DV Quarter-Phased Transit Curves

TCE 010464666-01 P=131.736282 Days $T_0=194.583529$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

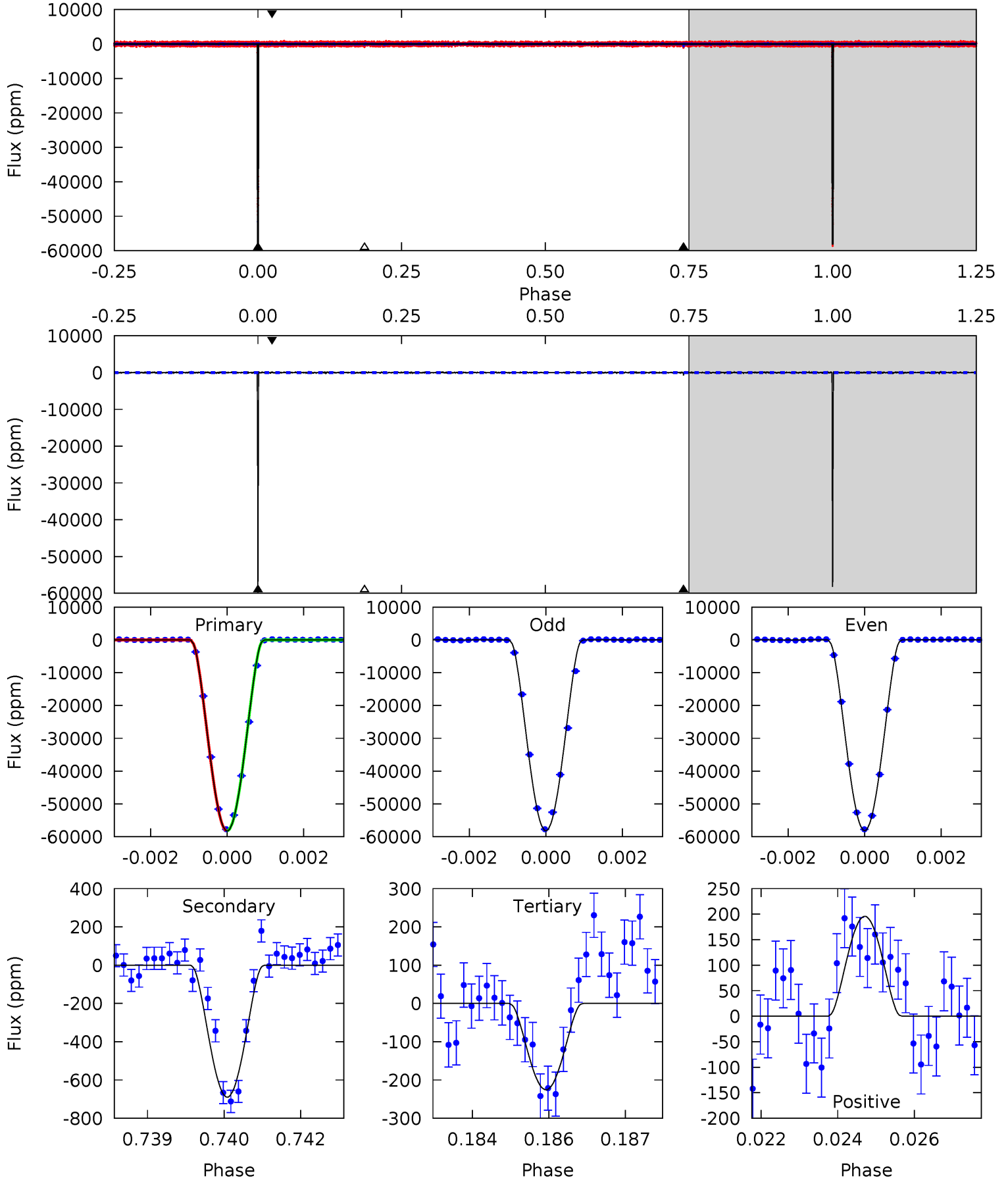
TCE 010464666-01 P=131.735530 Days $T_0=194.586445$ (BKJD)



DV Model-Shift Uniqueness Test

010464666-01, P = 131.736282 Days, E = 62.847247 Days

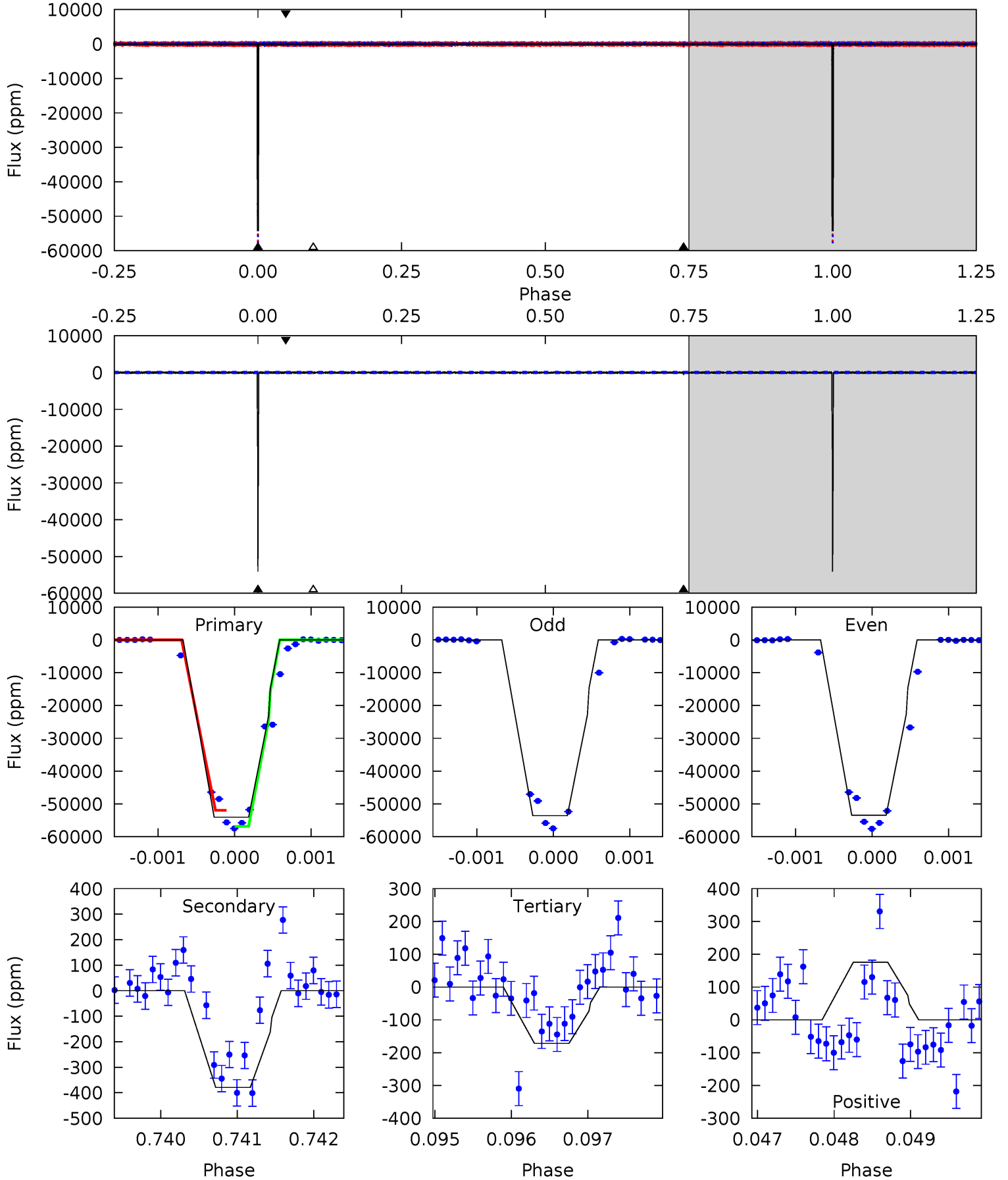
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2913	34.5	11.3	9.79	5.34	3.12	2.65	2902	2904	23.2	24.7	1.06	0.97	0.00	0.15



Alt Model-Shift Uniqueness Test

010464666-01, P = 131.735530 Days, E = 62.850915 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1537	10.8	4.88	4.98	5.44	3.27	2.34	1532	1532	5.89	5.79	2.42	1.00	0.00	0



Stellar Parameters For KIC 010464666

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5102^{+169}_{-138}	$3.962^{+0.591}_{-0.318}$	$0.120^{+0.250}_{-0.250}$	$1.669^{+1.019}_{-0.834}$	$0.932^{+0.175}_{-0.131}$	$0.282^{+2.178}_{-0.199}$
	+3%/-3%	+15%/-8%	+208%/-208%	+61%/-50%	+19%/-14%	+772%/-70%
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 010464666-01 / KOI 3578.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-690 ± 20	$55.44^{+18.27}_{-14.48}$	566^{+85}_{-84}	2355^{+42}_{-41}	31^{+25}_{-13}
Alt.	-379 ± 35	$42.02^{+13.85}_{-10.78}$	565^{+85}_{-78}	2347^{+48}_{-49}	30^{+24}_{-13}

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

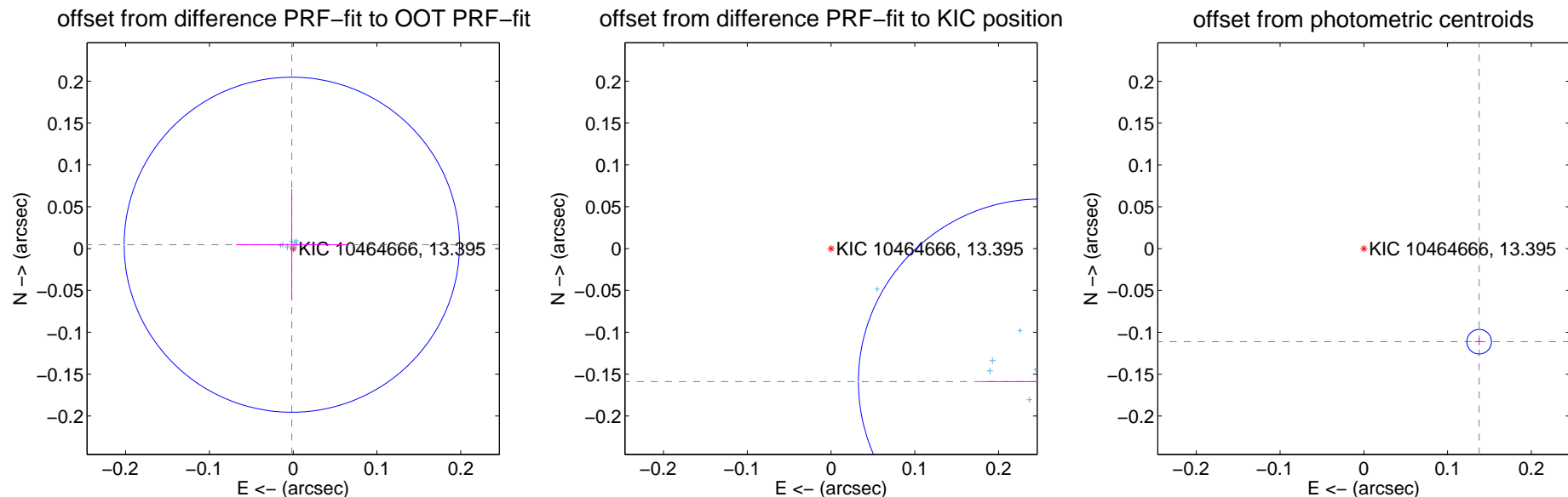
DV Centroid Data

Supplemental centroid analysis for 010464666-01. Kepler magnitude: 13.39. Transit SNR 1269.70

There are 9 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.005 ± 0.067	0.07	0.002 ± 0.067	0.005 ± 0.067
PRF-fit source offset from KIC position	0.297 ± 0.073	4.08	-0.251 ± 0.072	-0.159 ± 0.068
photometric centroid source offset	0.18 ± 0.00	36.22	-0.14 ± 0.01	-0.11 ± 0.00



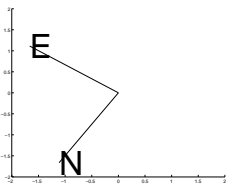
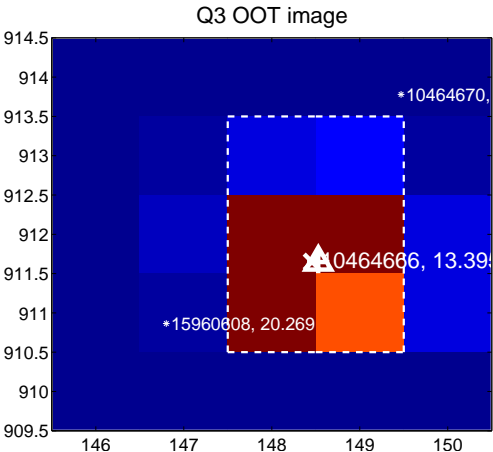
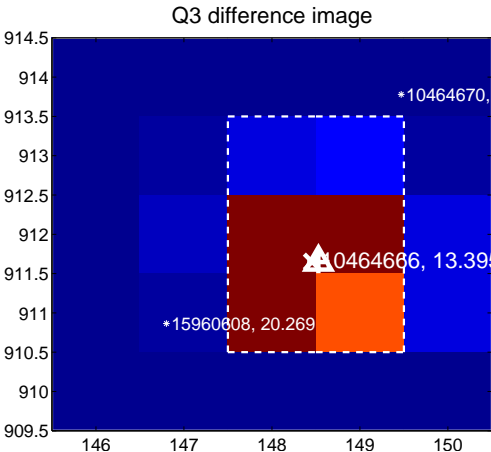
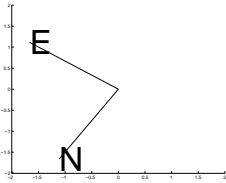
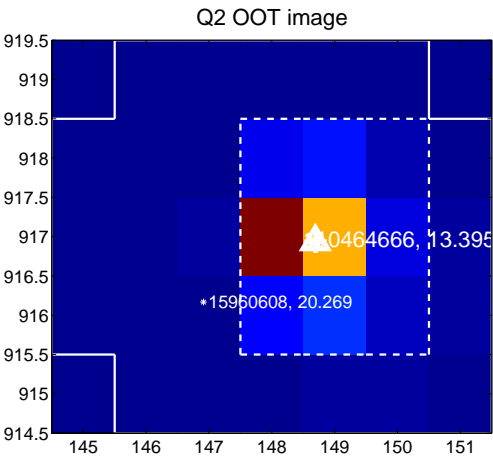
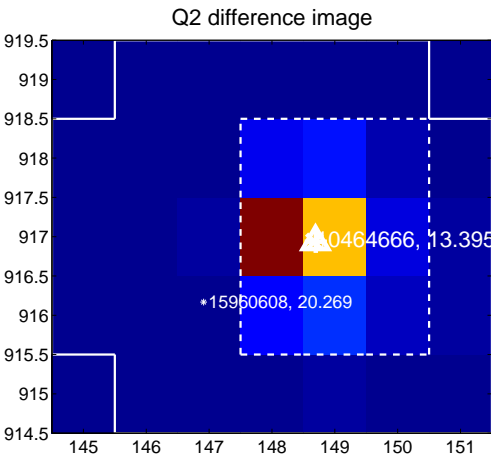
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

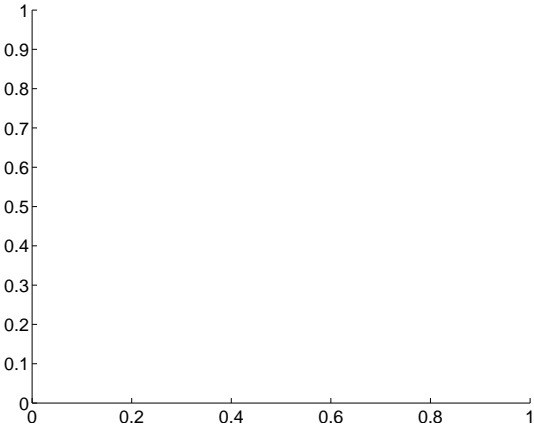
Q1 no difference image



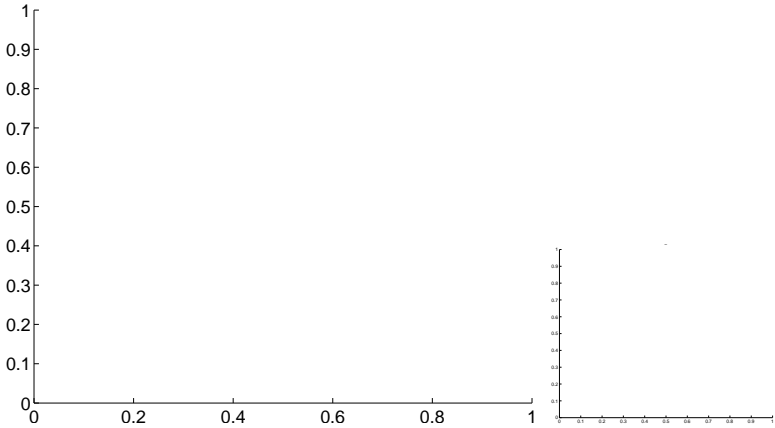
Q1 no OOT image



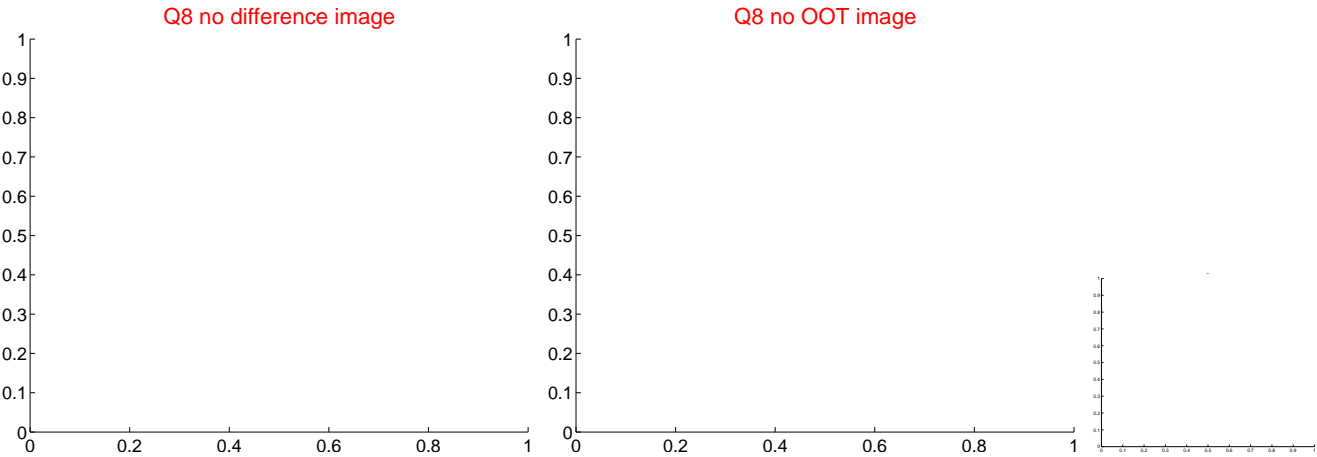
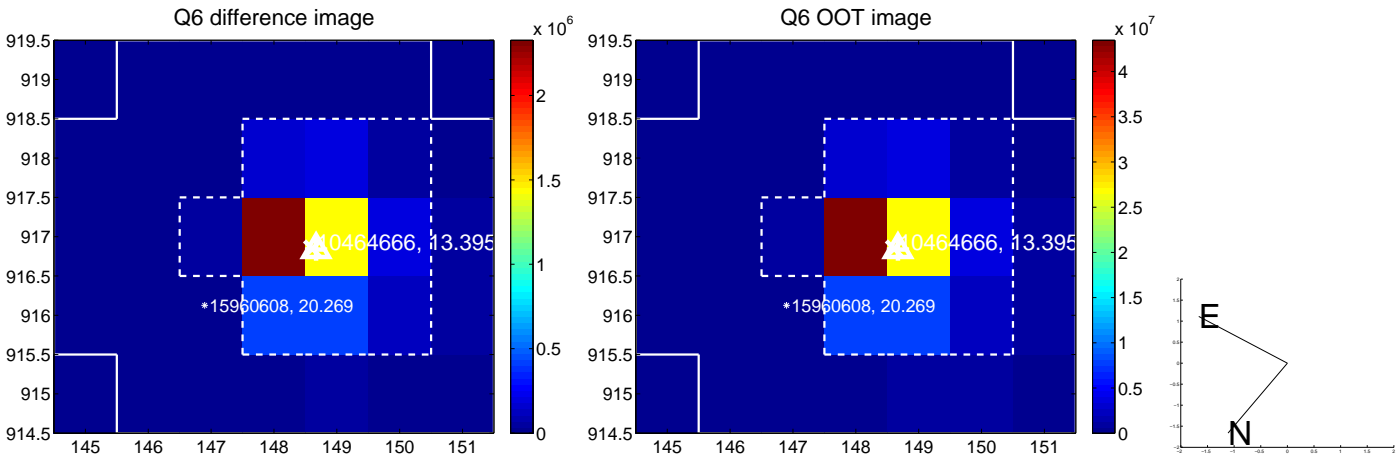
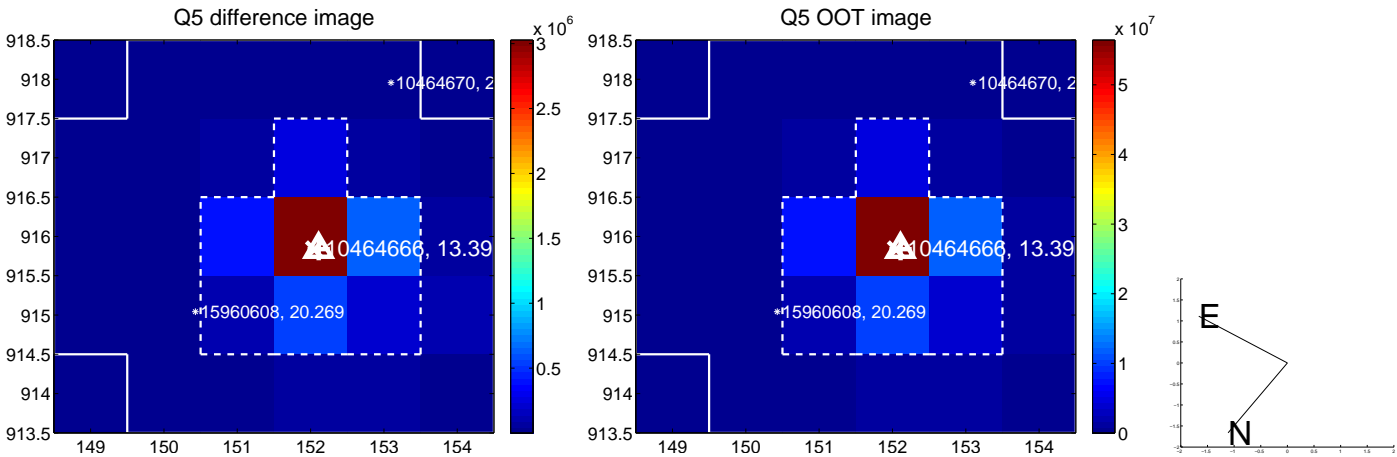
Q4 no difference image



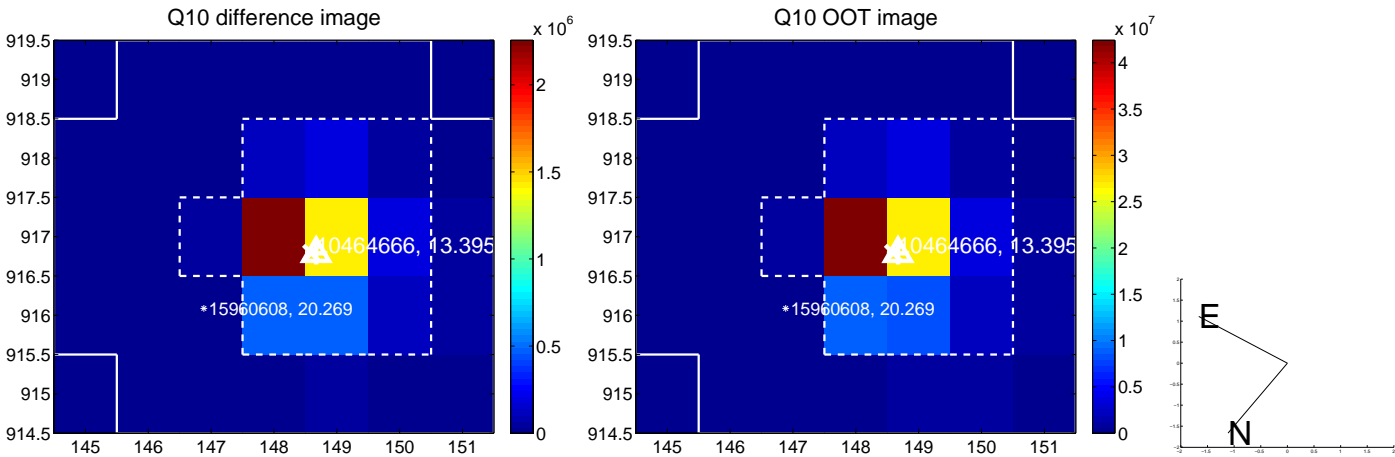
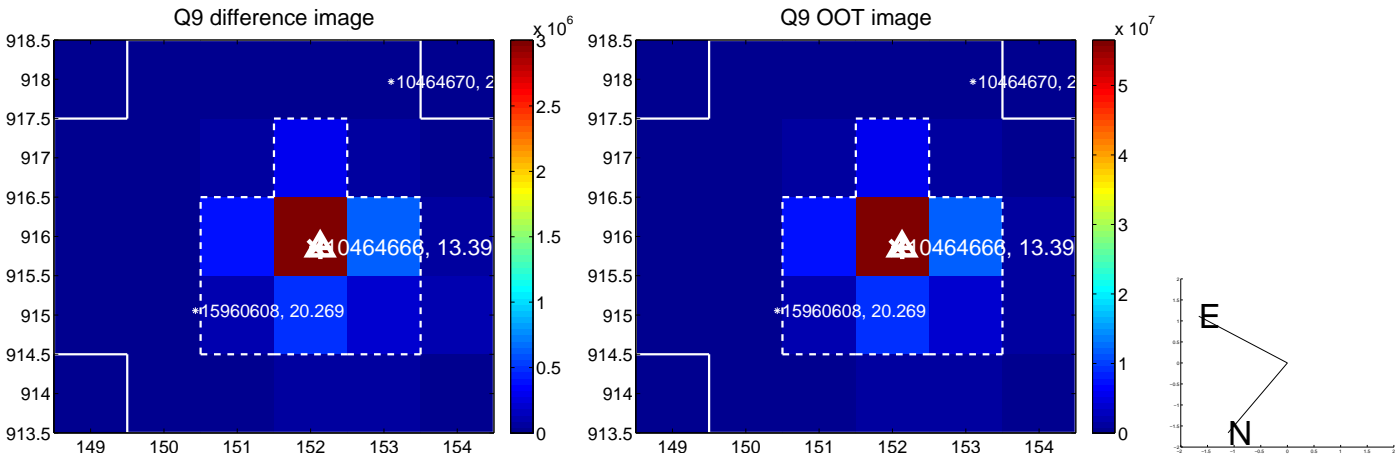
Q4 no OOT image



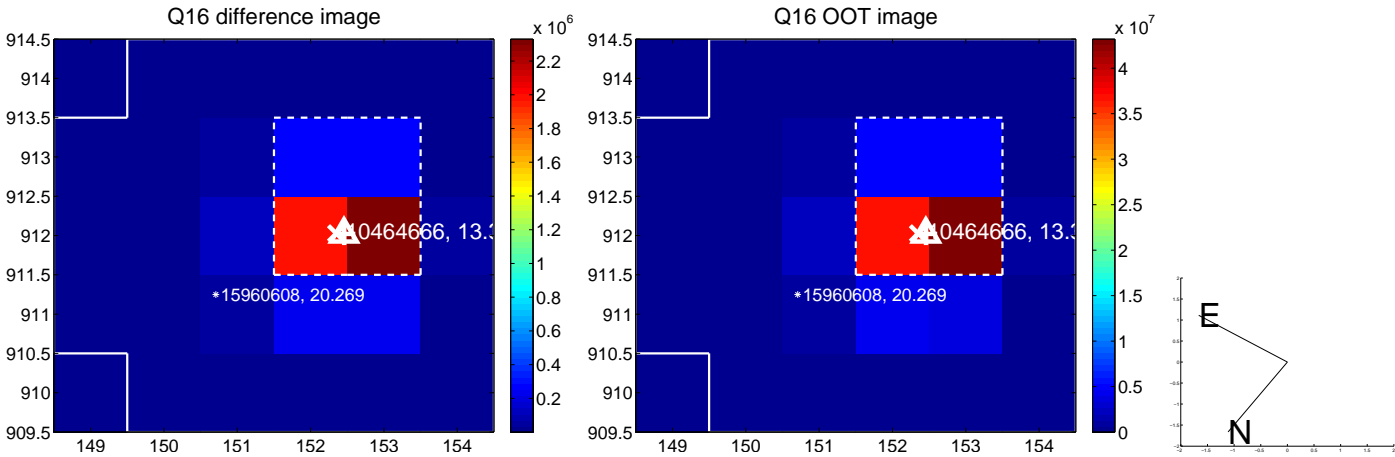
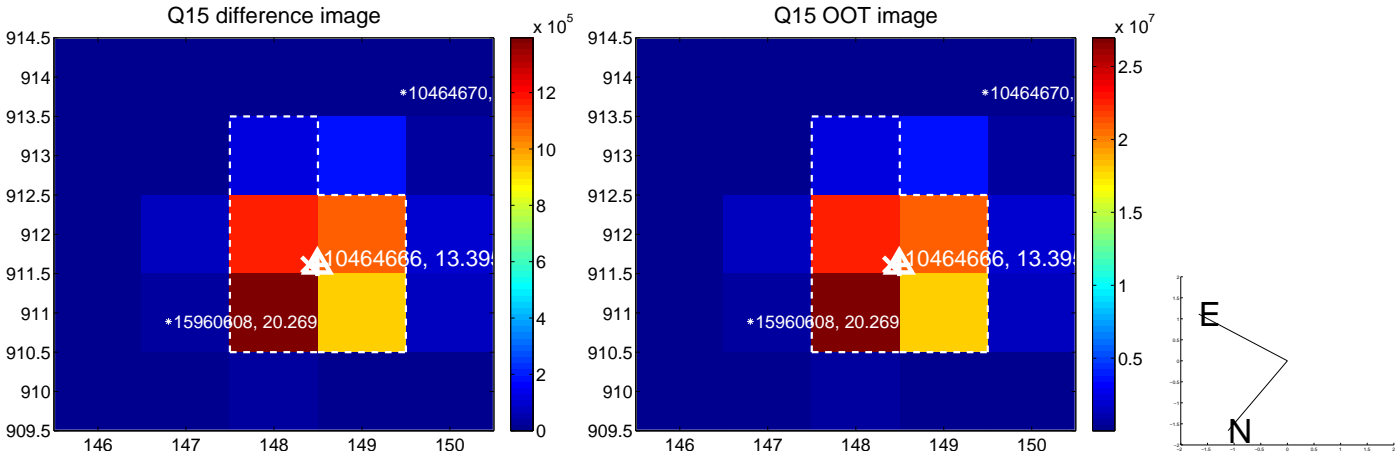
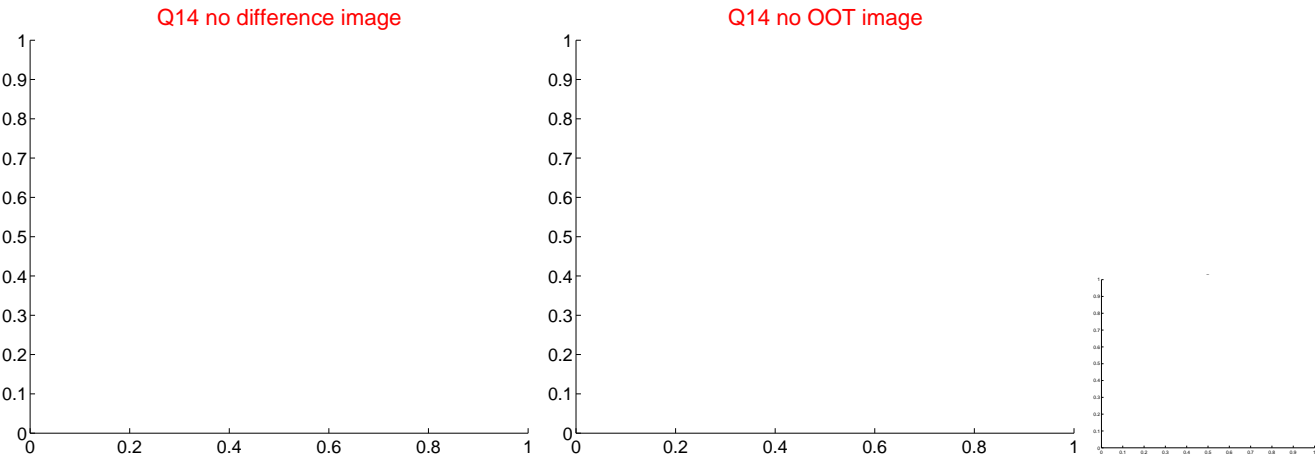
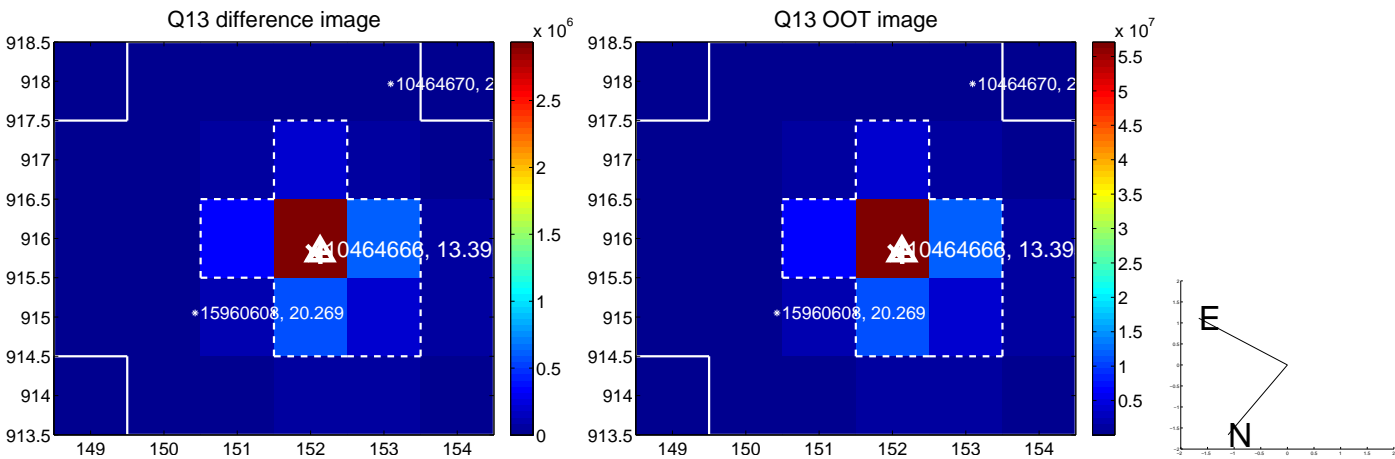
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



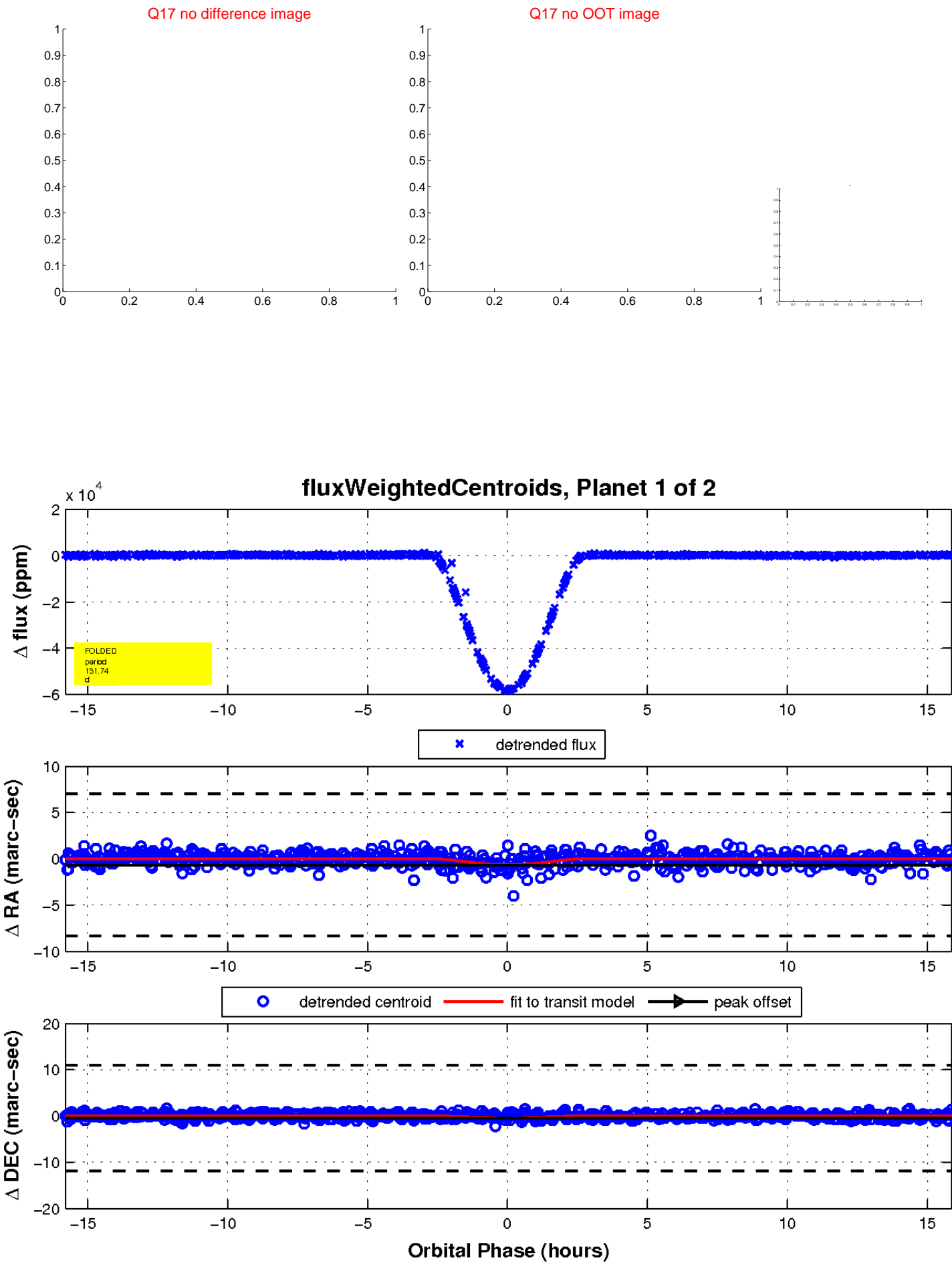
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

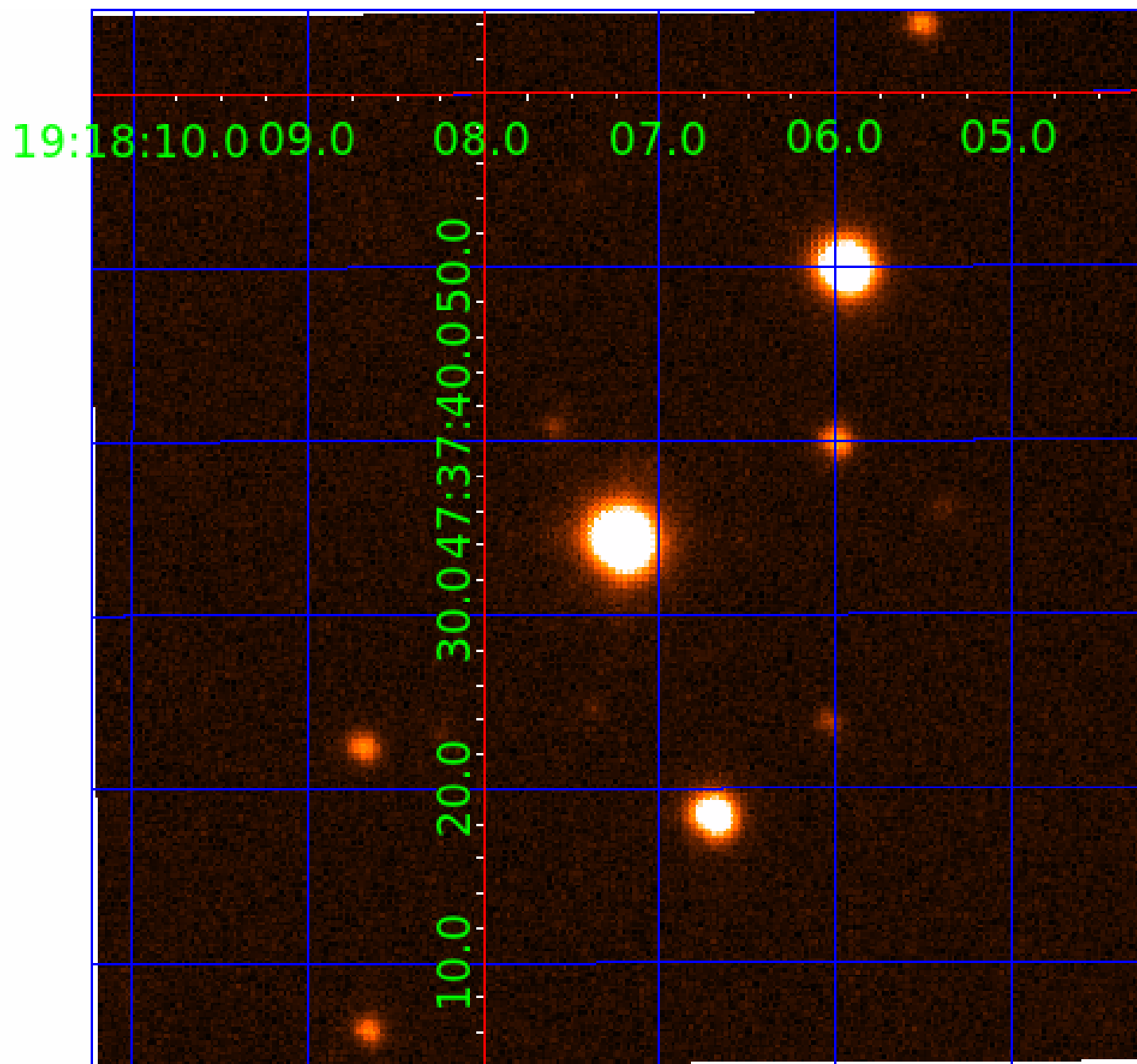


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010464666

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})
010464666-01	OBS	3578.01	131.736282	194.583530	58107.2	5.295	1395.6	1269.7	1.67	5102	57.54	6.91
010464666-02	OBS	No	131.736476	160.413784	804.5	3.939	21.5	23.5	1.67	5102	6.80	6.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010464666-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—DEEP_V_SHAPED—HAS_SEC_TCE
010464666-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

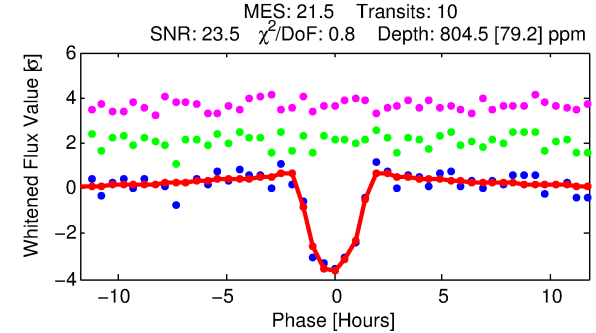
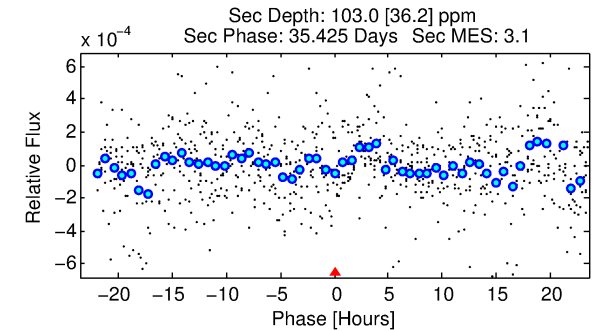
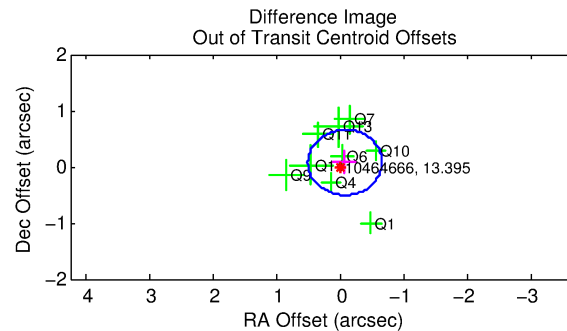
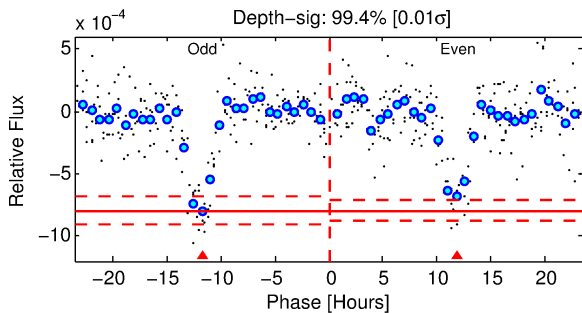
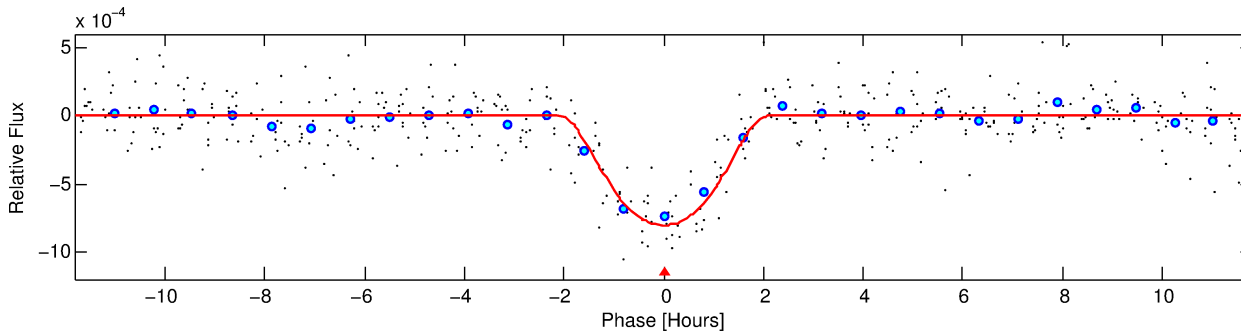
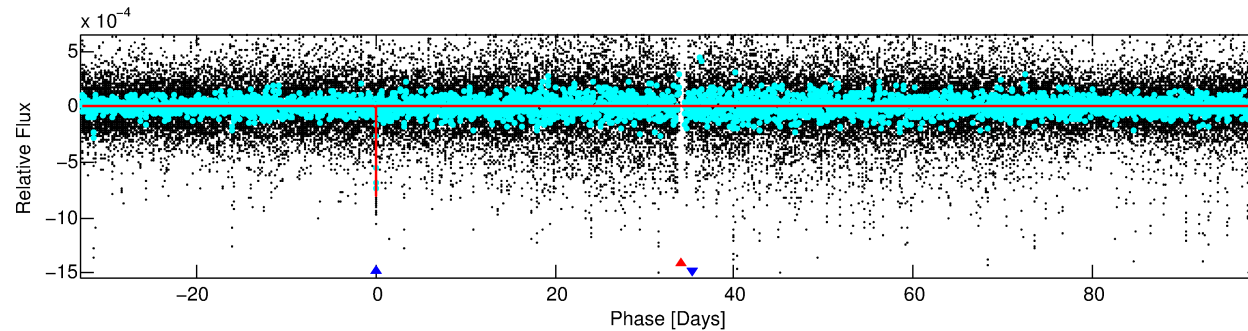
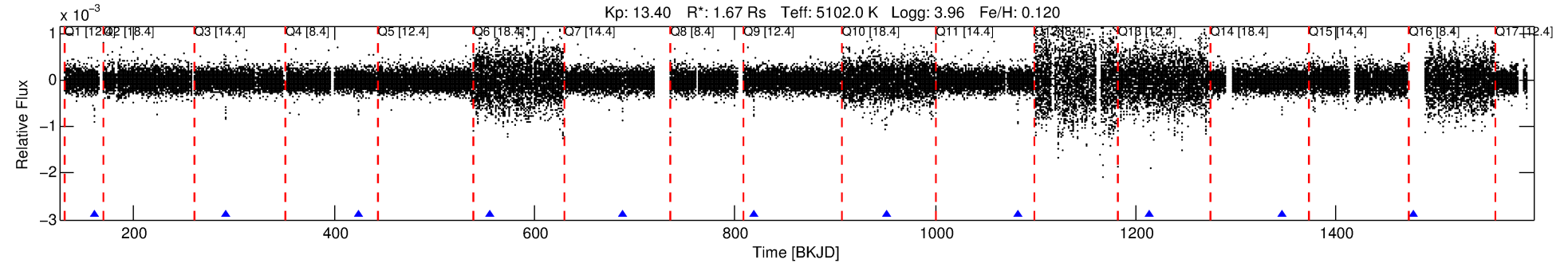
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010464666-02

No Significant Match Found

DV One-Page Summary

KIC: 10464666 Candidate: 2 of 2 Period: 131.736 d
KOI: K03578 Corr: No Ephemeris Match



DV Fit Results:

Period = 131.73648 [0.00056] d
Epoch = 160.4138 [0.0028] BKJD
Rp/R* = 0.0373 [0.0068]
a/R* = 93.47 [10.91]
b = 0.97 [0.02]
Seff = 6.91 [6.93]
Teq = 413 [104] K
Rp = 6.80 [4.33] Re
a = 0.4948 [0.3016] AU
Ag = 299.81 [334.37] [0.89σ]
Teffp = 2659 [347] K [6.20σ]

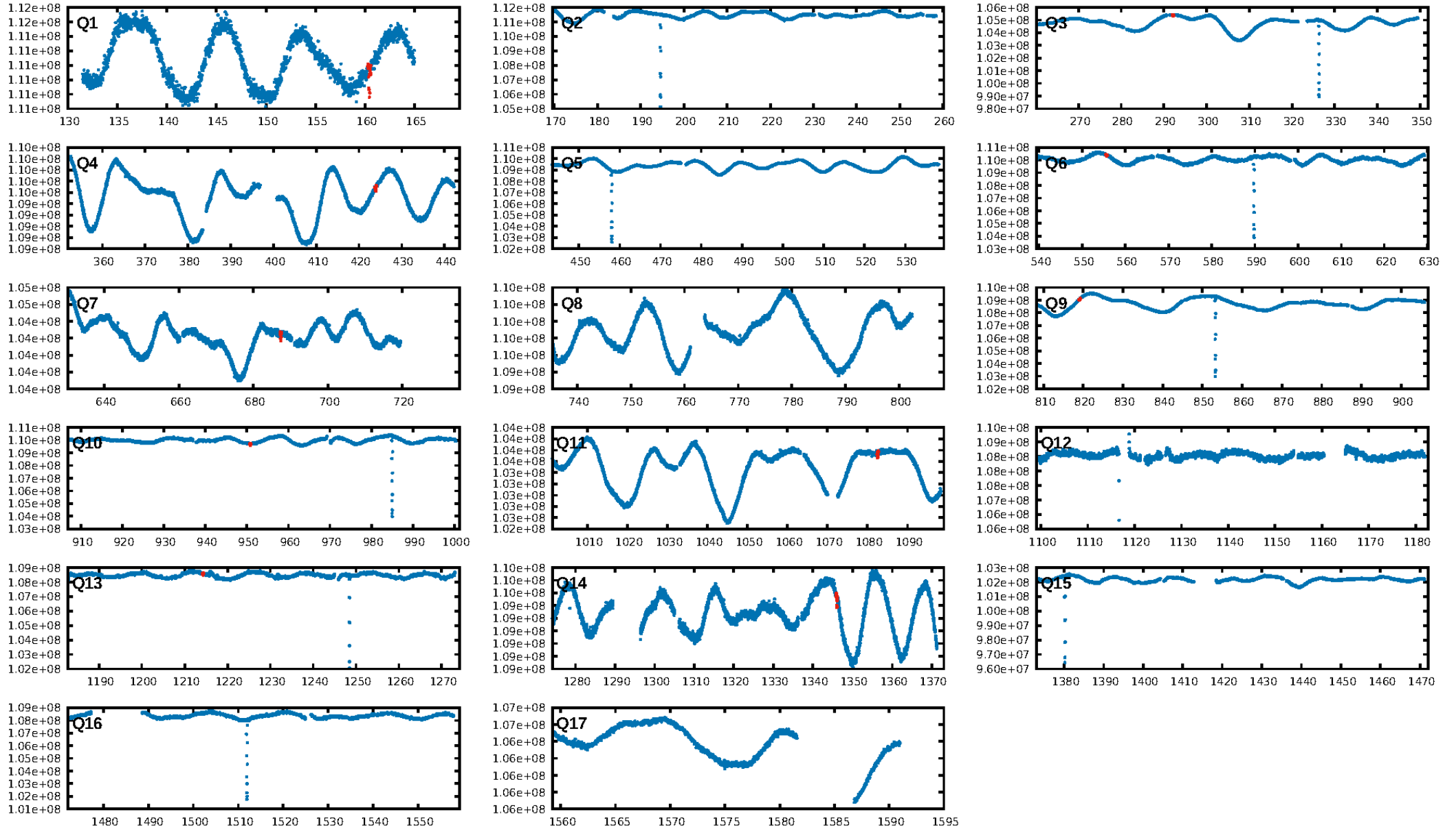
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 79.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.01e-77
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 7.027
Centroid-sig: 70.1%
Centroid-so: 0.250 arcsec [0.61σ]
OotOffset-rm: 0.101 arcsec [0.52σ]
KicOffset-rm: 0.317 arcsec [1.85σ]
OotOffset-st: 3/2/1/3 [9]
KicOffset-st: 3/2/1/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [9/9]

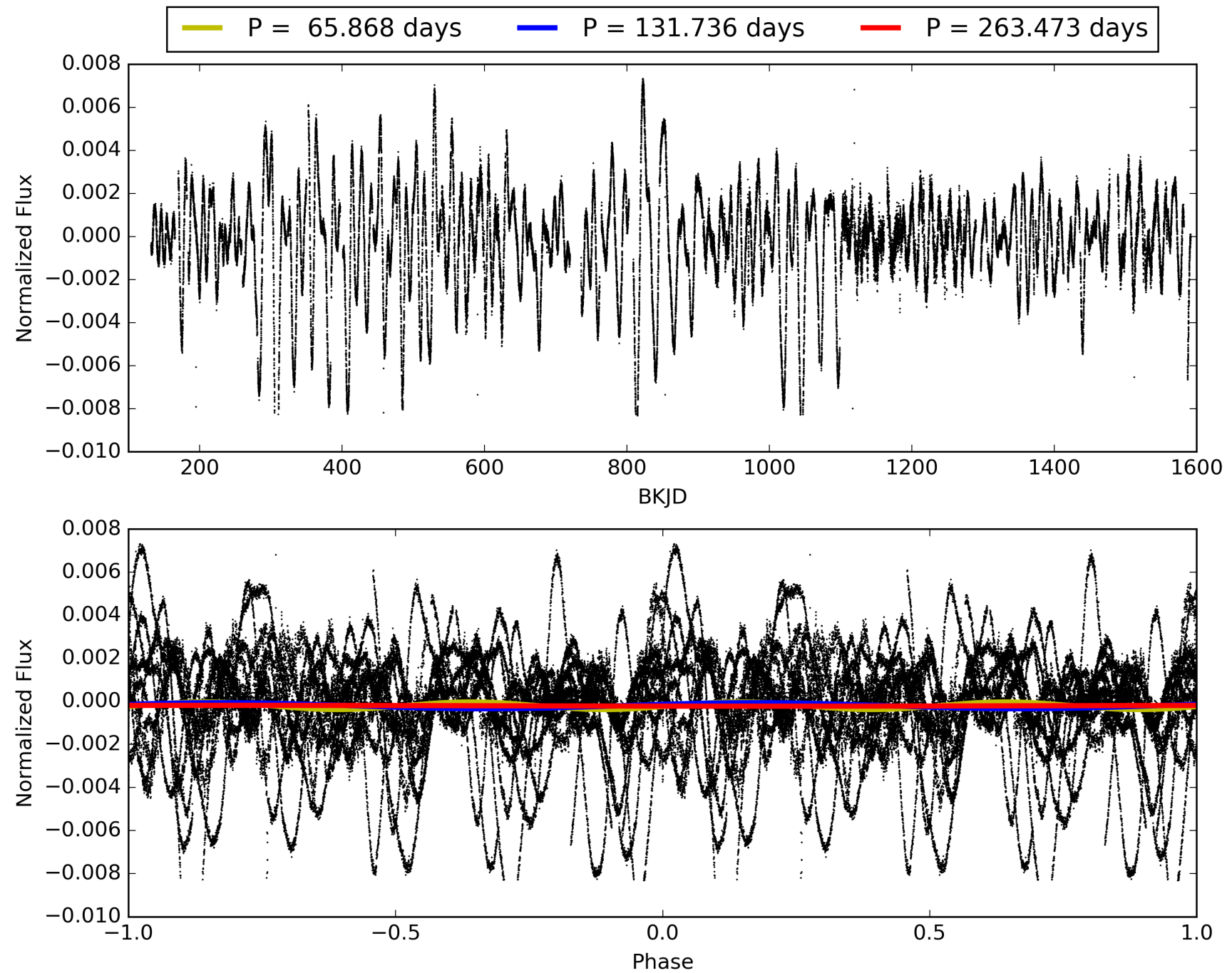
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:00:36 Z

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

TCE 010464666-02, PDC Light Curves

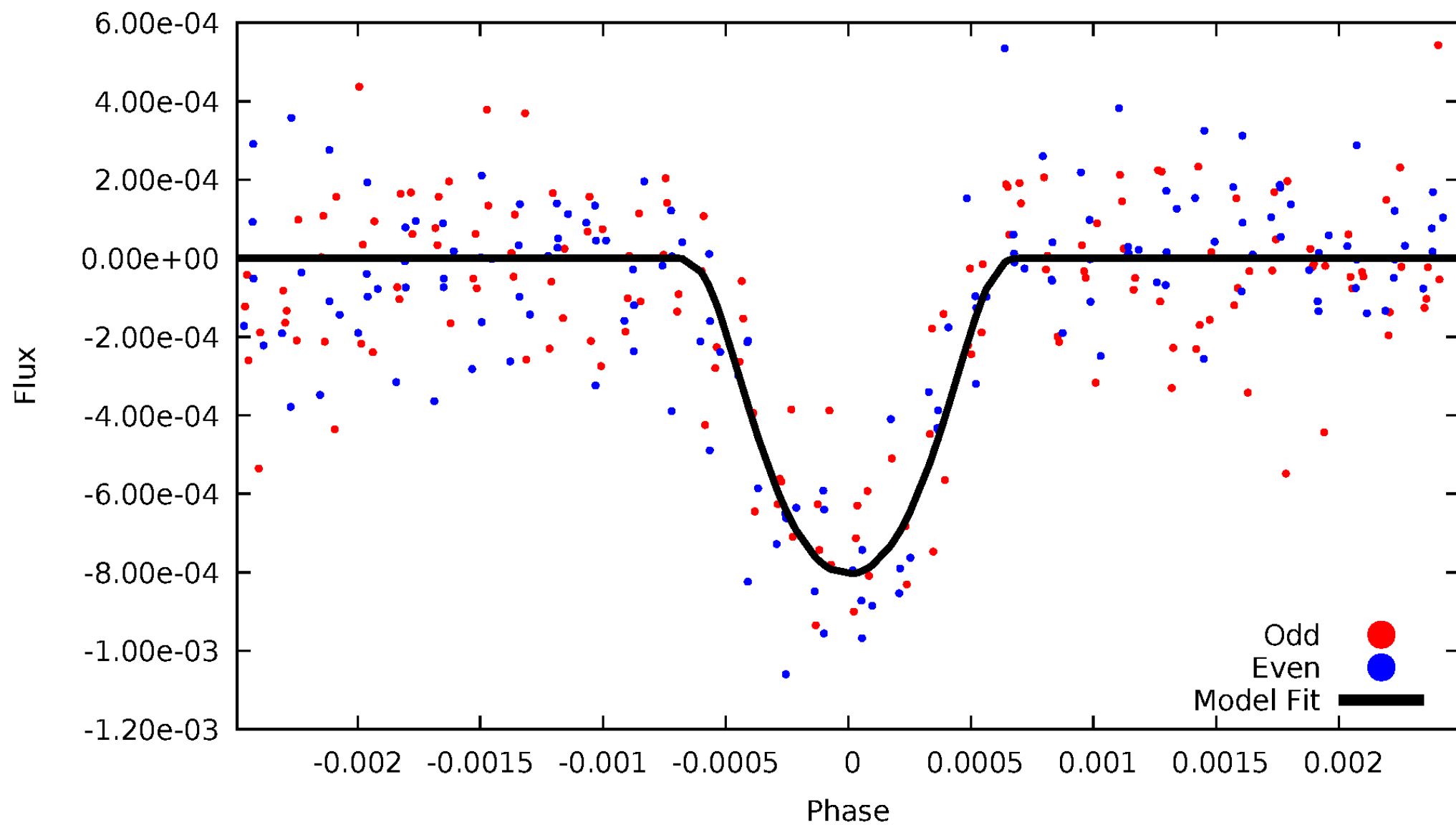


TCE 010464666-02



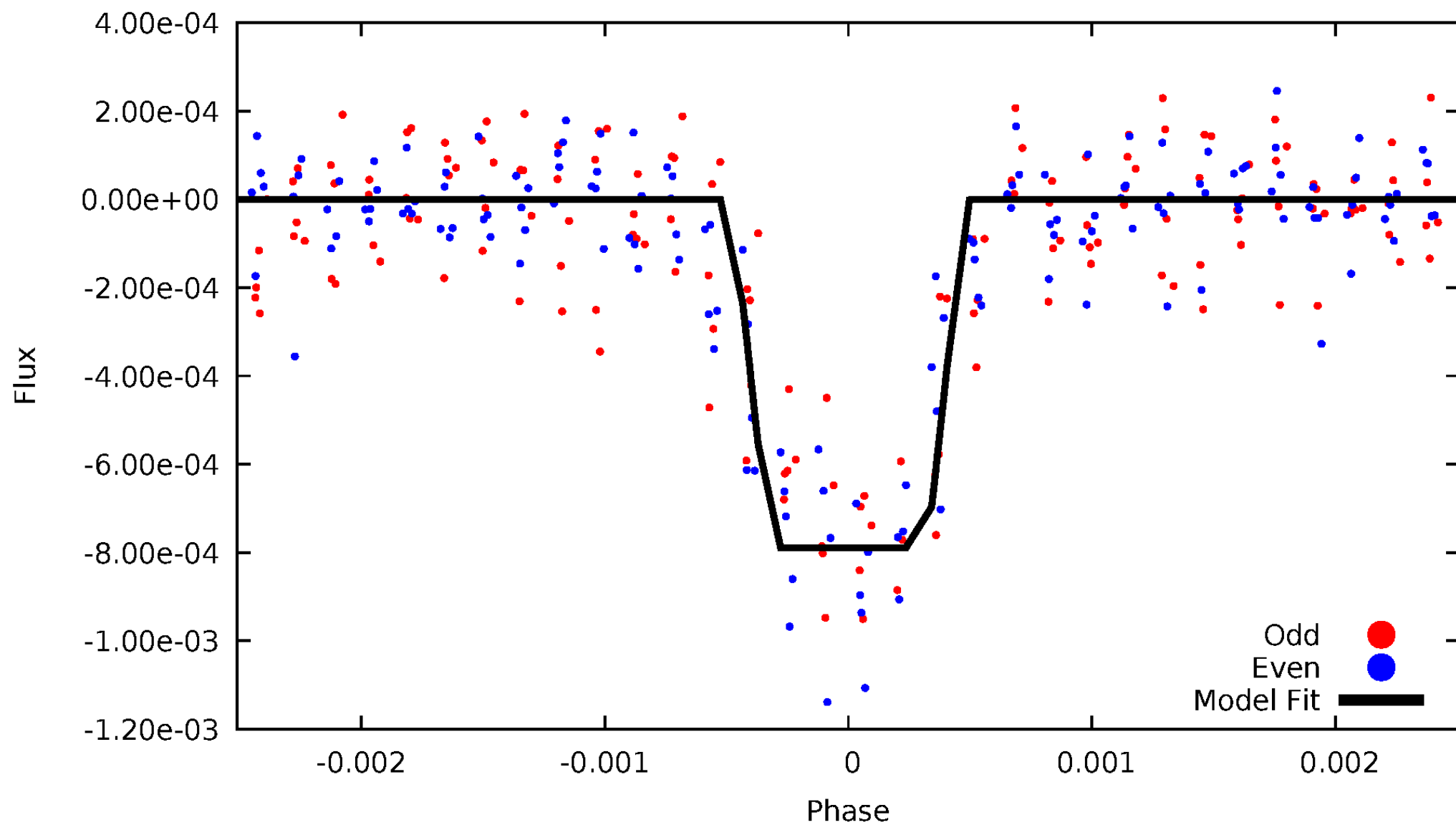
DV Odd/Even

TCE 010464666-02



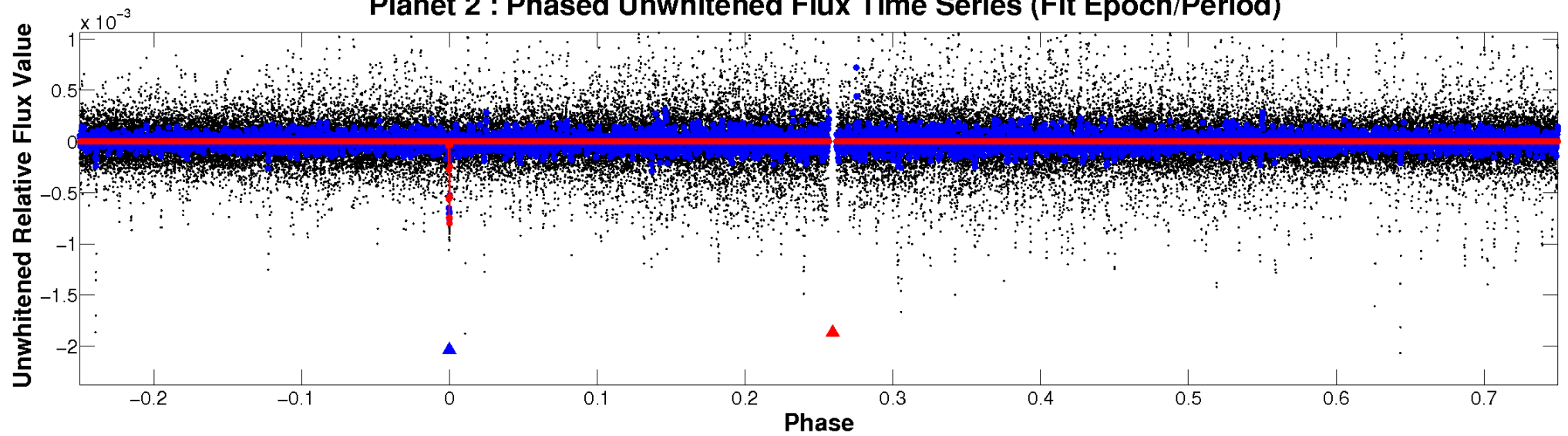
ALT Odd/Even

TCE 010464666-02

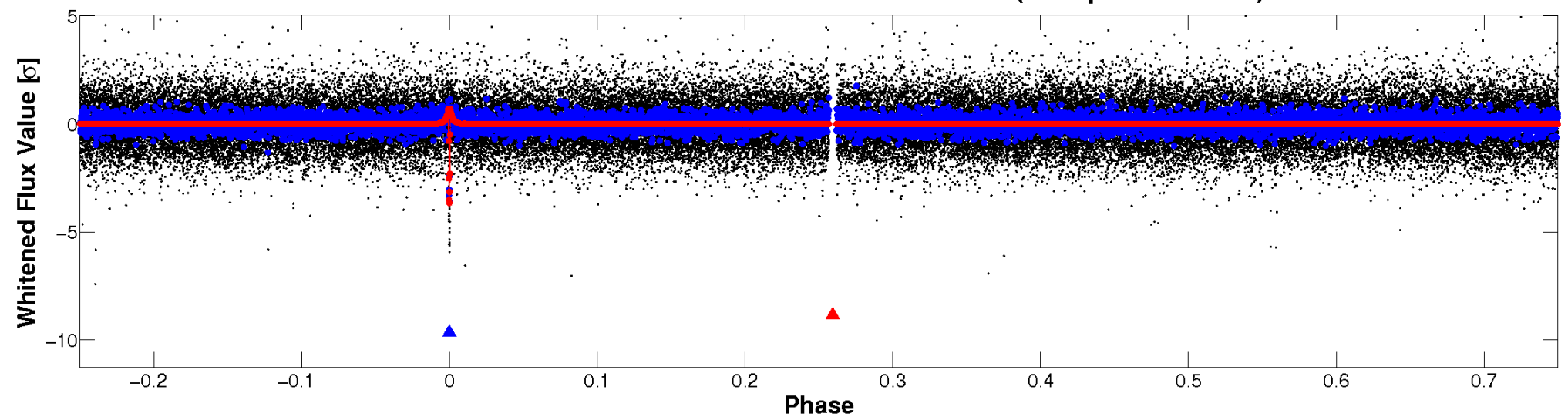


Non-Whitened Vs. Whitened Light Curve

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

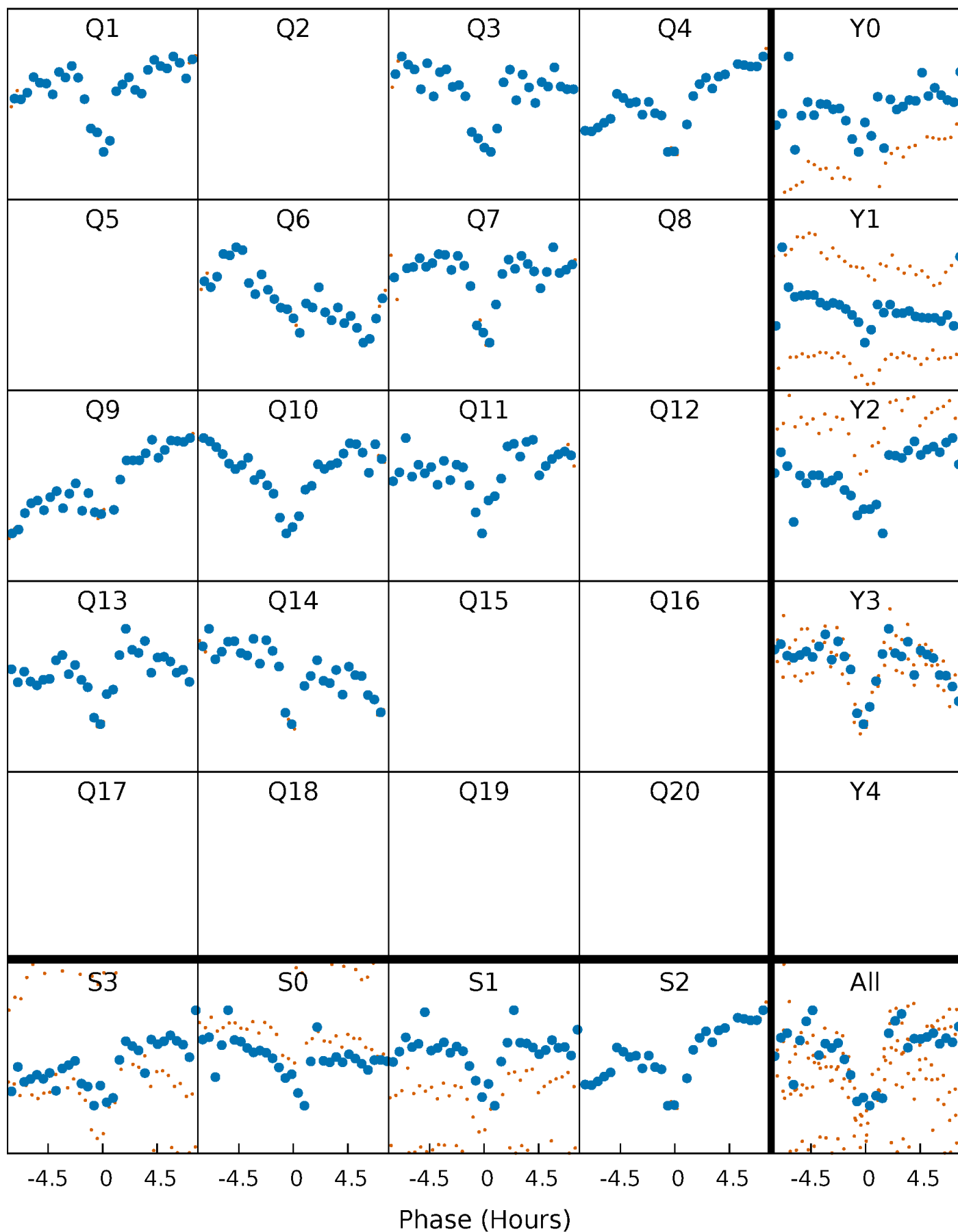


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



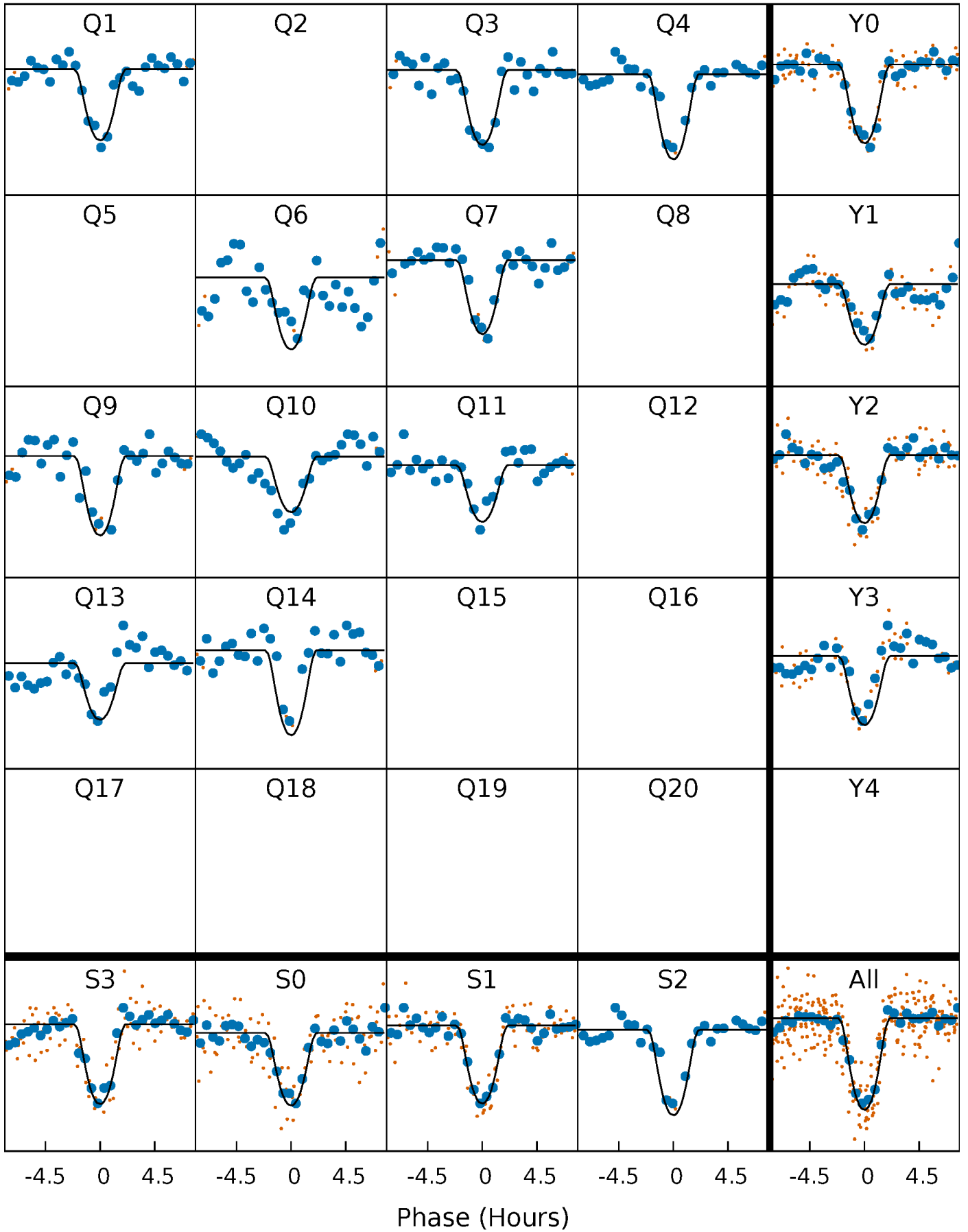
PDC Quarter-Phased Transit Curves

TCE 010464666-02 P=131.736476 Days $T_0=160.413784$ (BKJD)



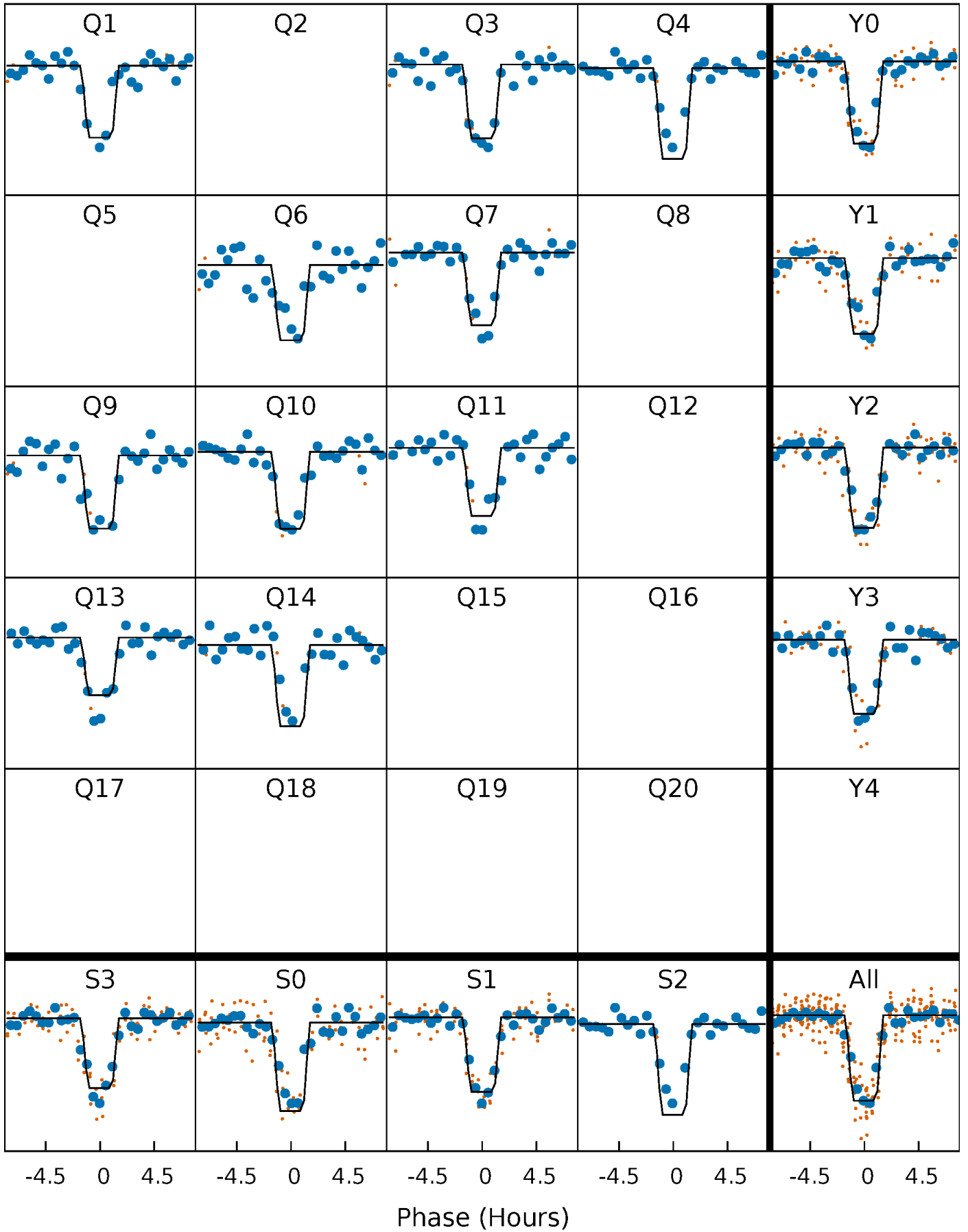
DV Quarter-Phased Transit Curves

TCE 010464666-02 $P=131.736476$ Days $T_0=160.413784$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

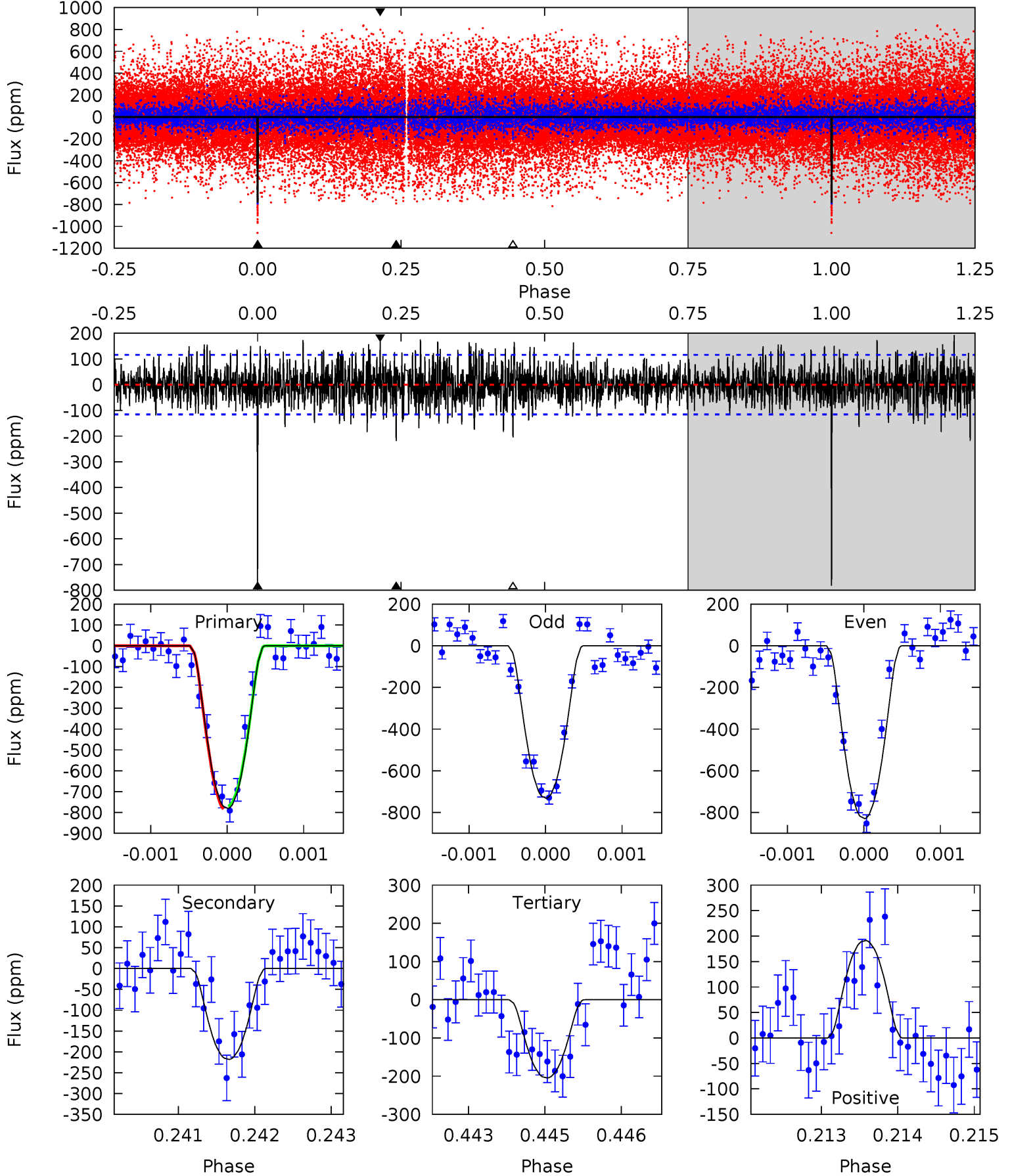
TCE 010464666-02 P=131.734811 Days $T_0=160.420355$ (BKJD)



DV Model-Shift Uniqueness Test

010464666-02, P = 131.736476 Days, E = 28.677308 Days

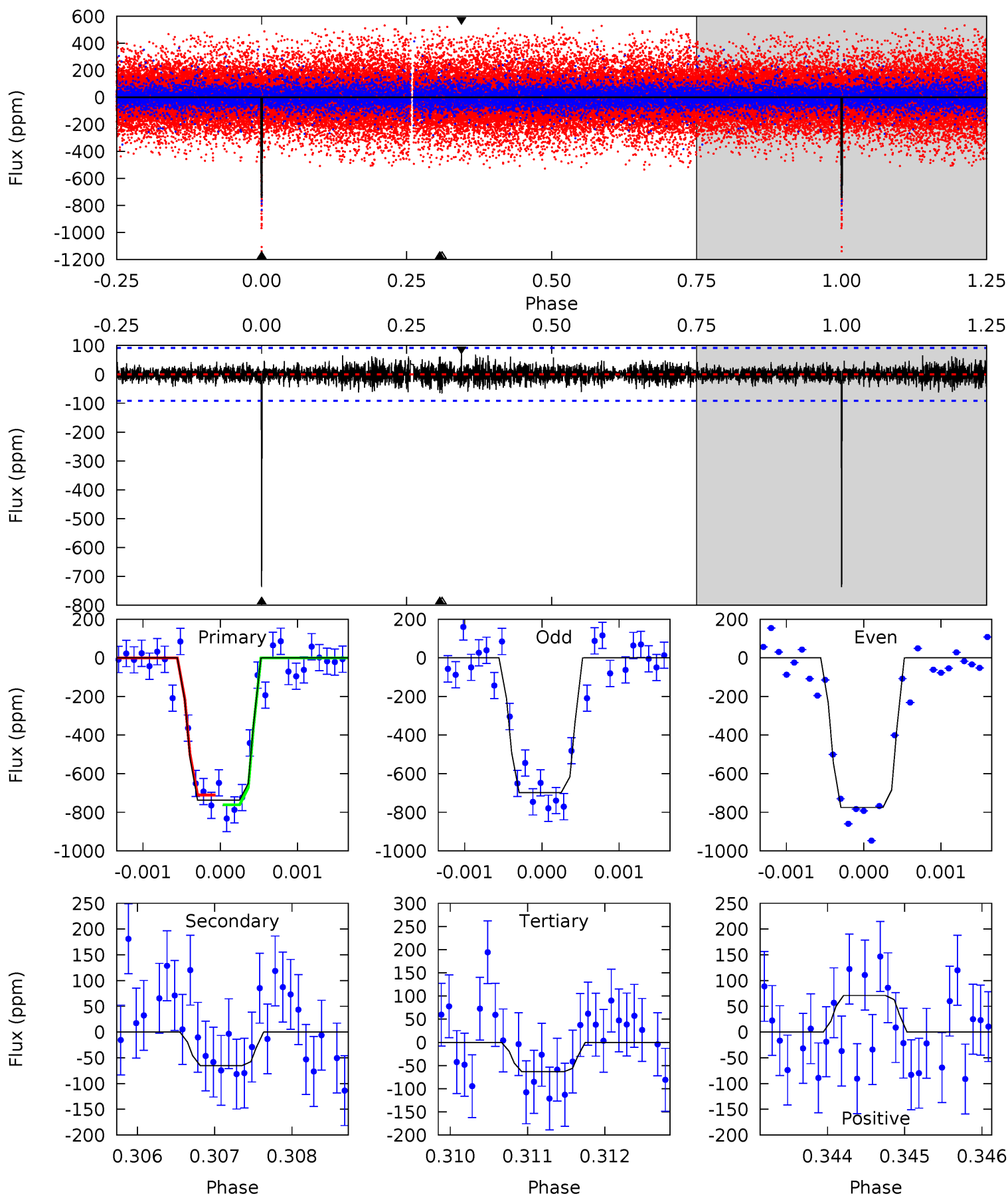
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.4	10.2	9.54	8.92	5.39	3.20	2.43	26.9	27.5	0.63	1.25	2.26	1.00	0.20	0.34



Alt Model-Shift Uniqueness Test

010464666-02, P = 131.734811 Days, E = 28.685544 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.8	3.87	3.78	4.23	5.46	3.31	1.03	40.1	39.6	0.09	-0.36	2.30	0.97	0.09	1.53



Stellar Parameters For KIC 010464666

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5102^{+169}_{-138}	$3.962^{+0.591}_{-0.318}$	$0.120^{+0.250}_{-0.250}$	$1.669^{+1.019}_{-0.834}$	$0.932^{+0.175}_{-0.131}$	$0.282^{+2.178}_{-0.199}$
	+3%/-3%	+15%/-8%	+208%/-208%	+61%/-50%	+19%/-14%	+772%/-70%
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 010464666-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-218 ± 21	$6.32^{+2.84}_{-2.06}$	563^{+86}_{-83}	3619^{+277}_{-230}	727^{+856}_{-369}
Alt.	-65 ± 17	$4.90^{+2.34}_{-1.76}$	570^{+84}_{-84}	3266^{+330}_{-263}	359^{+559}_{-199}

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

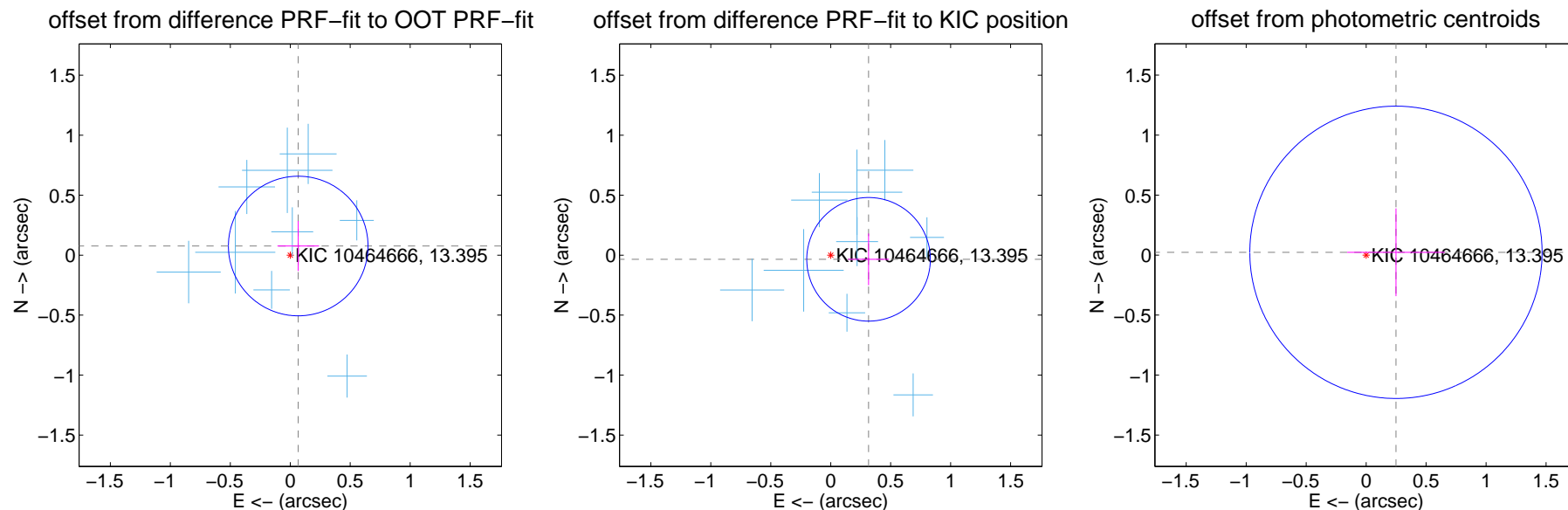
DV Centroid Data

Supplemental centroid analysis for 010464666-02. Kepler magnitude: 13.39. Transit SNR 23.48

There are 9 quarters with good PRF difference image offsets

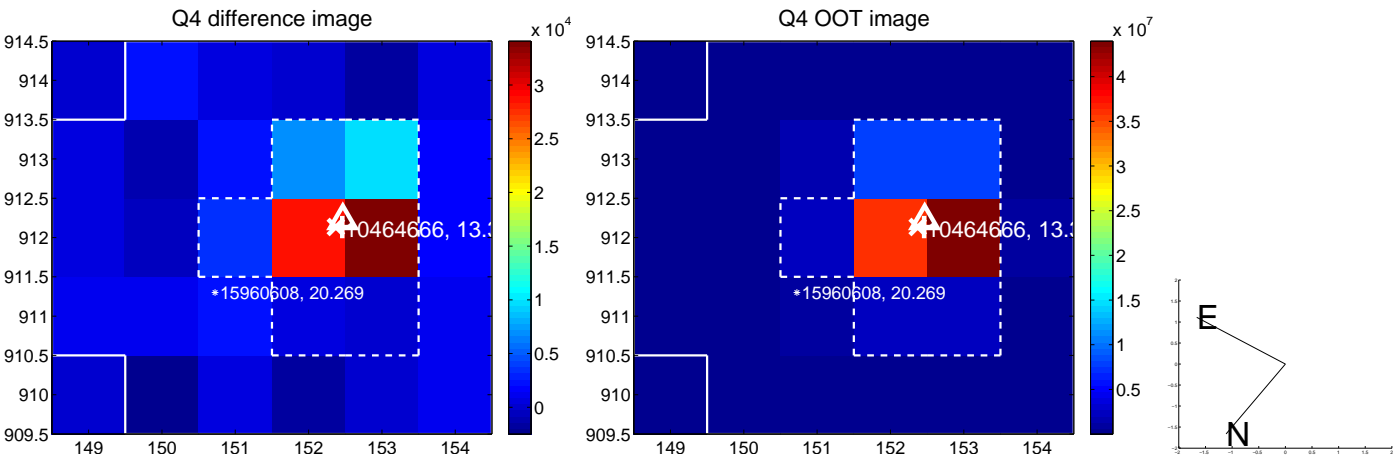
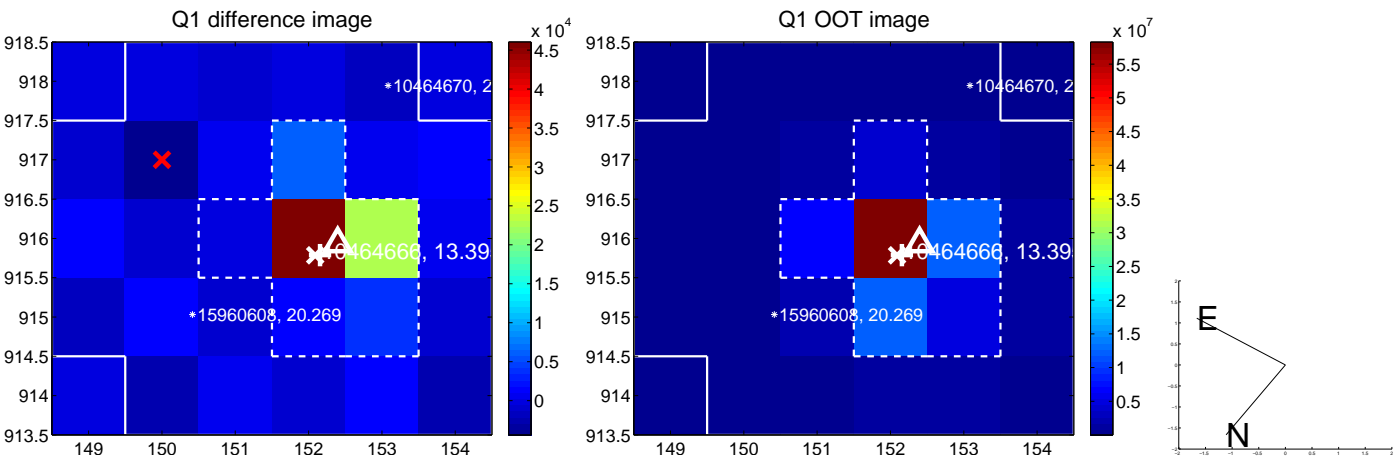
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.194	0.52	-0.066 ± 0.173	0.076 ± 0.208
PRF-fit source offset from KIC position	0.317 ± 0.172	1.85	-0.315 ± 0.171	-0.035 ± 0.215
photometric centroid source offset	0.25 ± 0.41	0.61	-0.25 ± 0.41	0.02 ± 0.37

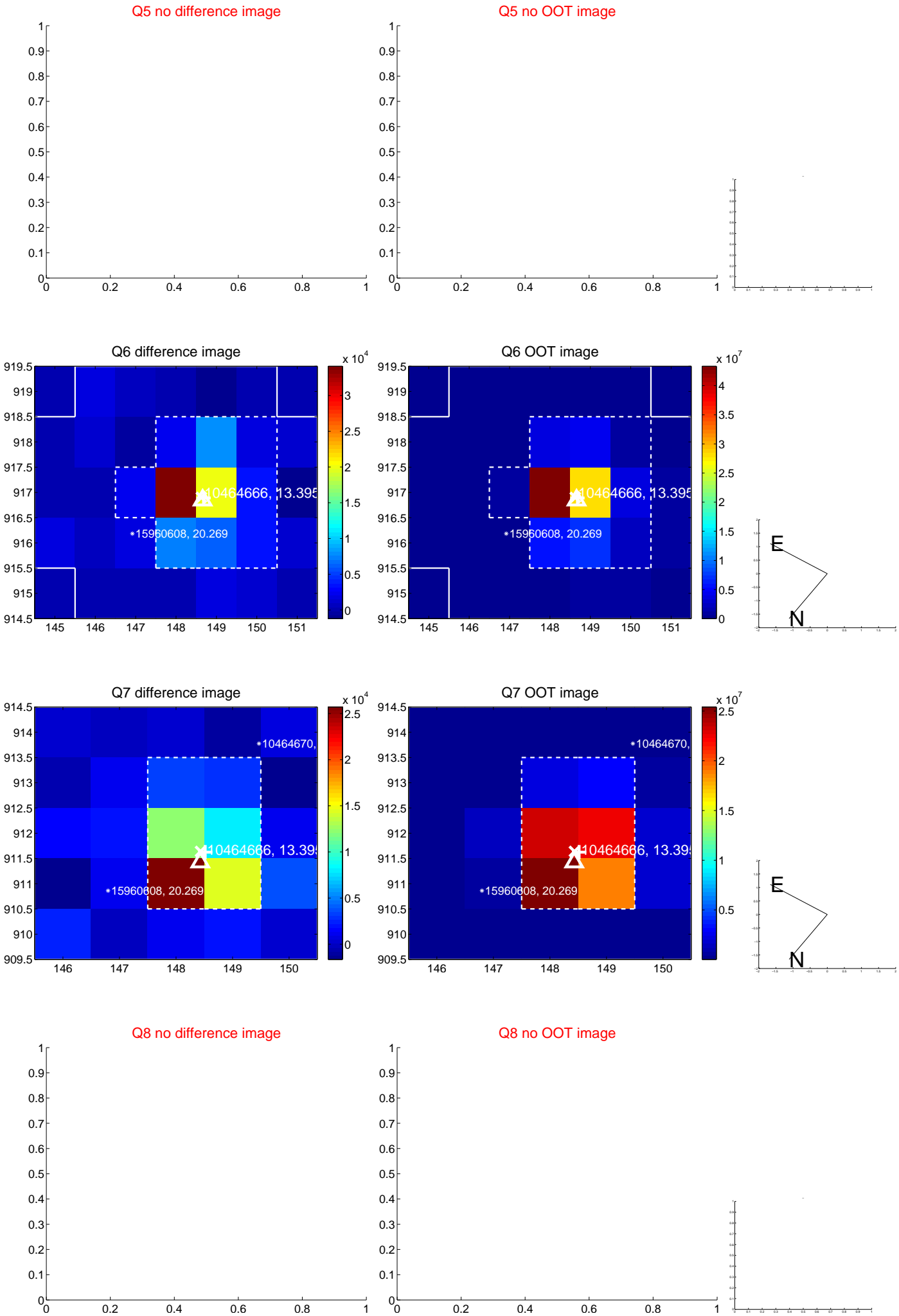


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

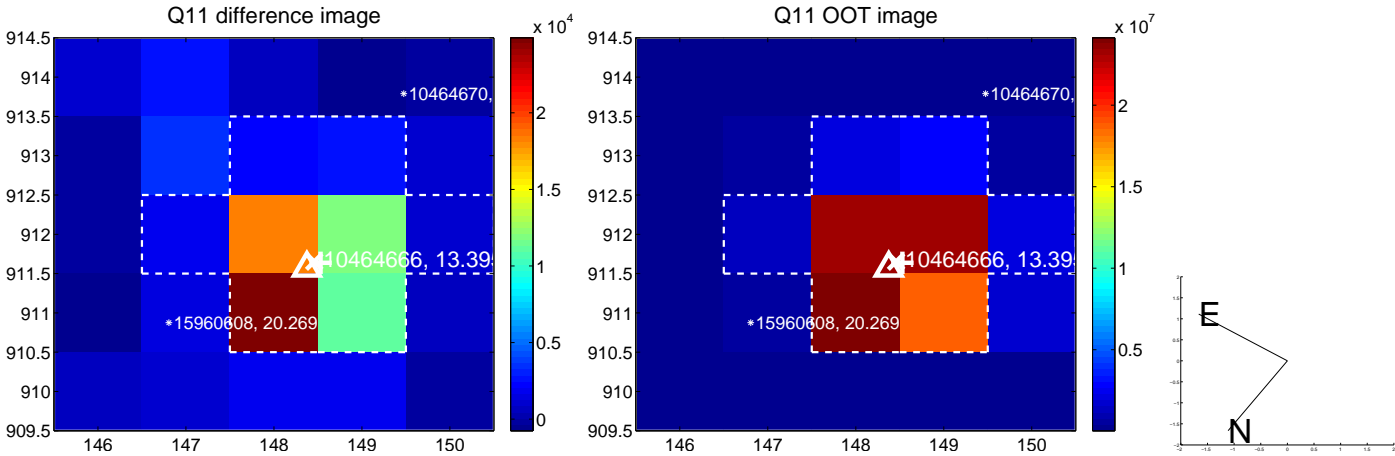
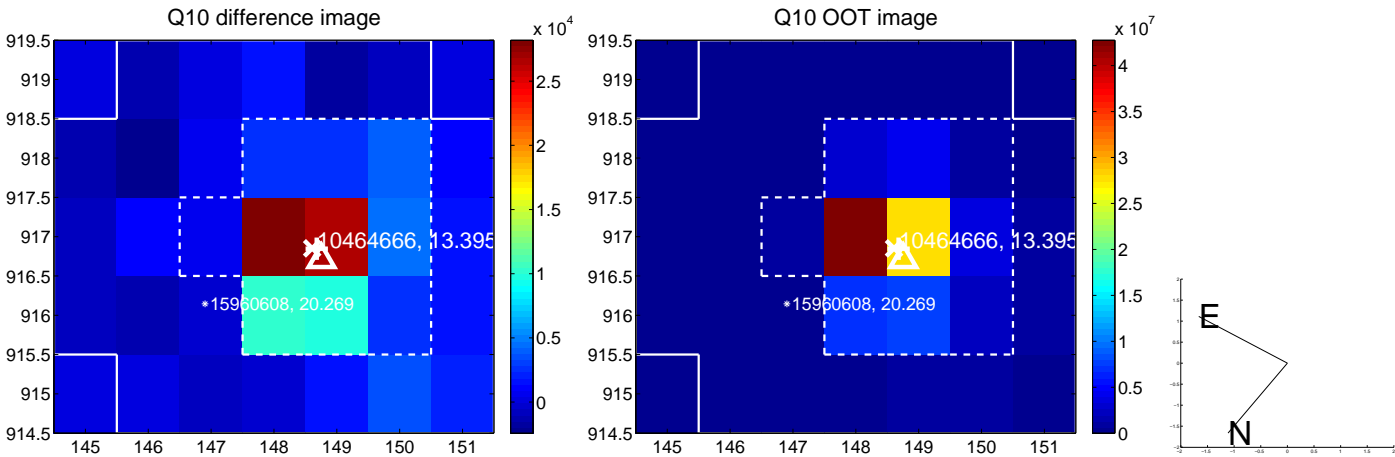
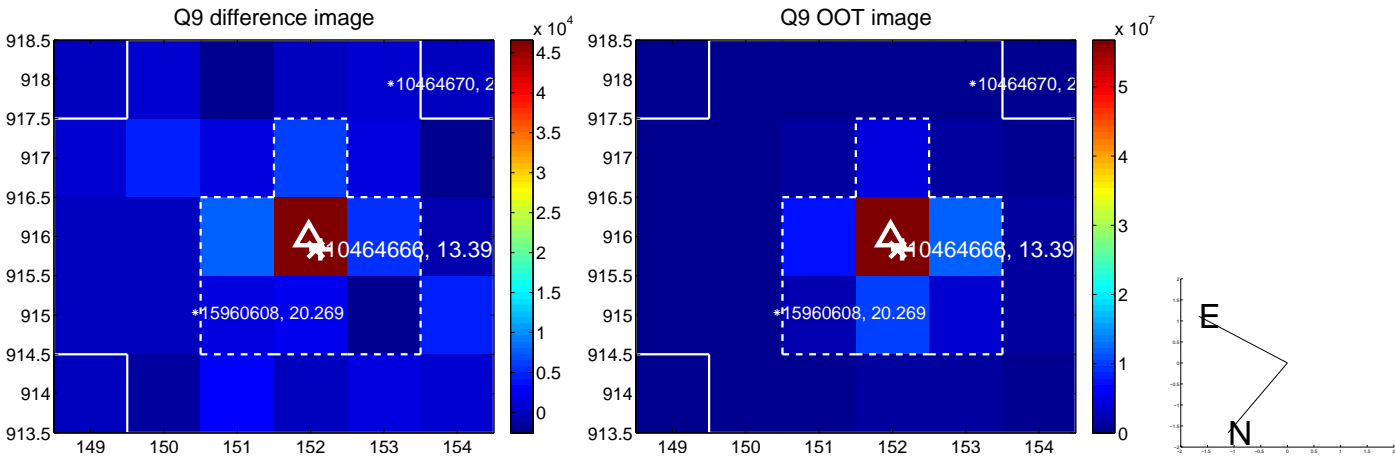
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



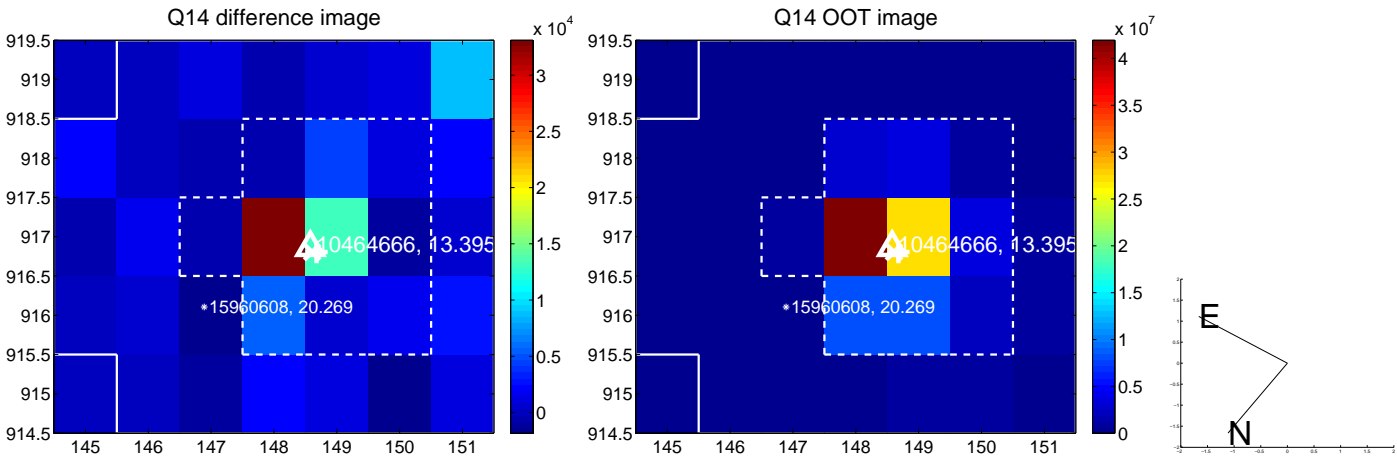
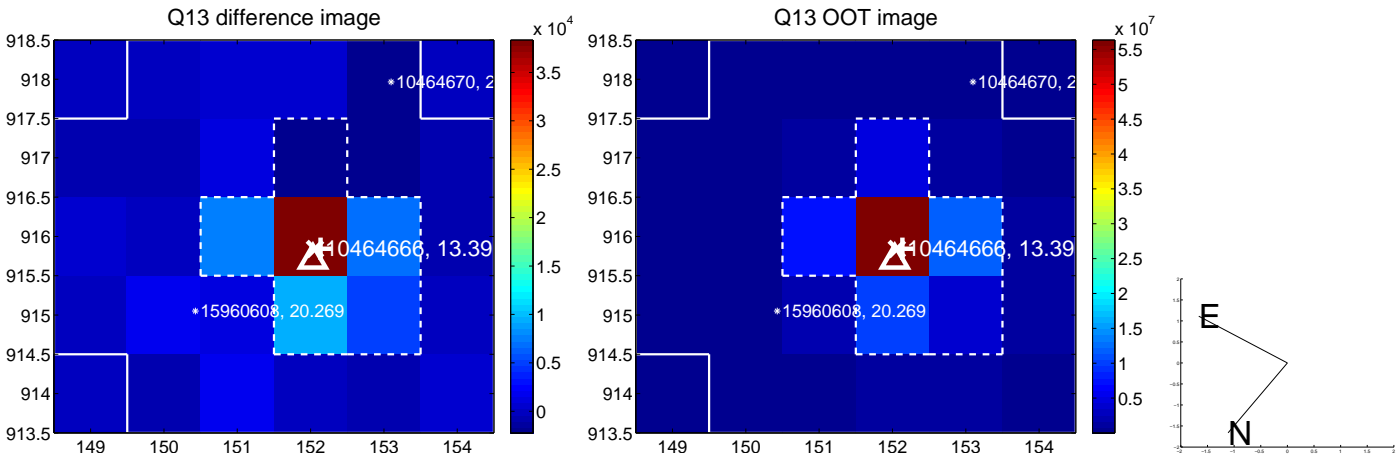
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



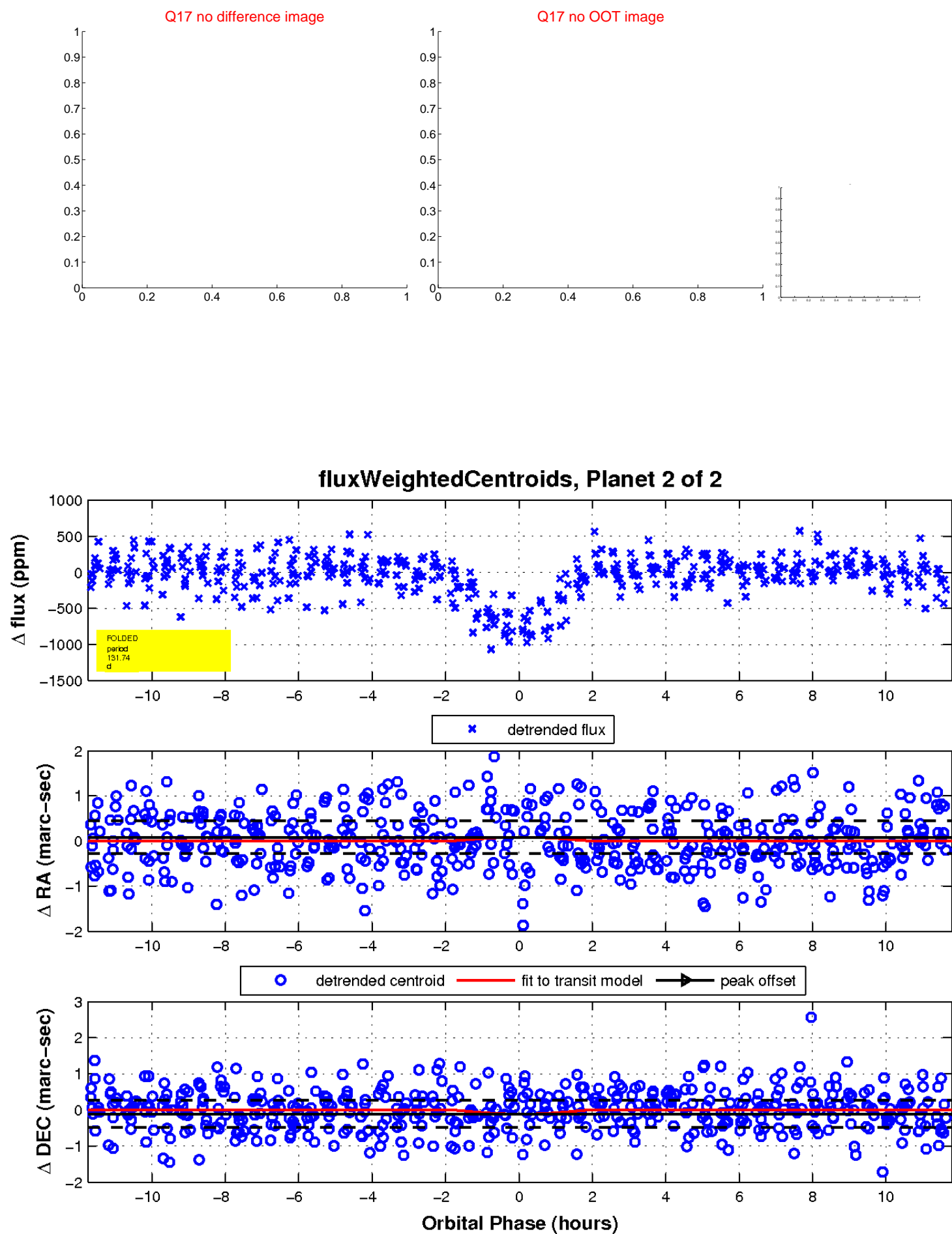
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

