

KIC 006948480

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})
006948480-01	OBS	2975.01	175.327645	230.937228	1037.4	6.104	14.5	14.9	0.93	6008	4.92	2.69
006948480-02	OBS	No	175.327920	254.675964	1221.8	2.448	8.7	11.2	0.93	6008	5.81	2.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006948480-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006948480-02	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.

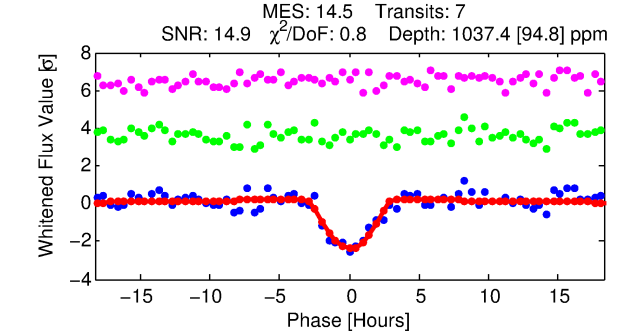
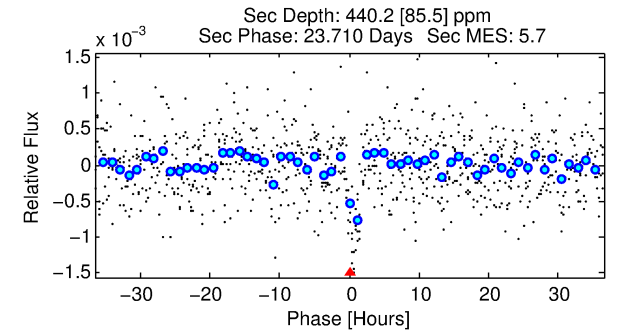
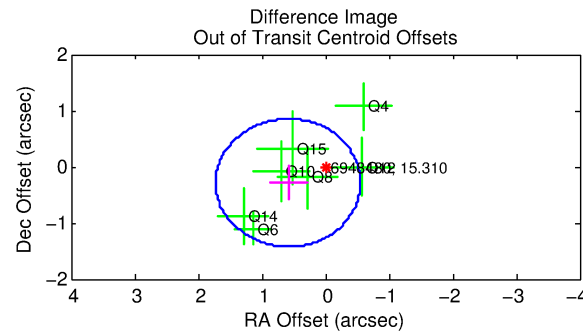
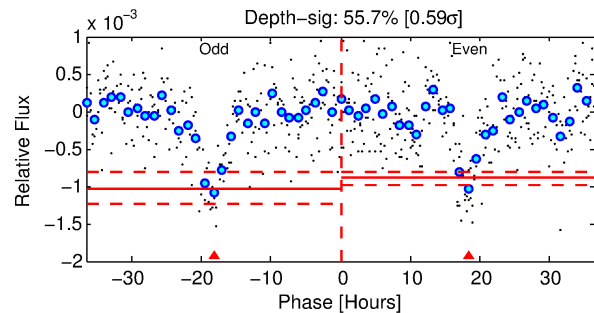
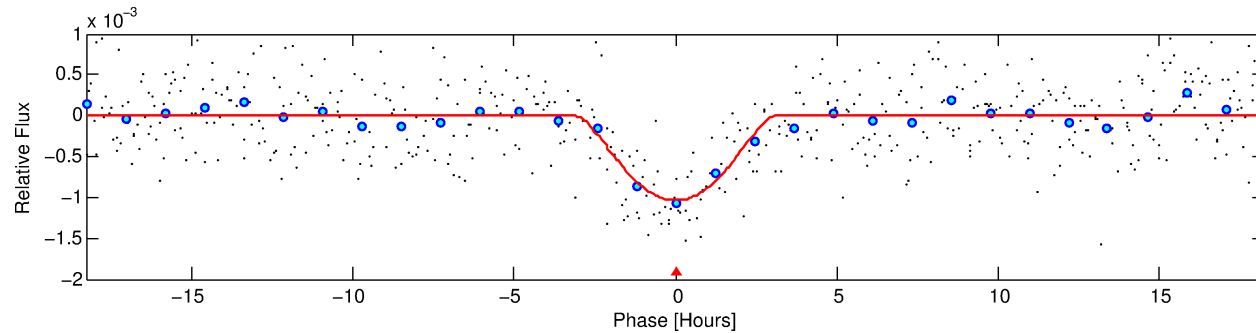
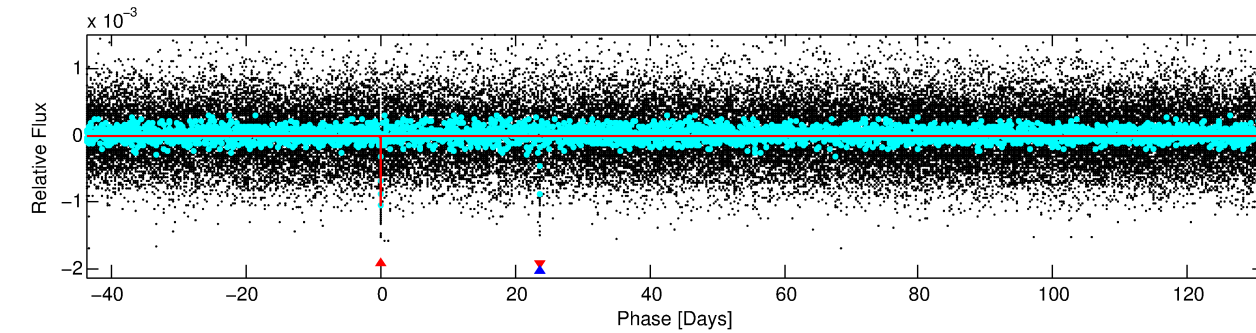
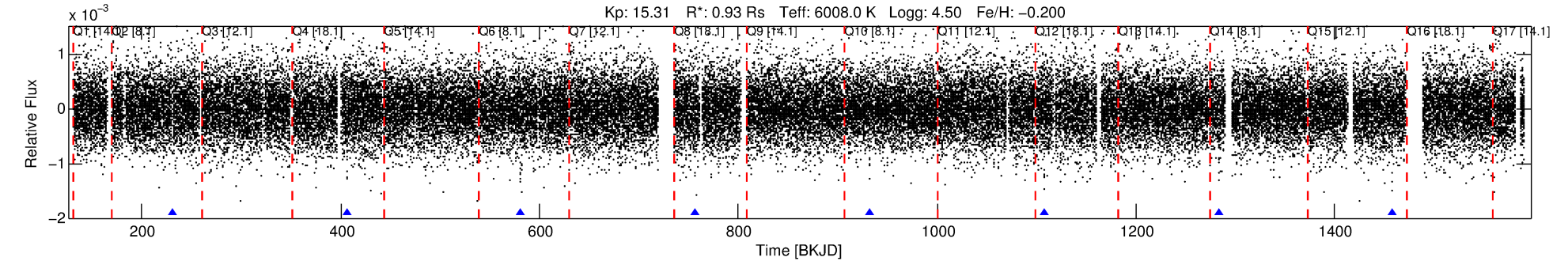
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006948480-01

No Significant Match Found

DV One-Page Summary

KIC: 6948480 Candidate: 1 of 2 Period: 175.328 d
KOI: K02975.01 Corr: 0.885



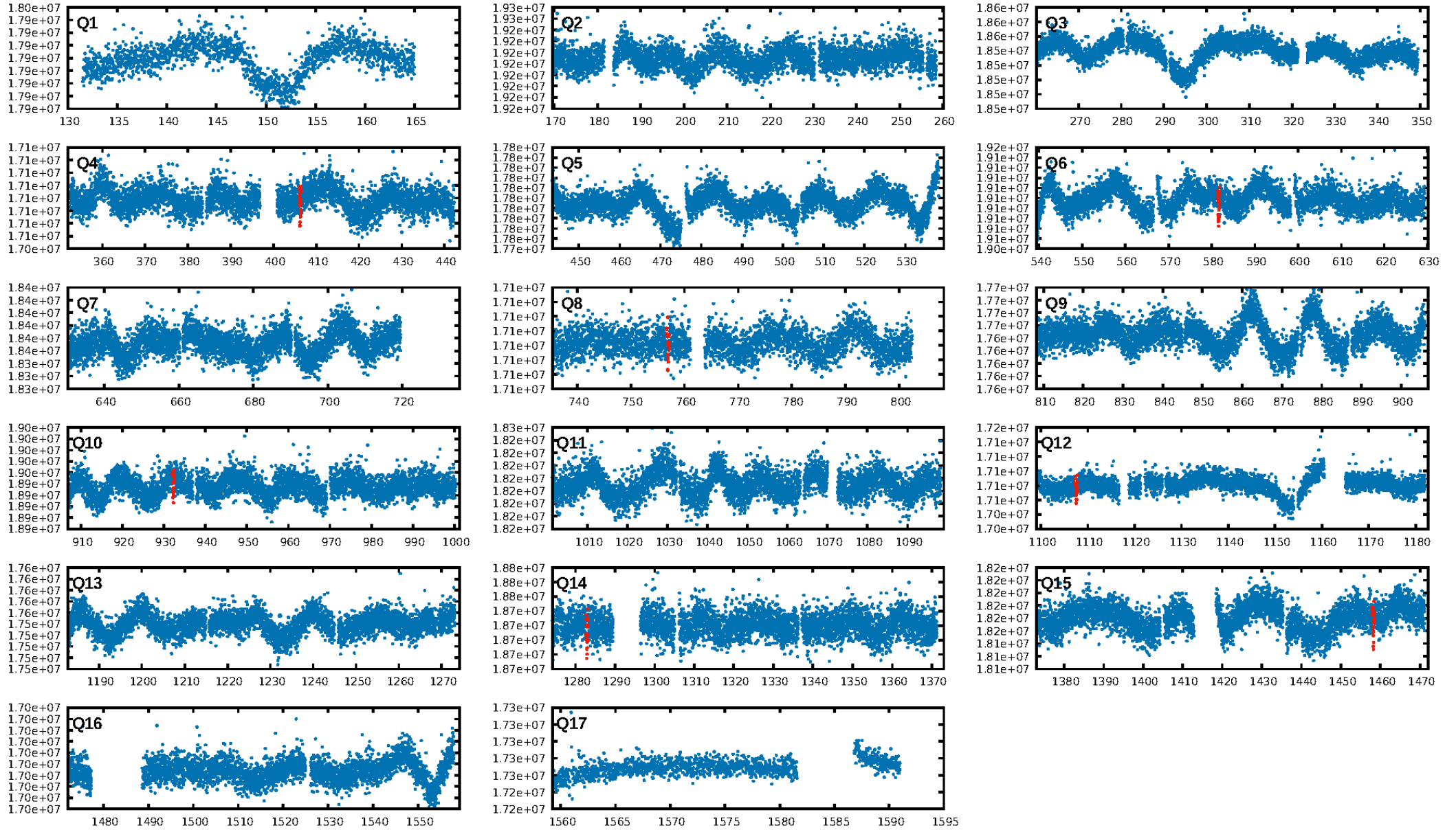
DV Fit Results:

Period = 175.32765 [0.00237] d
Epoch = 230.9372 [0.0107] BKJD
Rp/R* = 0.0485 [0.0714]
a/R* = 77.63 [35.95]
b = 0.99 [0.12]
Seff = 2.69 [1.10]
Teff = 327 [33] K
Rp = 4.92 [7.41] Re
a = 0.6122 [0.1612] AU
Ag = 3748.66 [11150.72] [0.34σ]
Teffp = 3952 [2918] K [1.24σ]

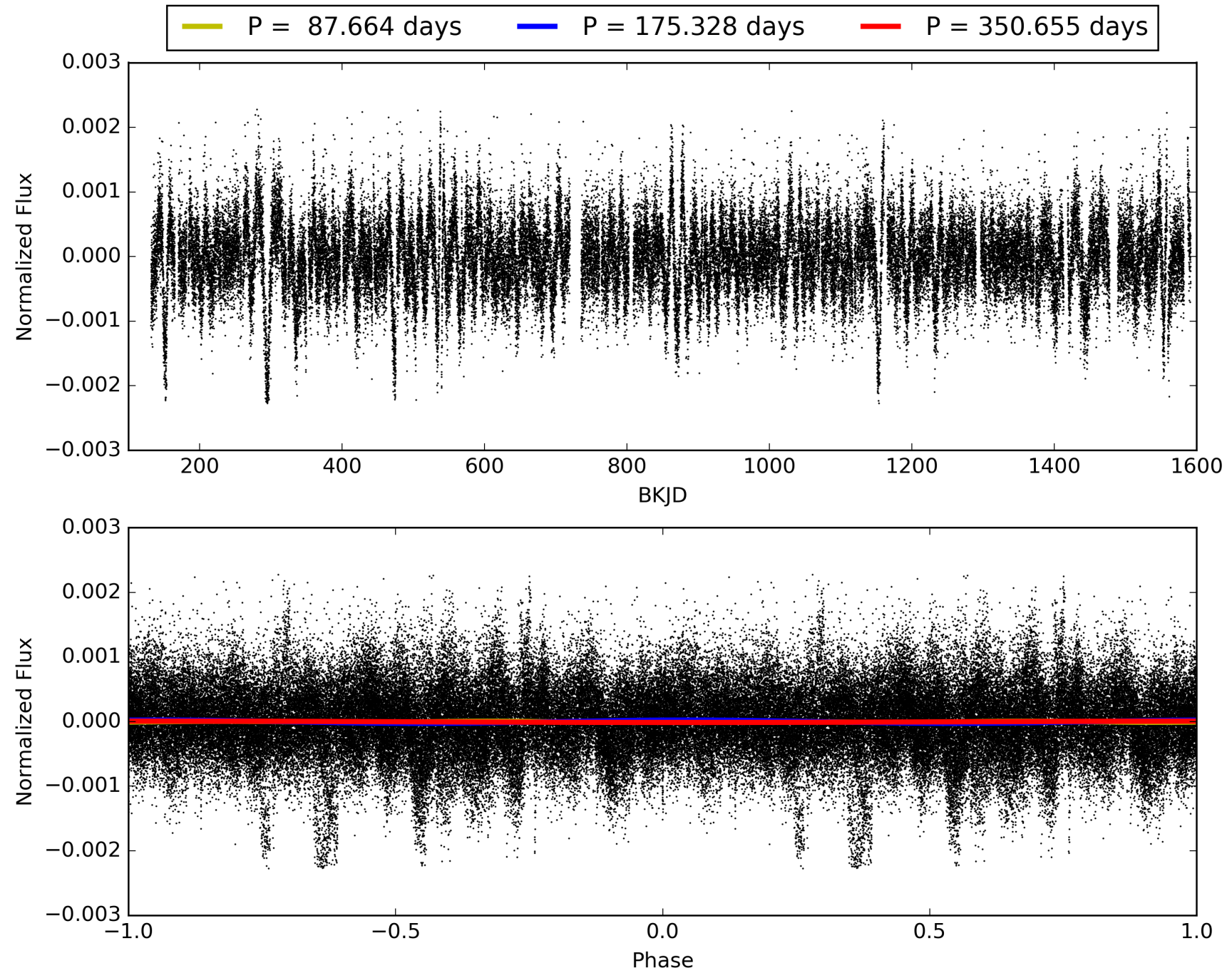
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 68.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.88e-45
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 3.615
Centroid-sig: 31.4%
Centroid-so: 0.908 arcsec [0.95σ]
OotOffset-rm: 0.654 arcsec [1.72σ]
KicOffset-rm: 0.599 arcsec [1.67σ]
OotOffset-st: 3/1/3/0 [7]
KicOffset-st: 3/1/3/0 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [7/7]

TCE 006948480-01, PDC Light Curves

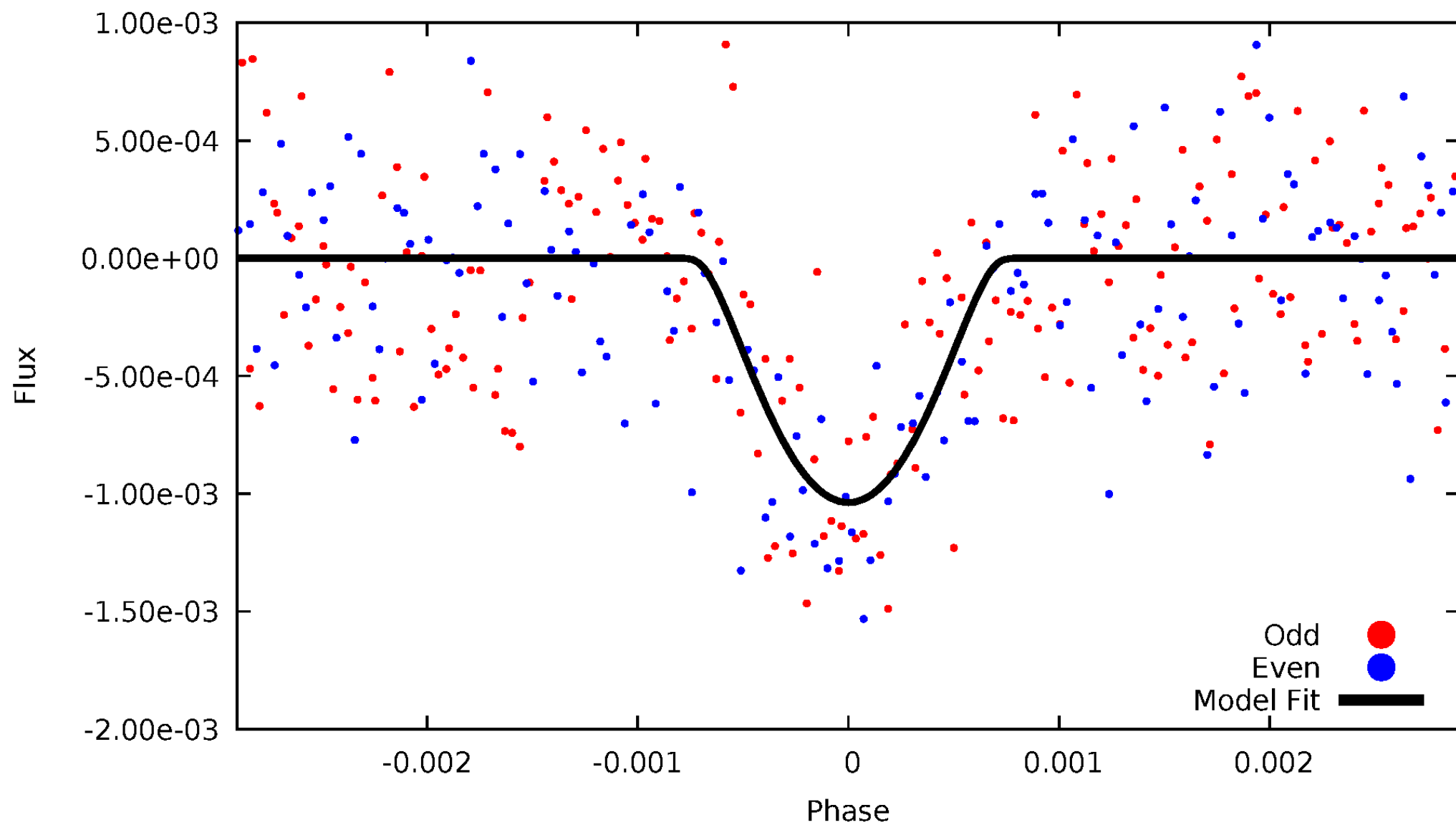


TCE 006948480-01



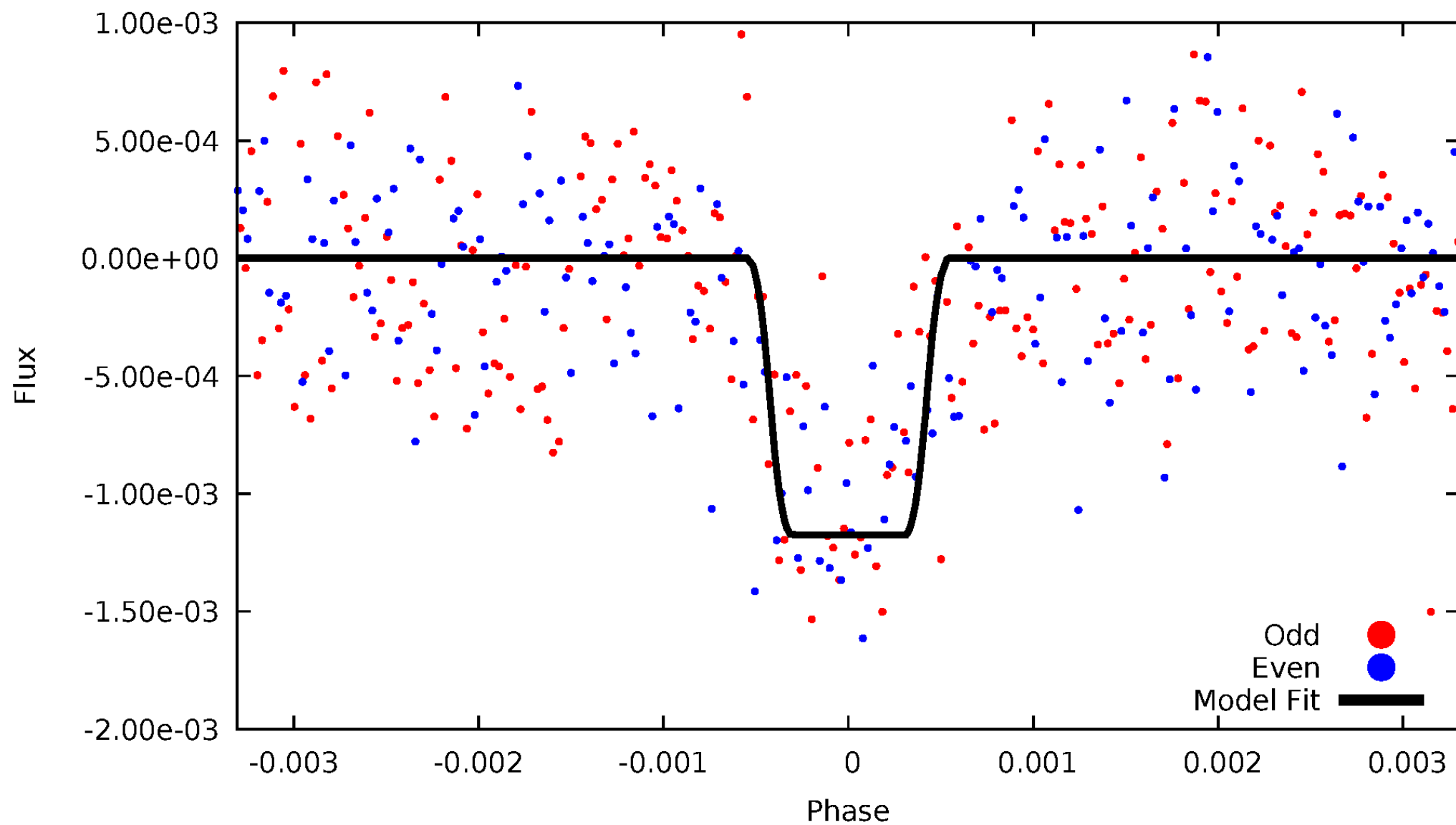
DV Odd/Even

TCE 006948480-01

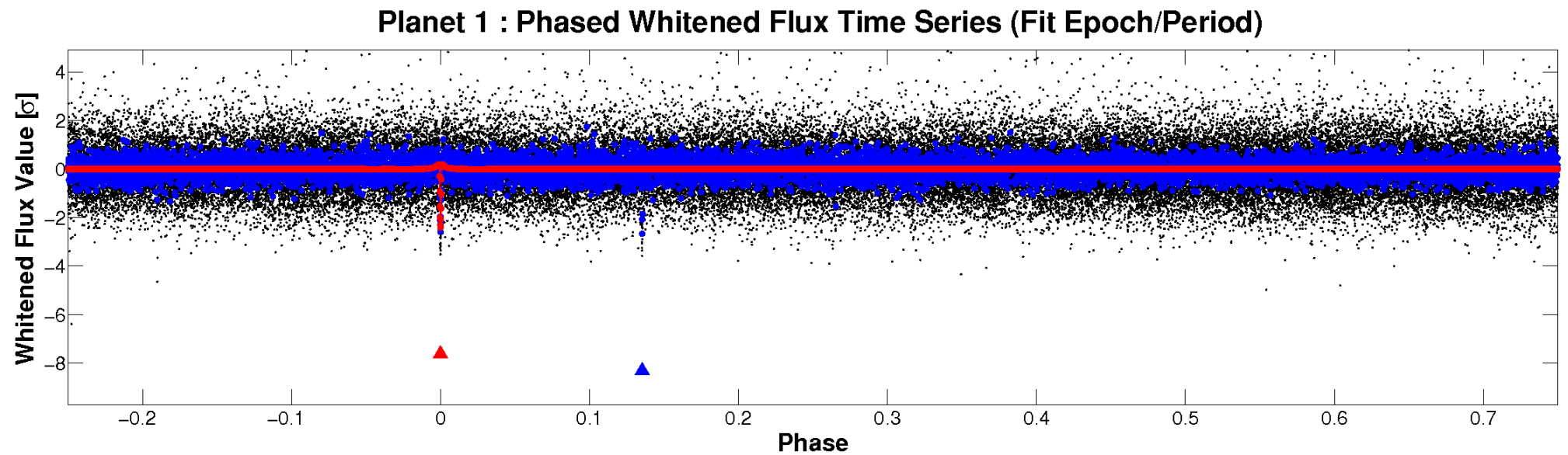
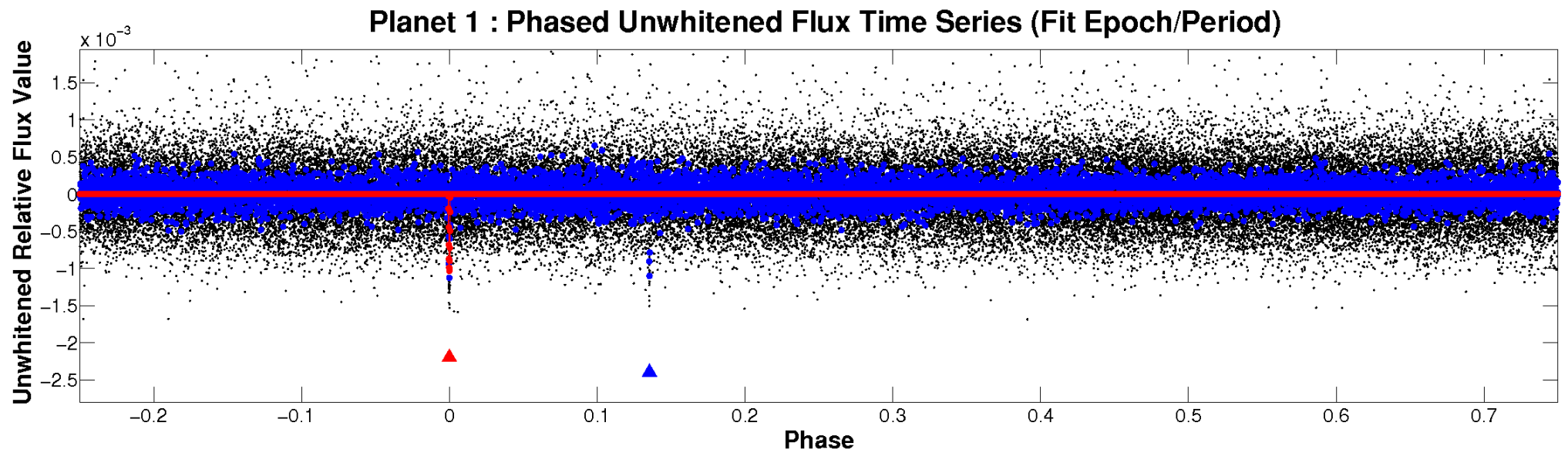


ALT Odd/Even

TCE 006948480-01

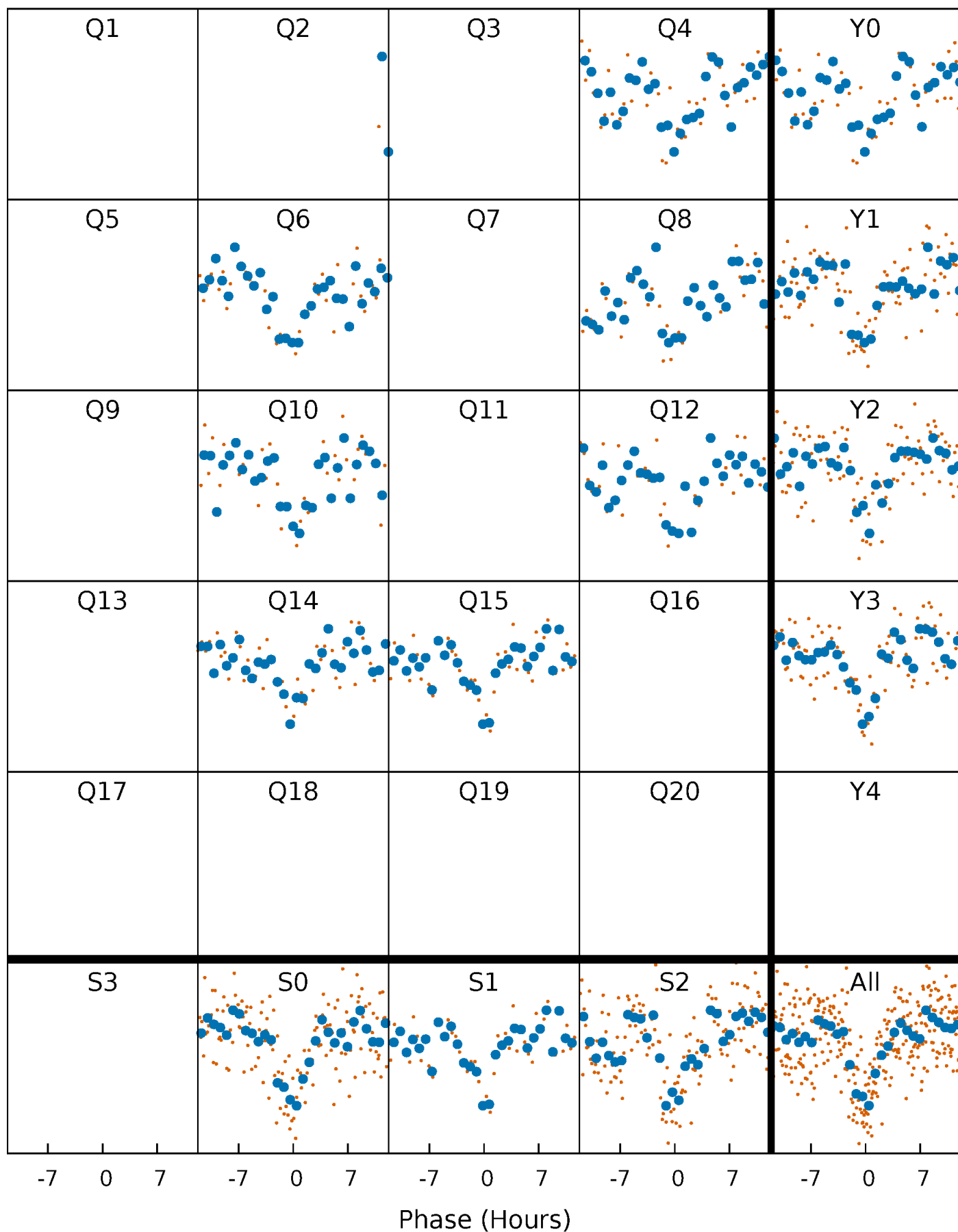


Non-Whitened Vs. Whitened Light Curve



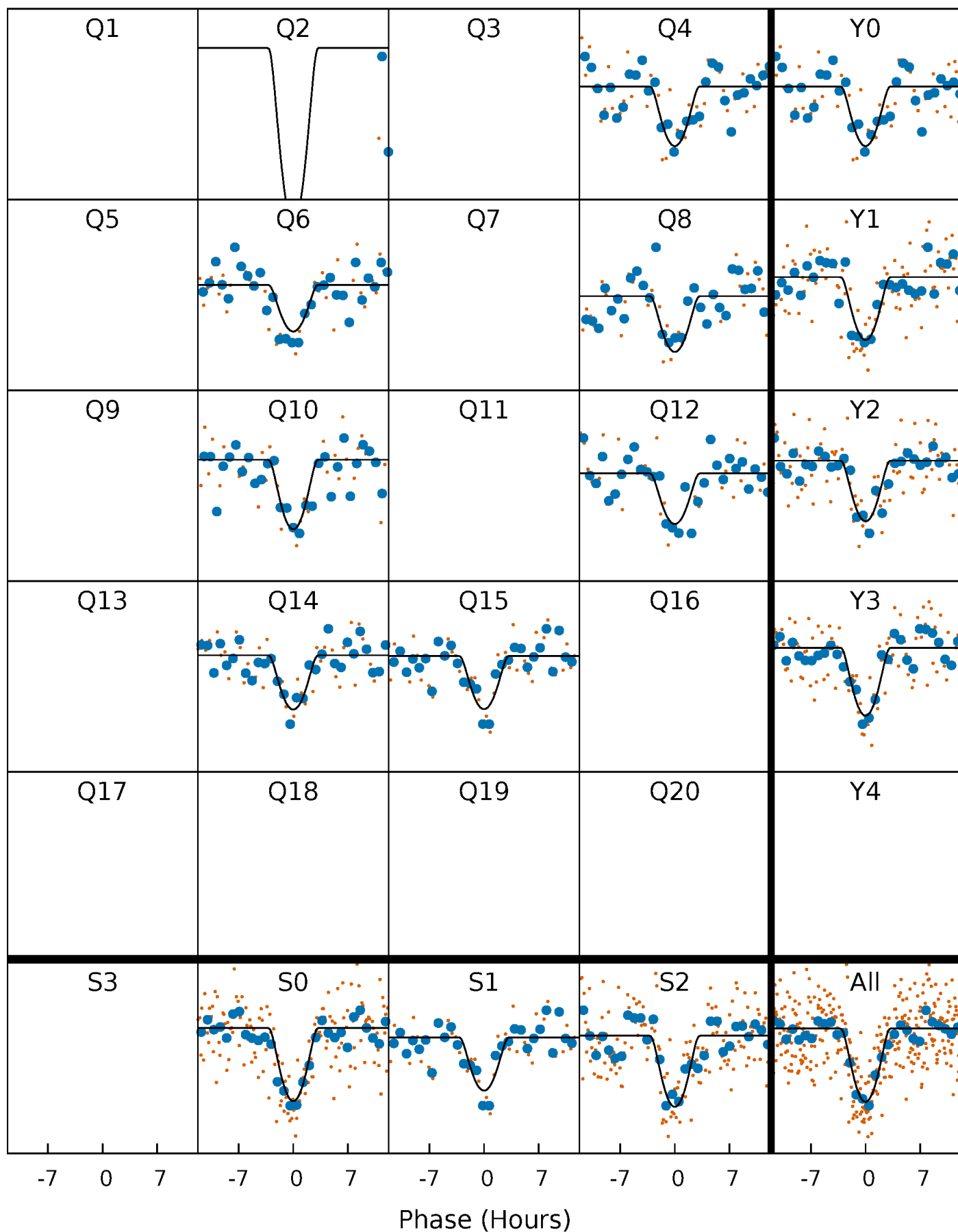
PDC Quarter-Phased Transit Curves

TCE 006948480-01 P=175.327645 Days $T_0=230.937228$ (BKJD)



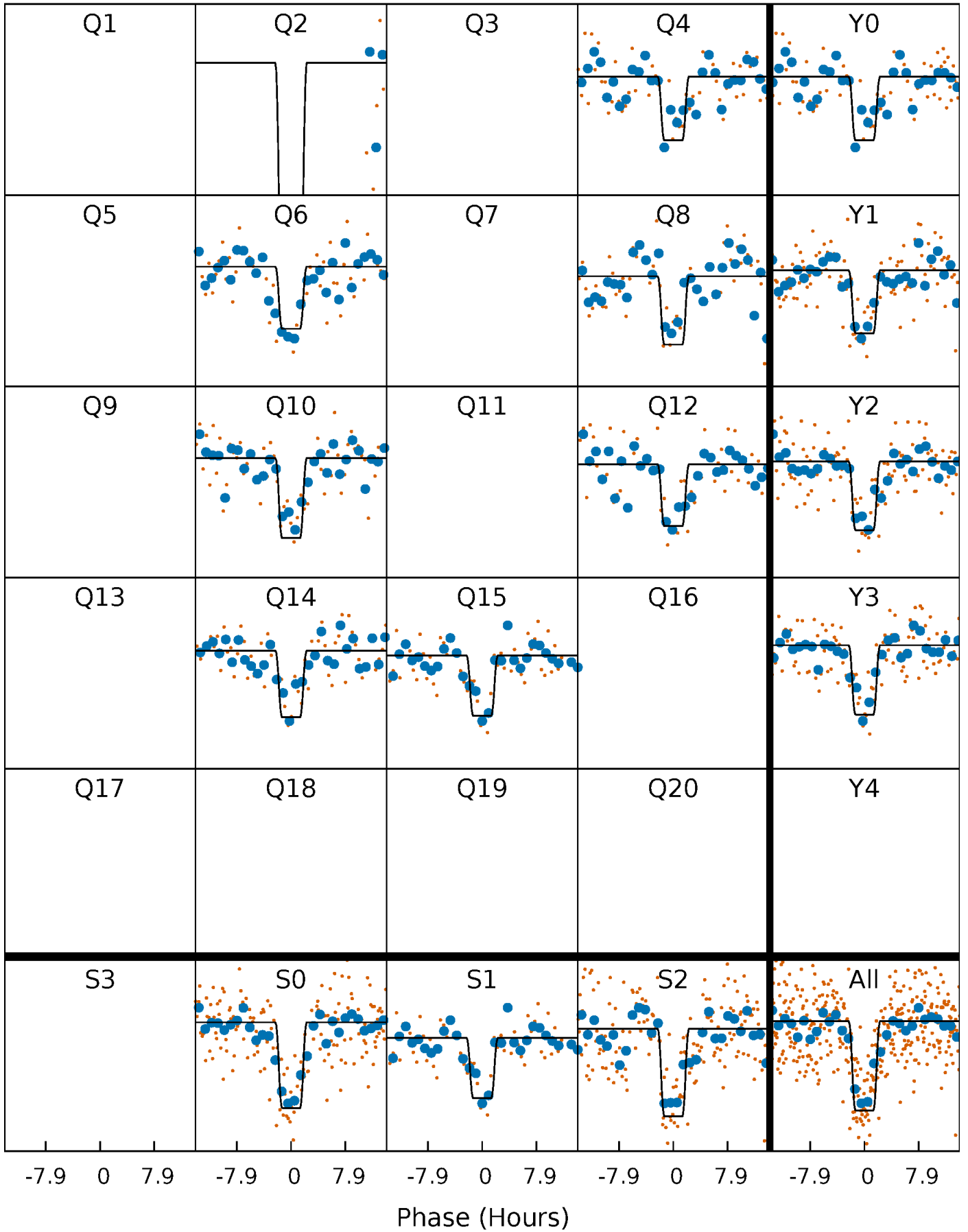
DV Quarter-Phased Transit Curves

TCE 006948480-01 P=175.327645 Days $T_0=230.937228$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

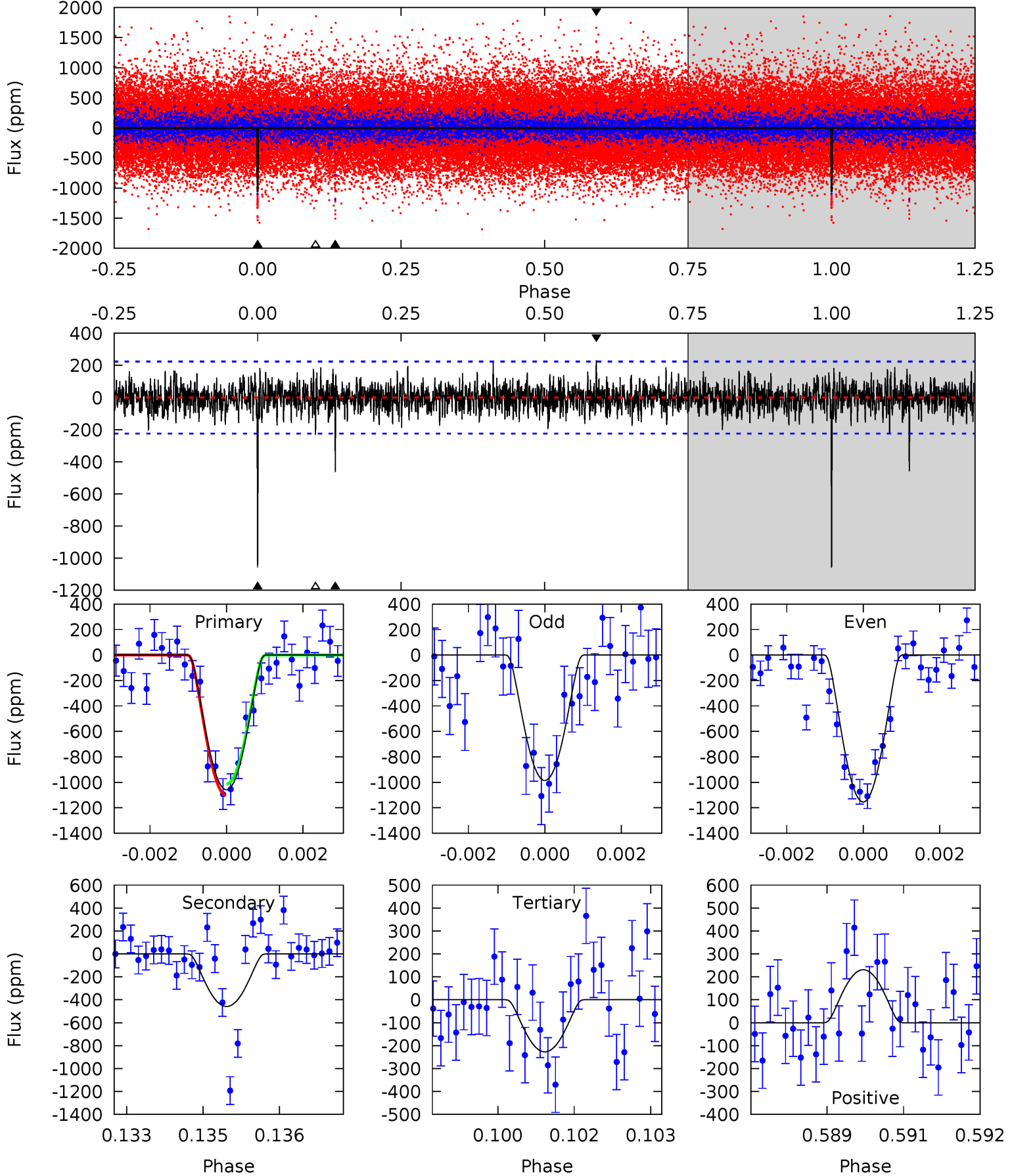
TCE 006948480-01 P=175.327992 Days $T_0=230.935592$ (BKJD)



DV Model-Shift Uniqueness Test

006948480-01, $P = 175.327645$ Days, $E = 55.609583$ Days

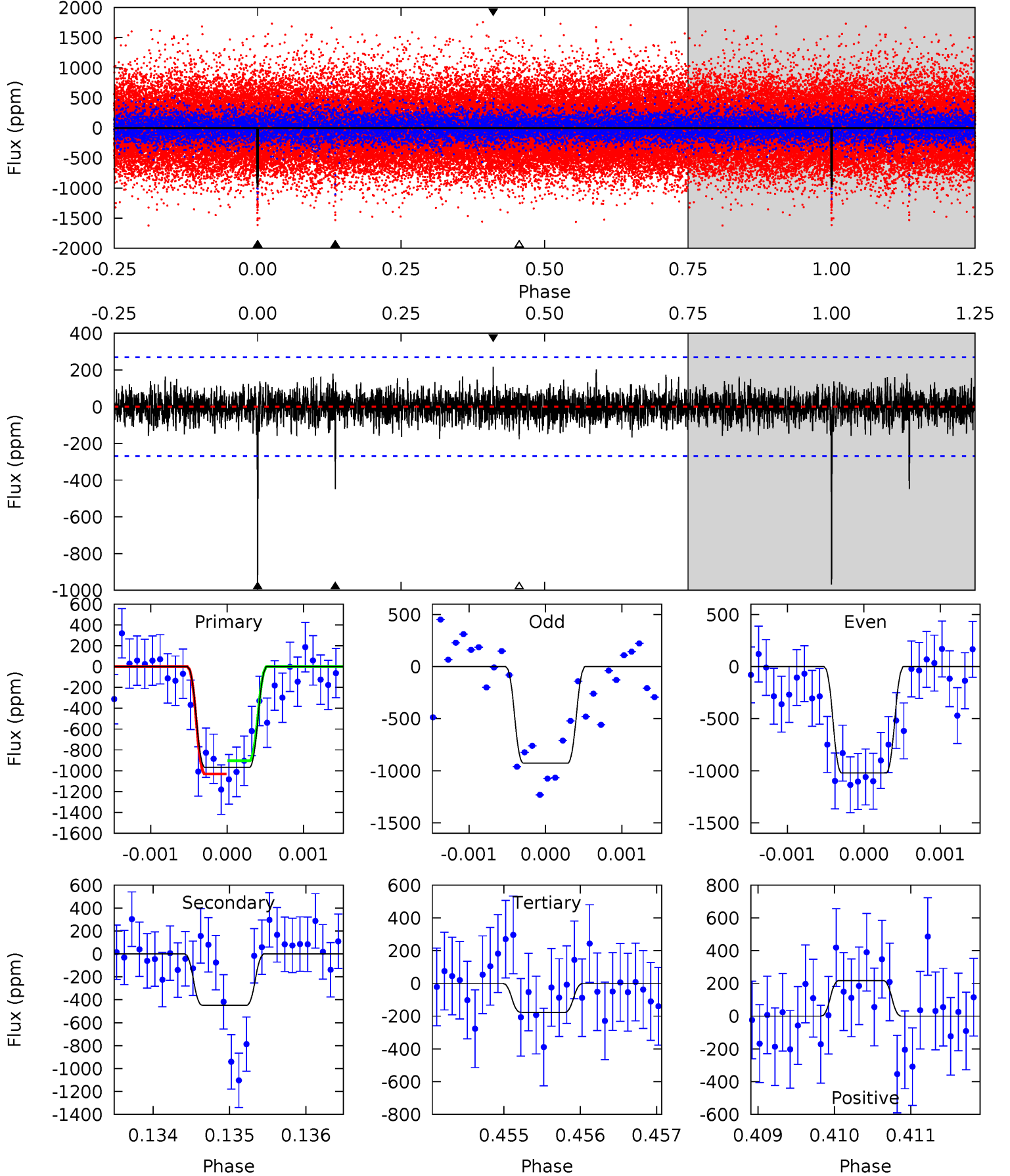
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	11.0	5.45	5.54	5.38	3.17	1.47	19.9	19.9	5.56	5.46	2.01	1.00	0.18	1.07



Alt Model-Shift Uniqueness Test

006948480-01, $P = 175.327992$ Days, $E = 55.607600$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	9.04	3.56	4.38	5.44	3.28	1.05	16.0	15.1	5.47	4.66	0.95	1.04	0.18	1.29



Stellar Parameters For KIC 006948480

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6008^{+168}_{-210}	$4.499^{+0.052}_{-0.208}$	$-0.200^{+0.300}_{-0.300}$	$0.930^{+0.292}_{-0.097}$	$0.995^{+0.131}_{-0.131}$	$1.742^{+0.485}_{-0.905}$
	+3%/-3%	+1%/-5%	+150%/-150%	+31%/-10%	+13%/-13%	+28%/-52%
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 006948480-01 / KOI 2975.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-459 ± 42	$7.63^{+7.09}_{-5.03}$	464^{+34}_{-23}	3701^{+1912}_{-666}	1588^{+12755}_{-1149}
Alt.	-448 ± 50	$6.81^{+6.71}_{-4.43}$	467^{+32}_{-23}	3812^{+1960}_{-729}	1911^{+13653}_{-1427}

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

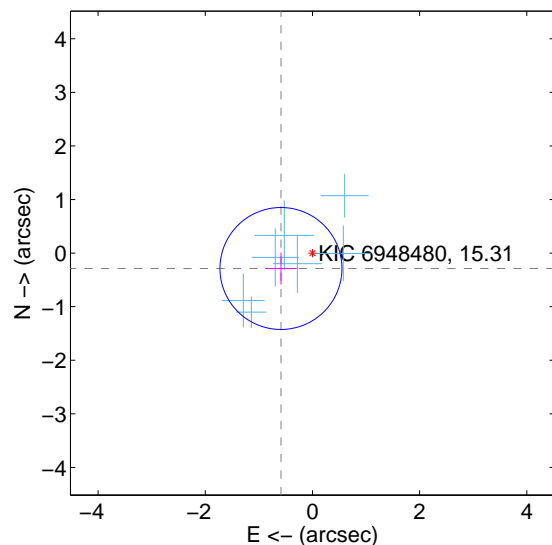
Supplemental centroid analysis for 006948480-01. Kepler magnitude: 15.31. Transit SNR 14.89

There are 7 quarters with good PRF difference image offsets

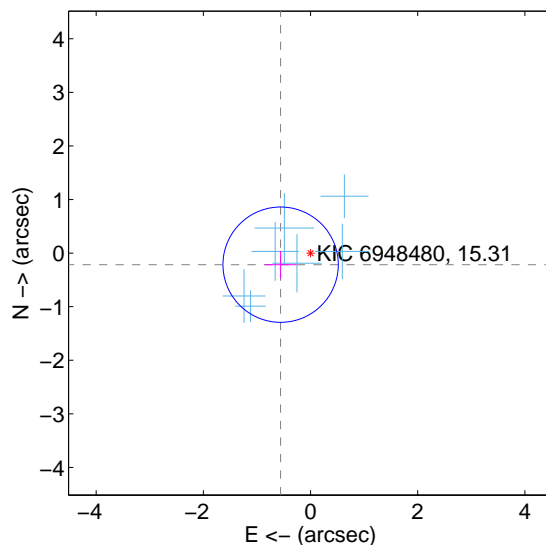
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.654 ± 0.379	1.72	0.588 ± 0.294	-0.287 ± 0.299
PRF-fit source offset from KIC position	0.599 ± 0.359	1.67	0.558 ± 0.299	-0.216 ± 0.257
photometric centroid source offset	0.91 ± 0.95	0.95	-0.72 ± 0.95	-0.56 ± 0.96

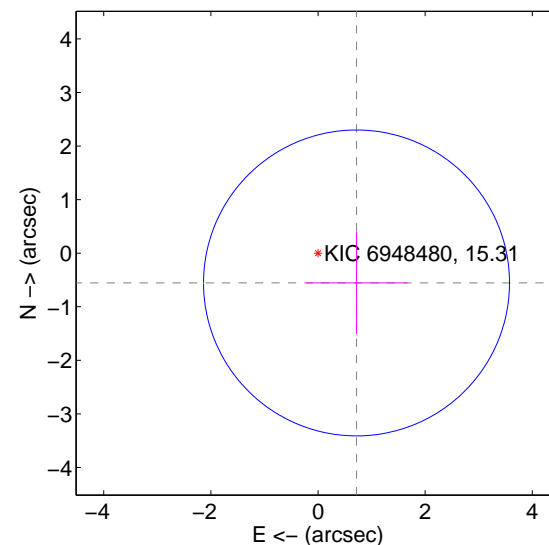
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

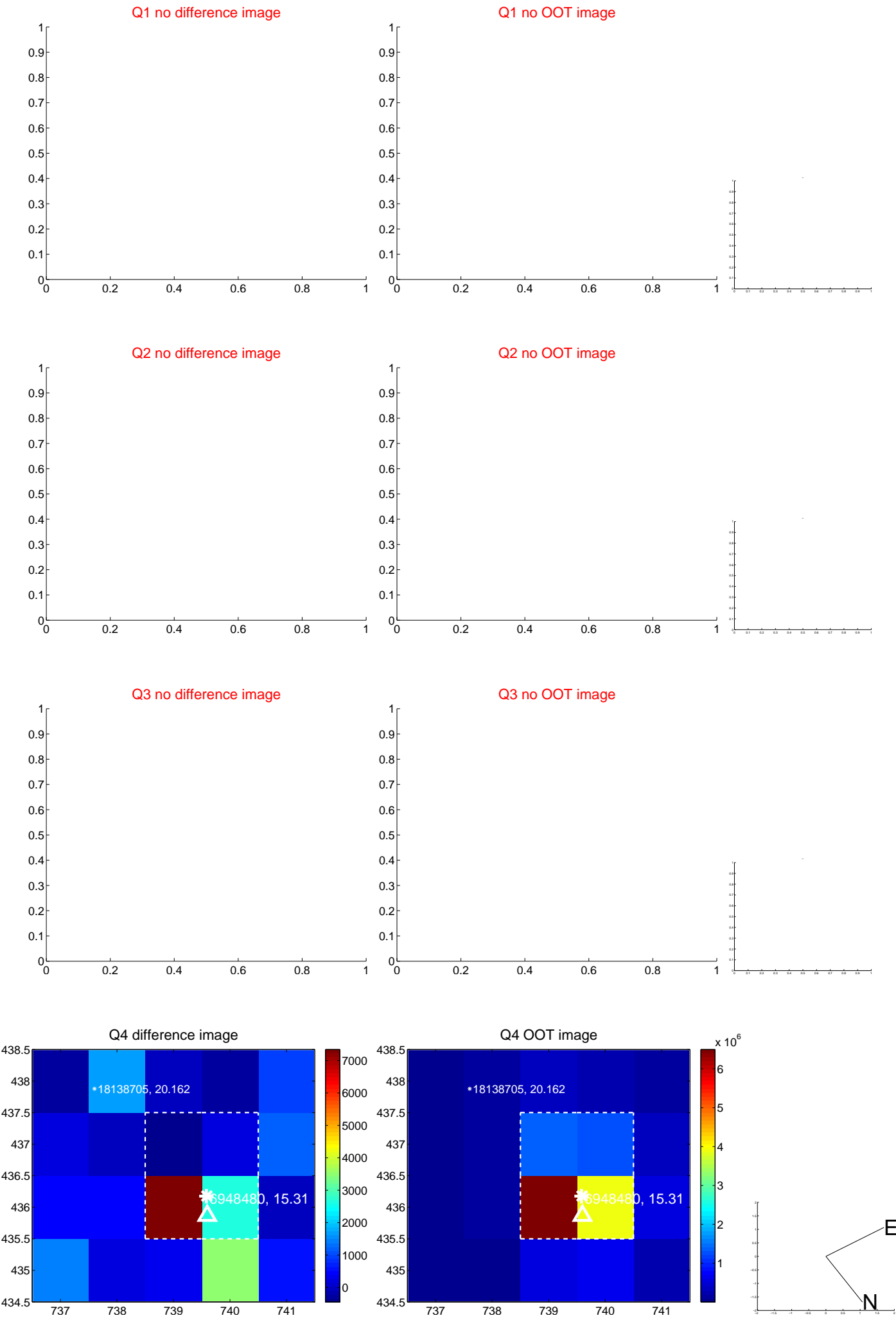


offset from photometric centroids



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 ×: 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.

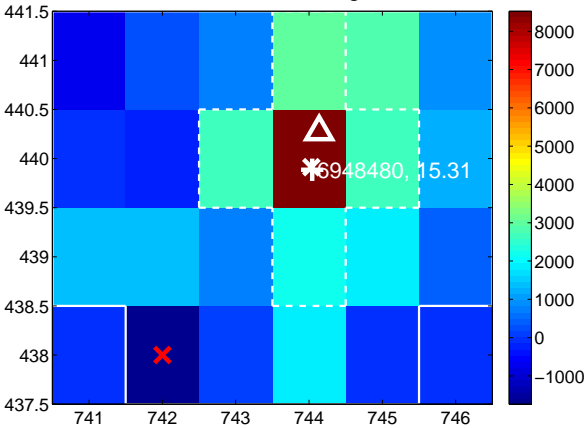
Q5 no difference image



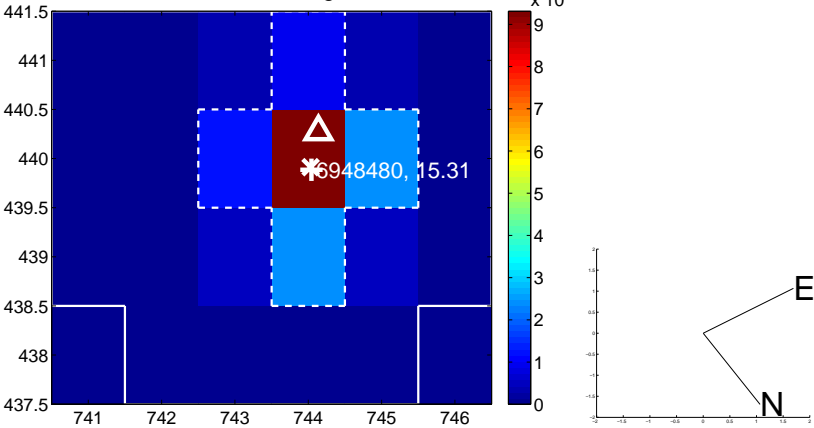
Q5 no OOT image



Q6 difference image



Q6 OOT image



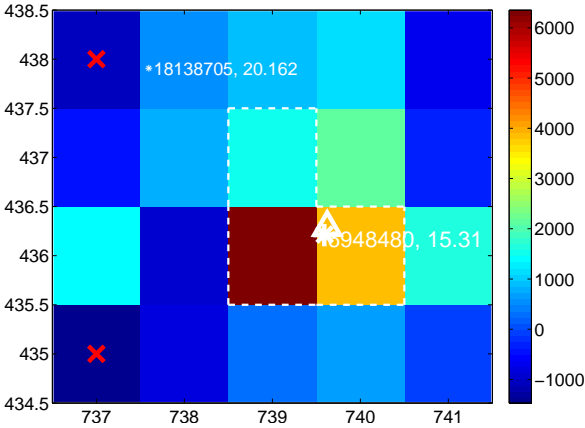
Q7 no difference image



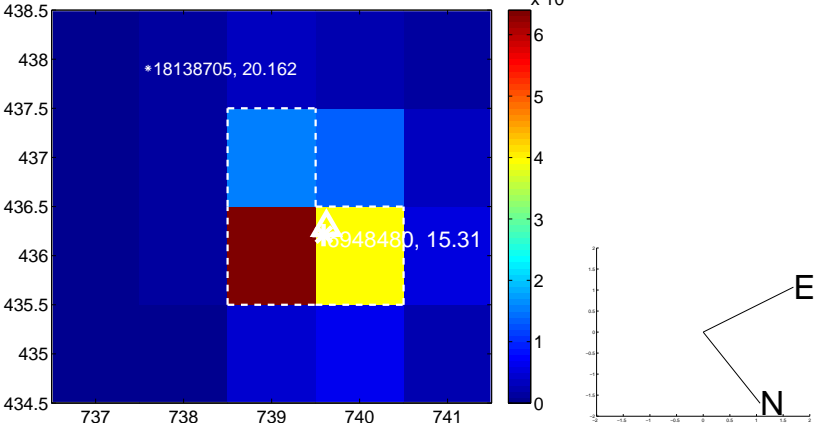
Q7 no OOT image



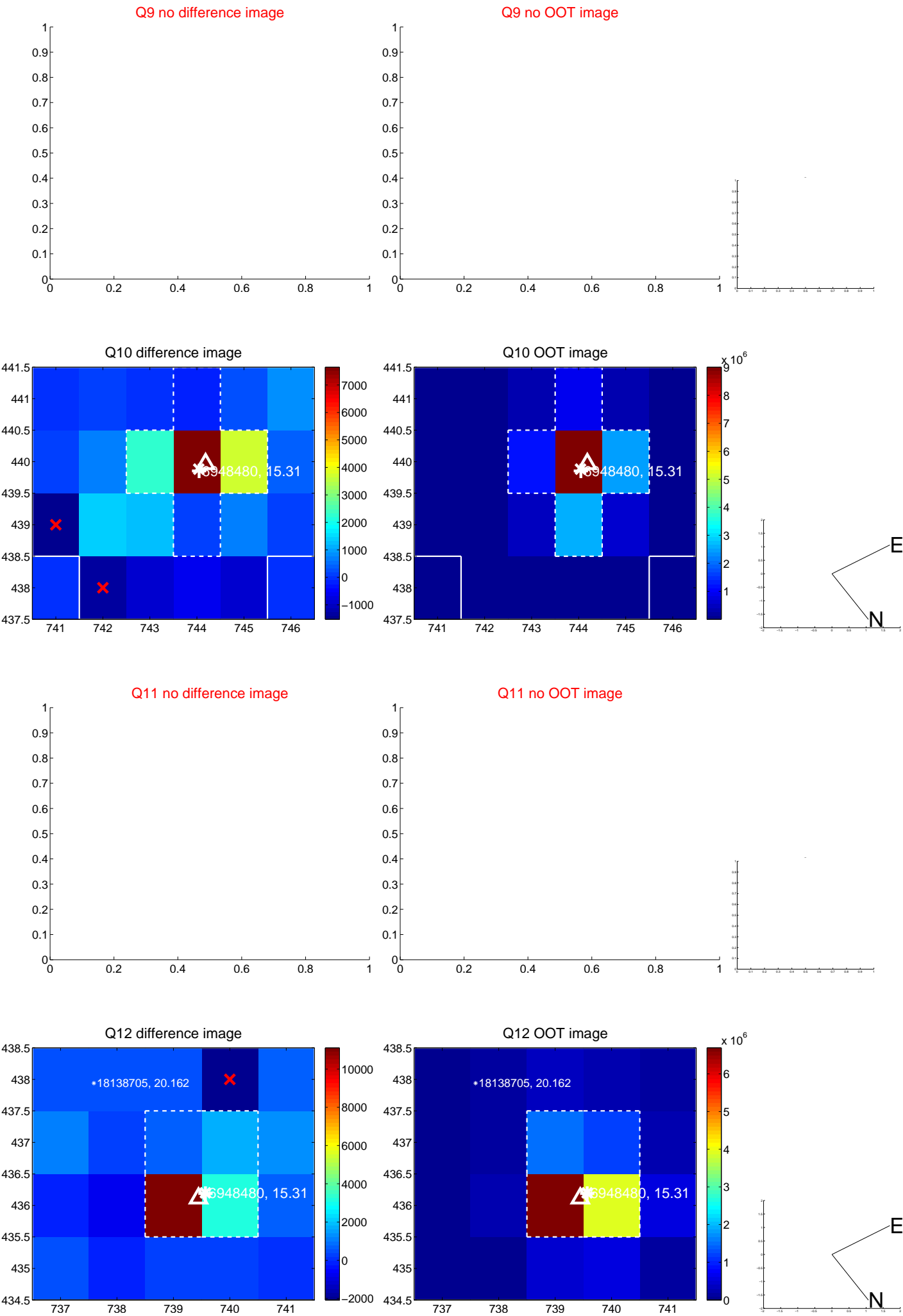
Q8 difference image



Q8 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.

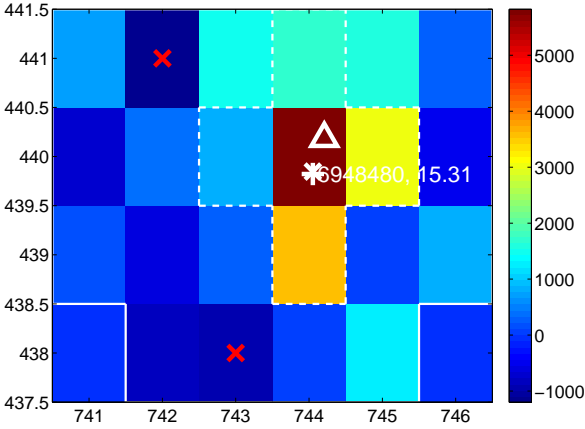
Q13 no difference image



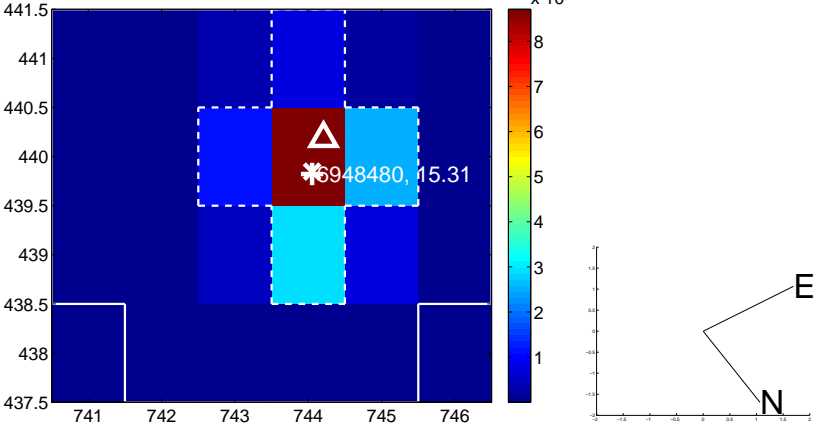
Q13 no OOT image



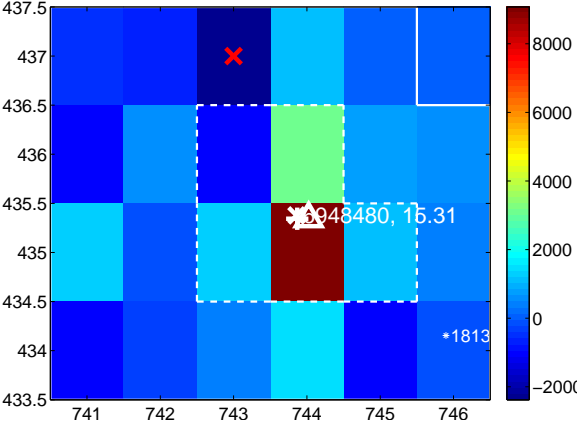
Q14 difference image



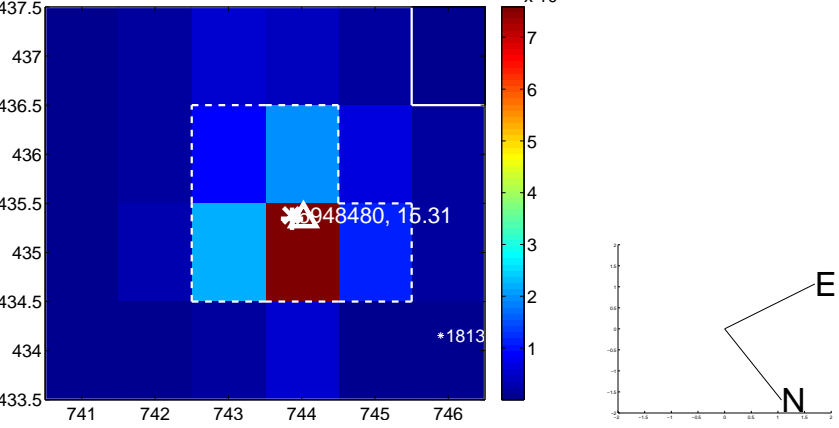
Q14 OOT image



Q15 difference image



Q15 OOT image



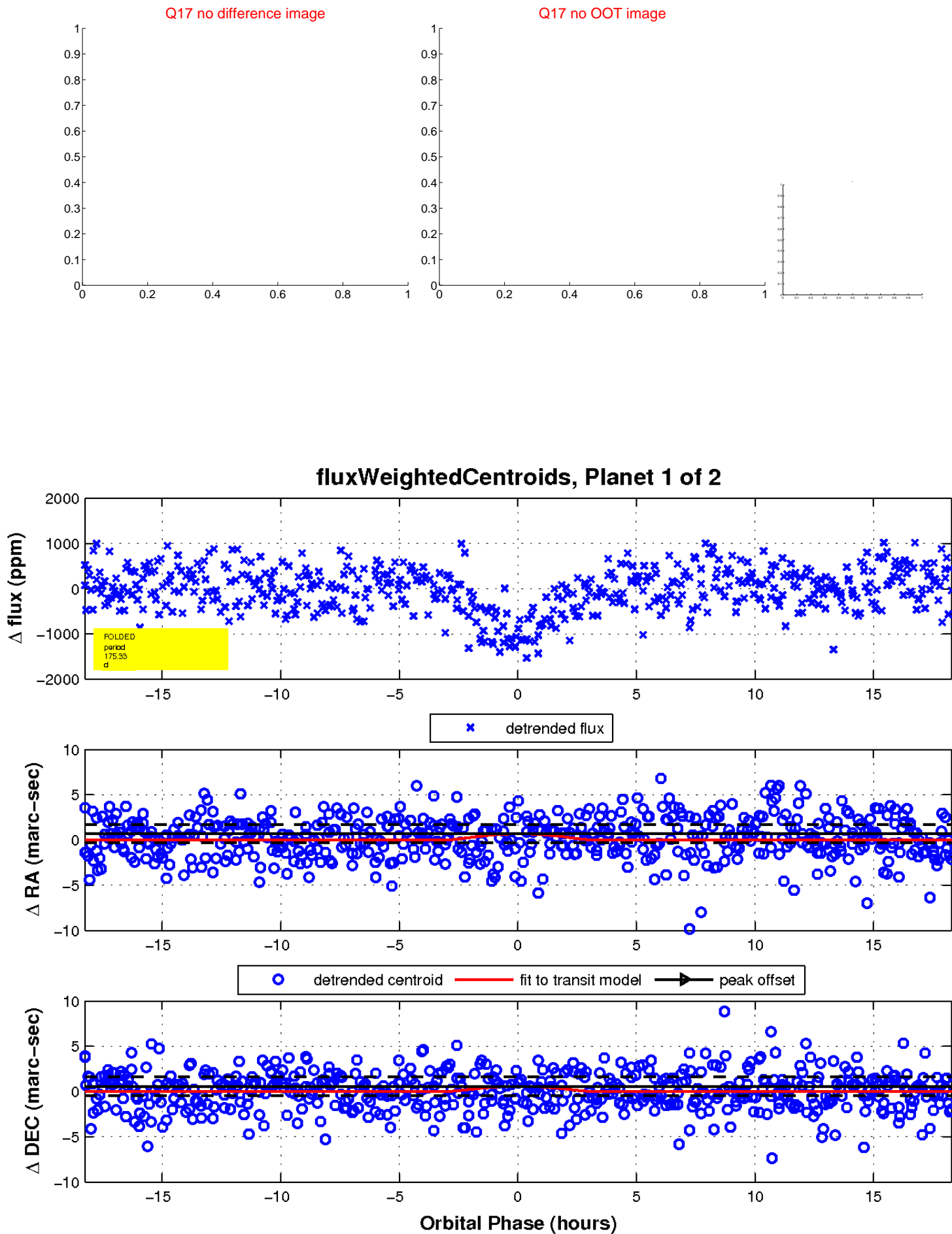
Q16 no difference image



Q16 no OOT image

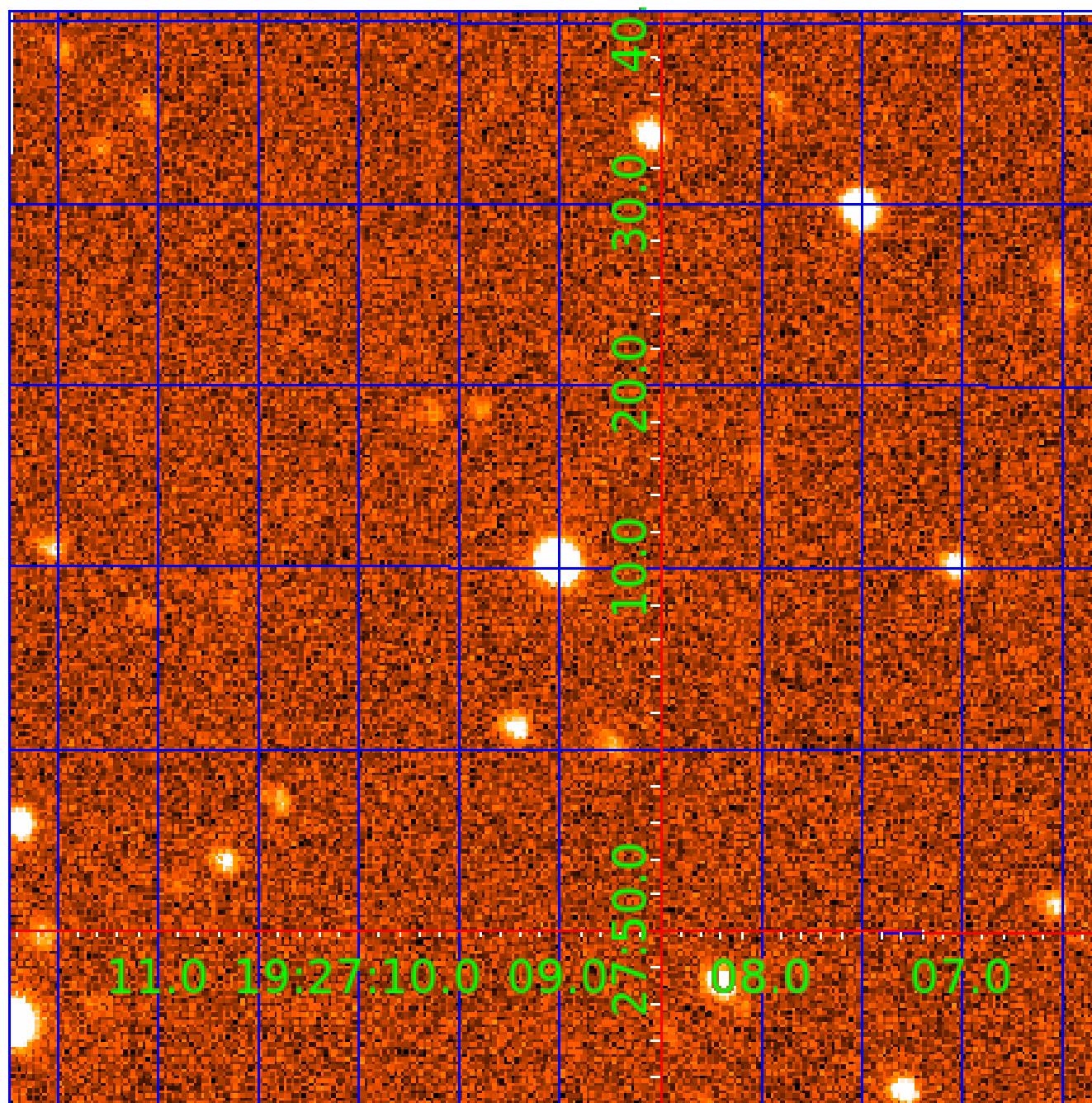


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006948480

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})
006948480-01	OBS	2975.01	175.327645	230.937228	1037.4	6.104	14.5	14.9	0.93	6008	4.92	2.69
006948480-02	OBS	No	175.327920	254.675964	1221.8	2.448	8.7	11.2	0.93	6008	5.81	2.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006948480-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006948480-02	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.

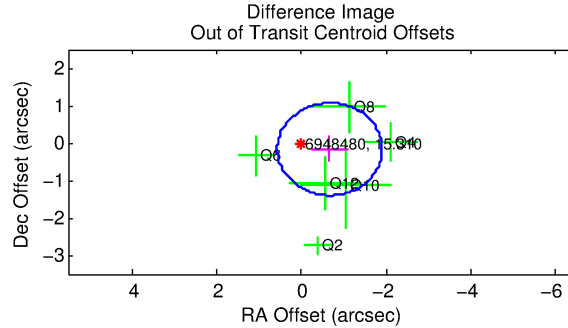
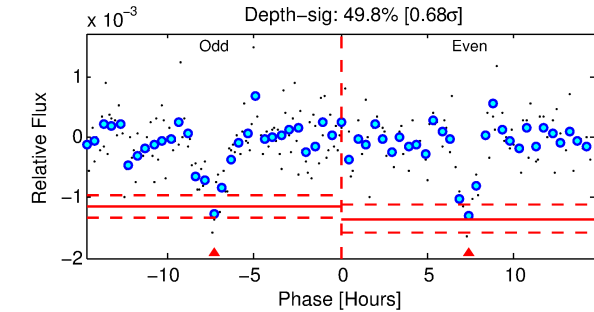
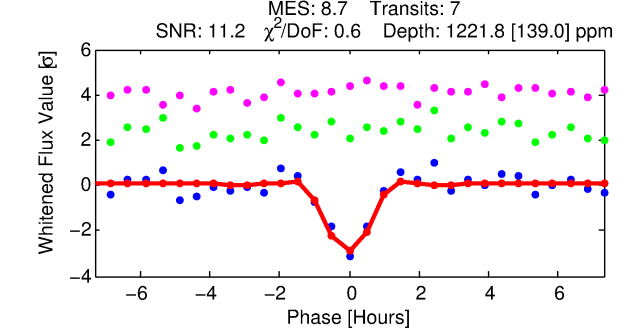
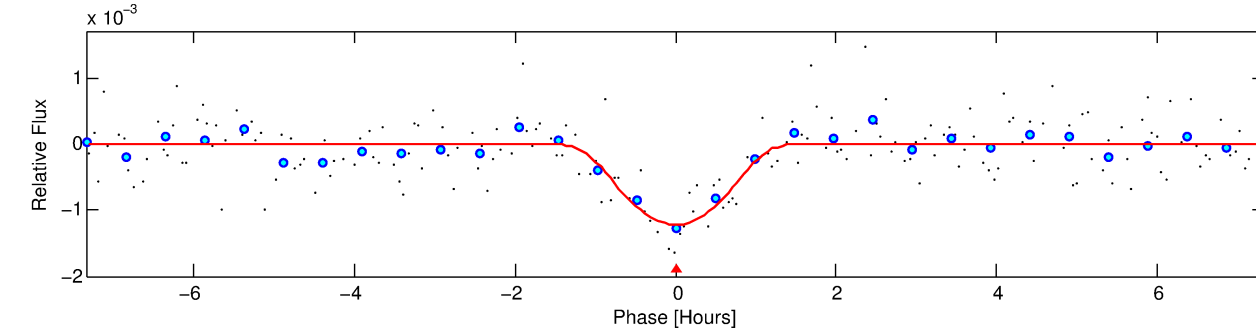
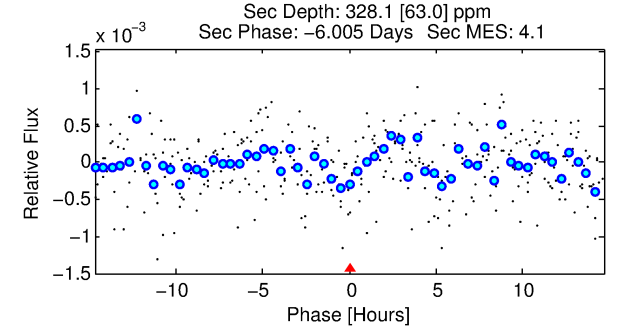
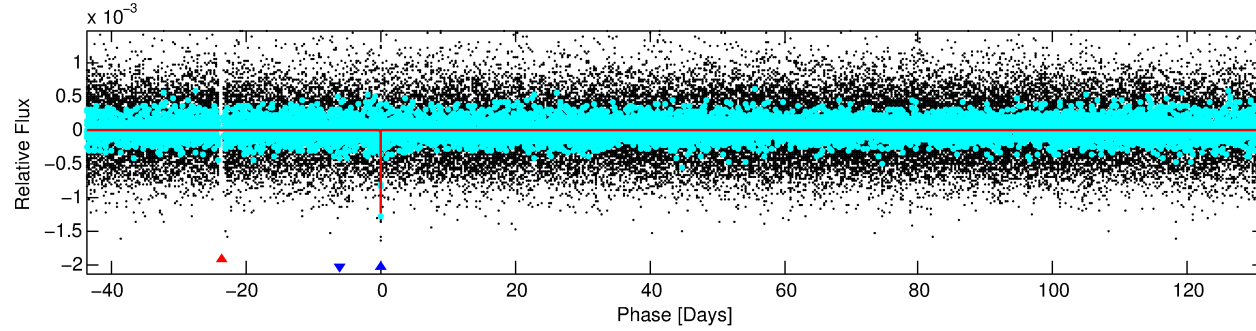
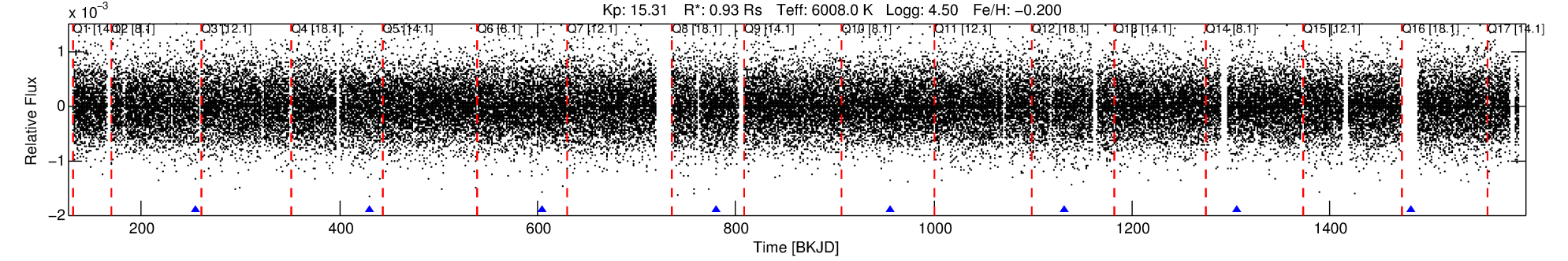
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006948480-02

No Significant Match Found

DV One-Page Summary

KIC: 6948480 Candidate: 2 of 2 Period: 175.328 d
KOI: K02975 Corr: No Ephemeris Match



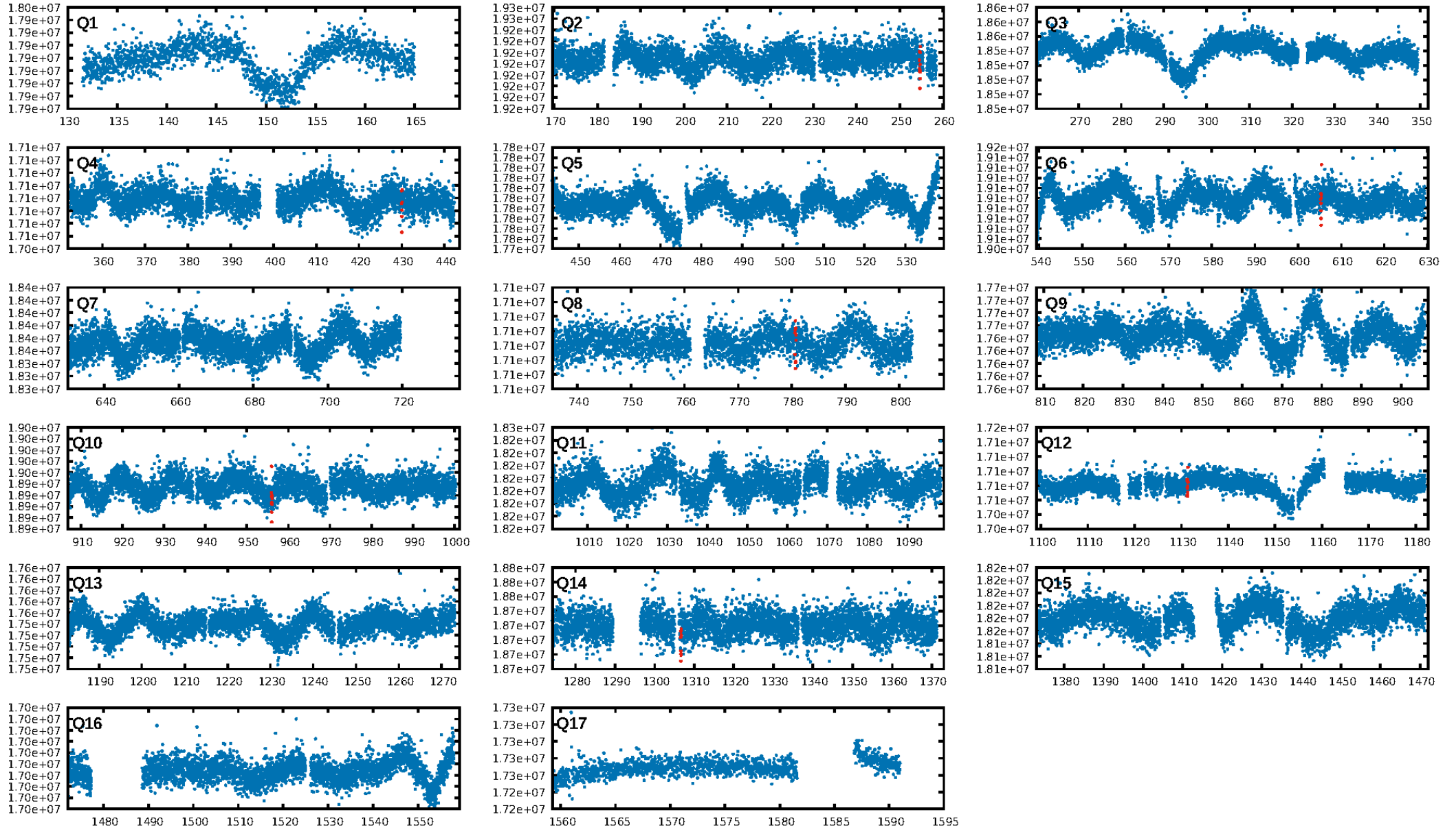
DV Fit Results:

Period = 175.32792 [0.00124] d
Epoch = 254.6760 [0.0046] BKJD
Rp/R* = 0.0573 [0.1930]
a/R* = 198.18 [176.67]
b = 0.99 [0.30]
Seff = 2.69 [1.10]
Teq = 327 [33] K
Rp = 5.81 [19.67] Re
a = 0.6122 [0.1612] AU
Ag = 2003.25 [13529.59] [0.15 σ]
Teffp = 3379 [5697] K [0.54 σ]

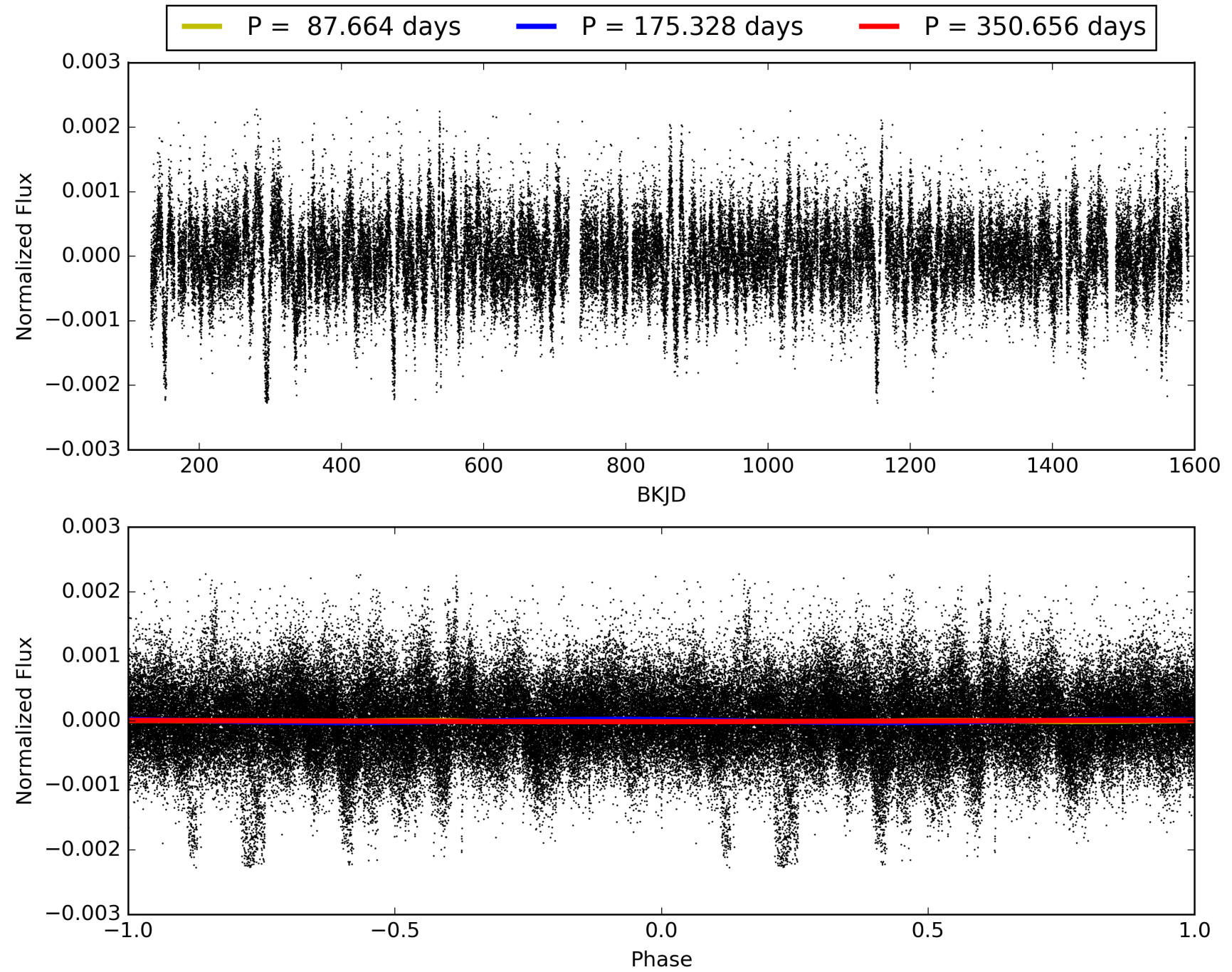
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.66e-18
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 18.86
Centroid-sig: 50.7%
Centroid-so: 0.893 arcsec [0.67 σ]
OotOffset-rm: 0.691 arcsec [1.68 σ]
OotOffset-st: 3/0/3/0 [6]
KicOffset-rm: 0.693 arcsec [1.63 σ]
KicOffset-st: 3/0/3/0 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 1.00 [6/6]

TCE 006948480-02, PDC Light Curves

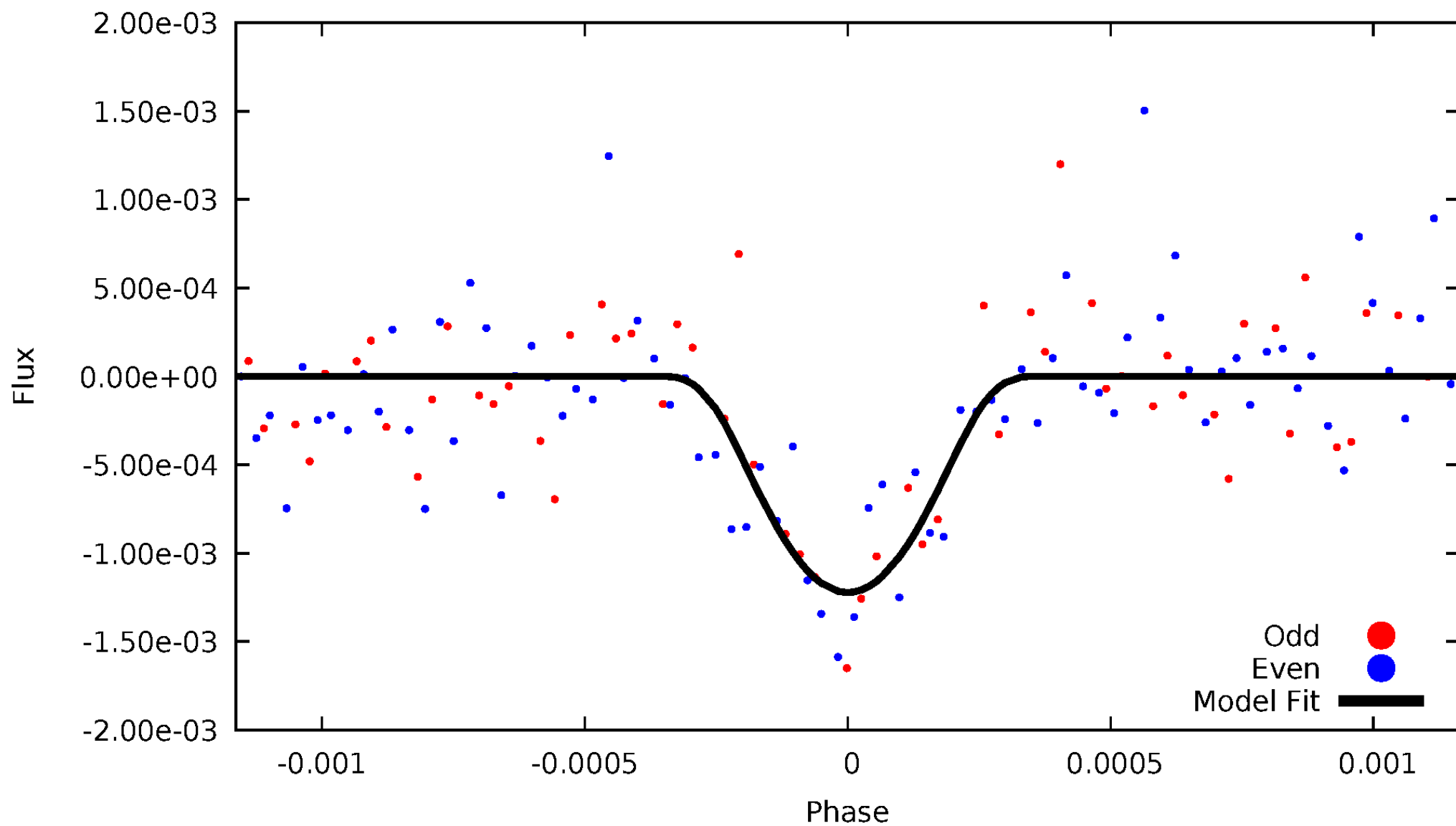


TCE 006948480-02



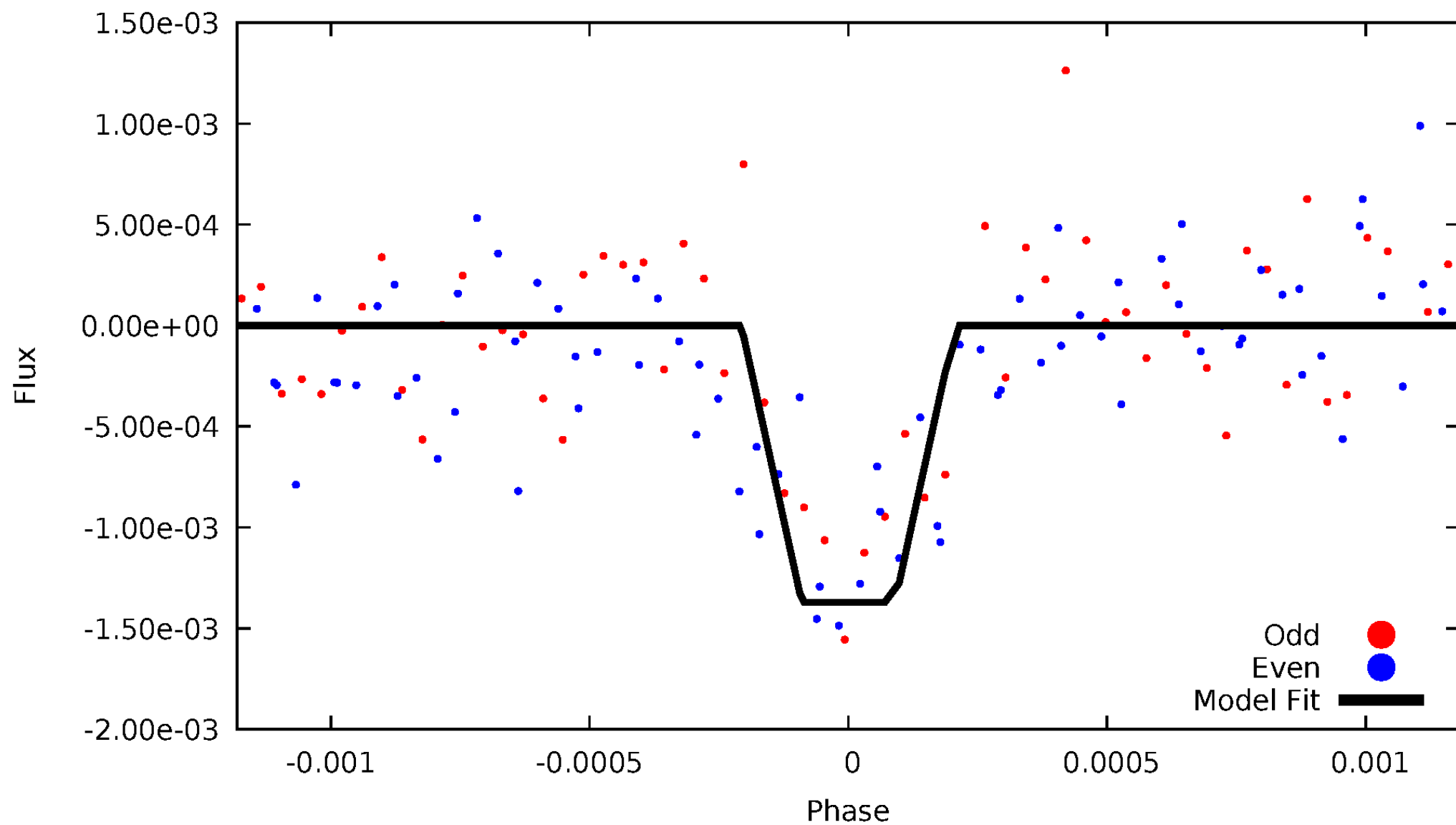
DV Odd/Even

TCE 006948480-02



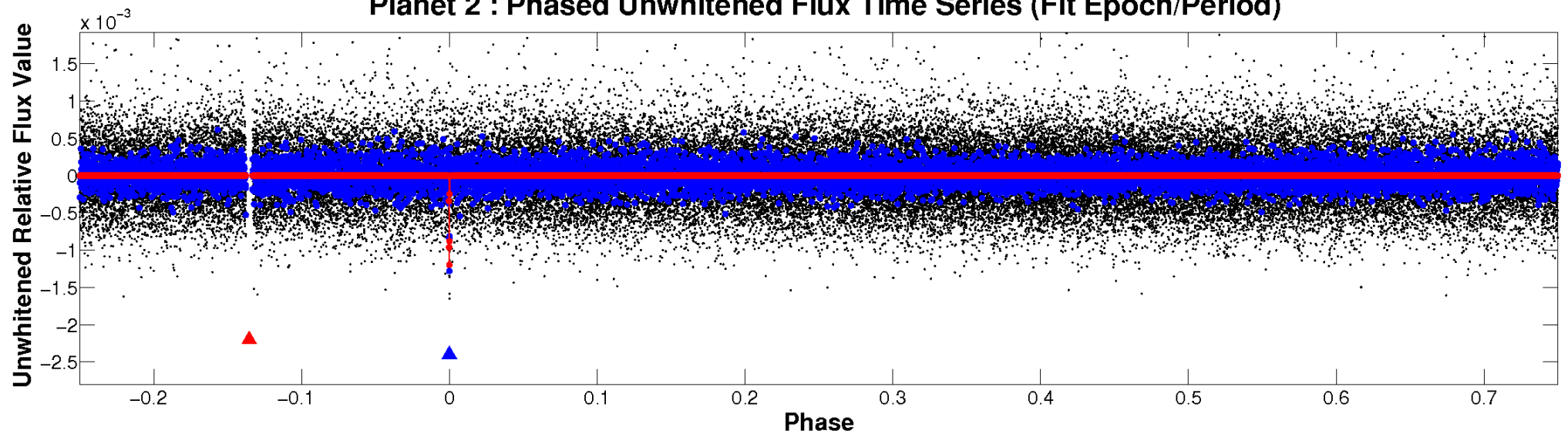
ALT Odd/Even

TCE 006948480-02

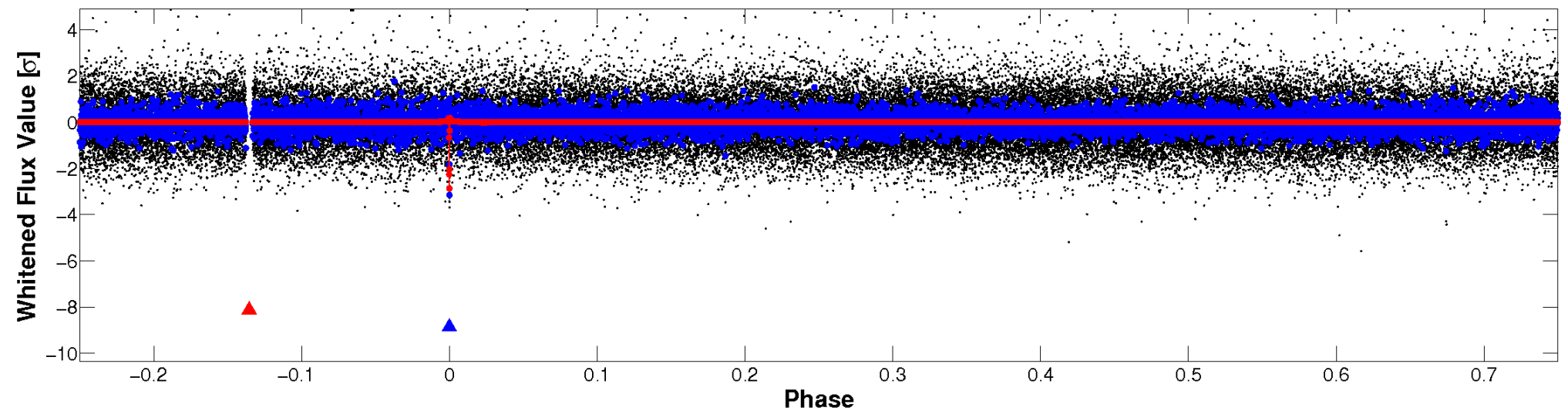


Non-Whitened Vs. Whitened Light Curve

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

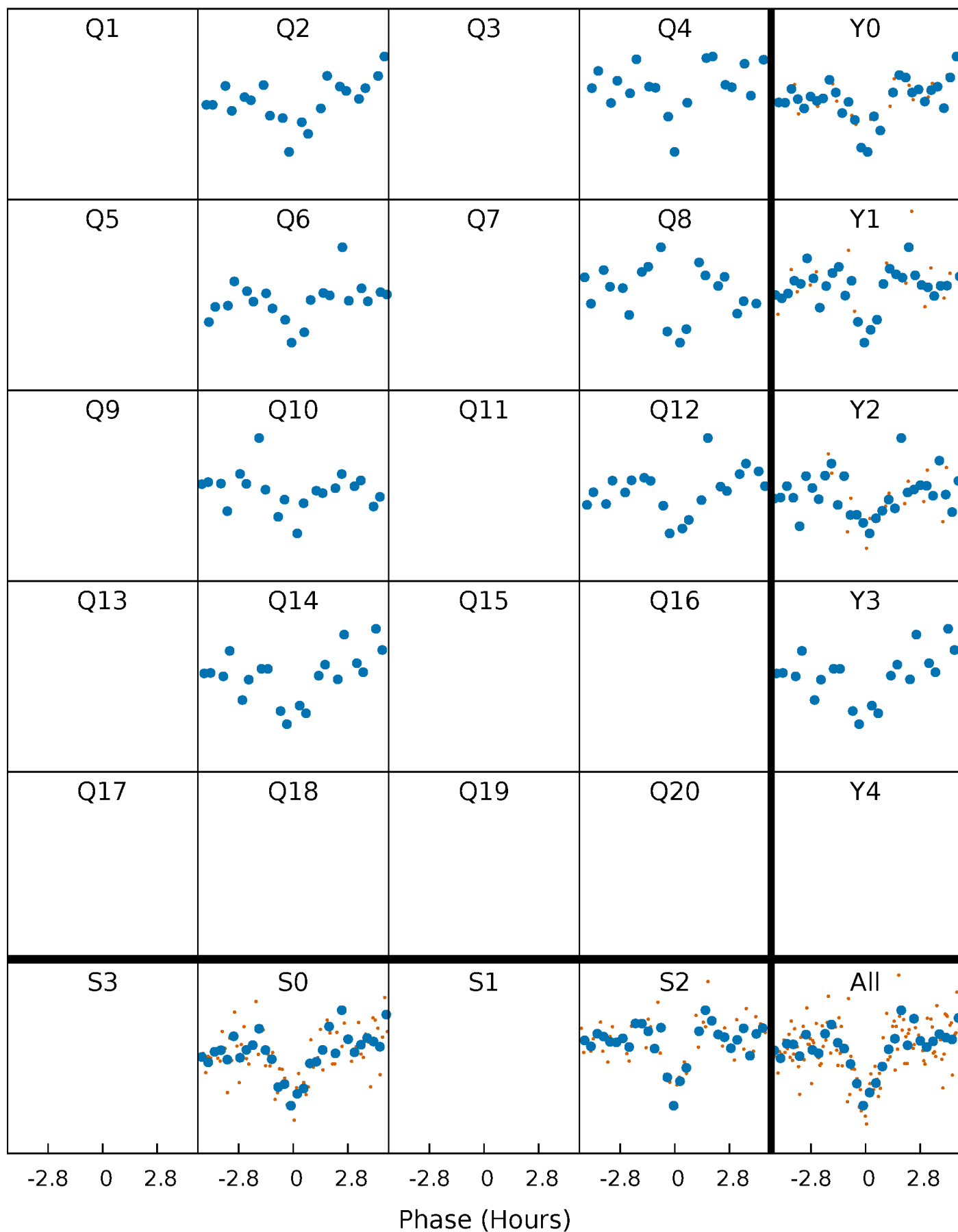


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



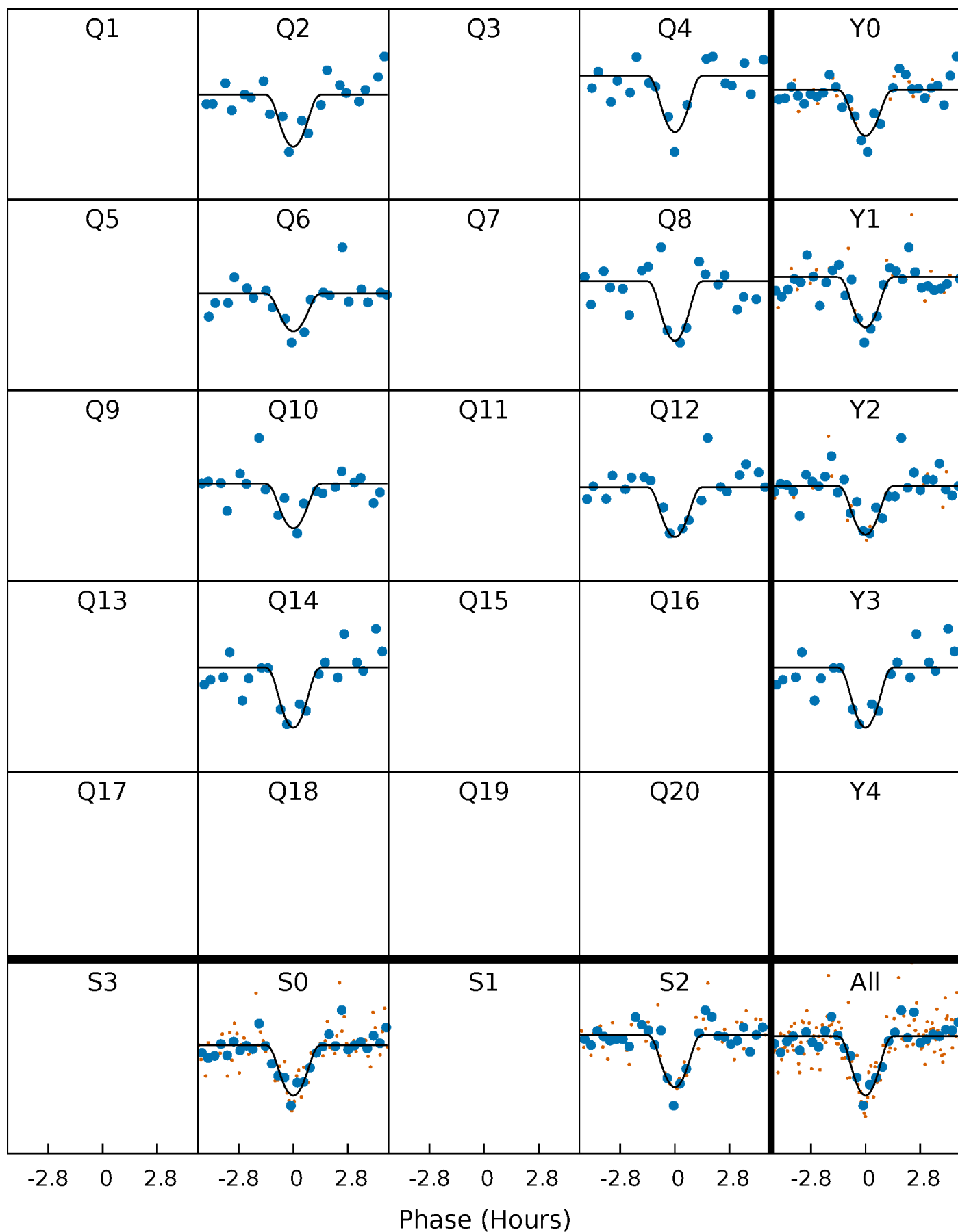
PDC Quarter-Phased Transit Curves

TCE 006948480-02 P=175.327920 Days $T_0=254.675964$ (BKJD)



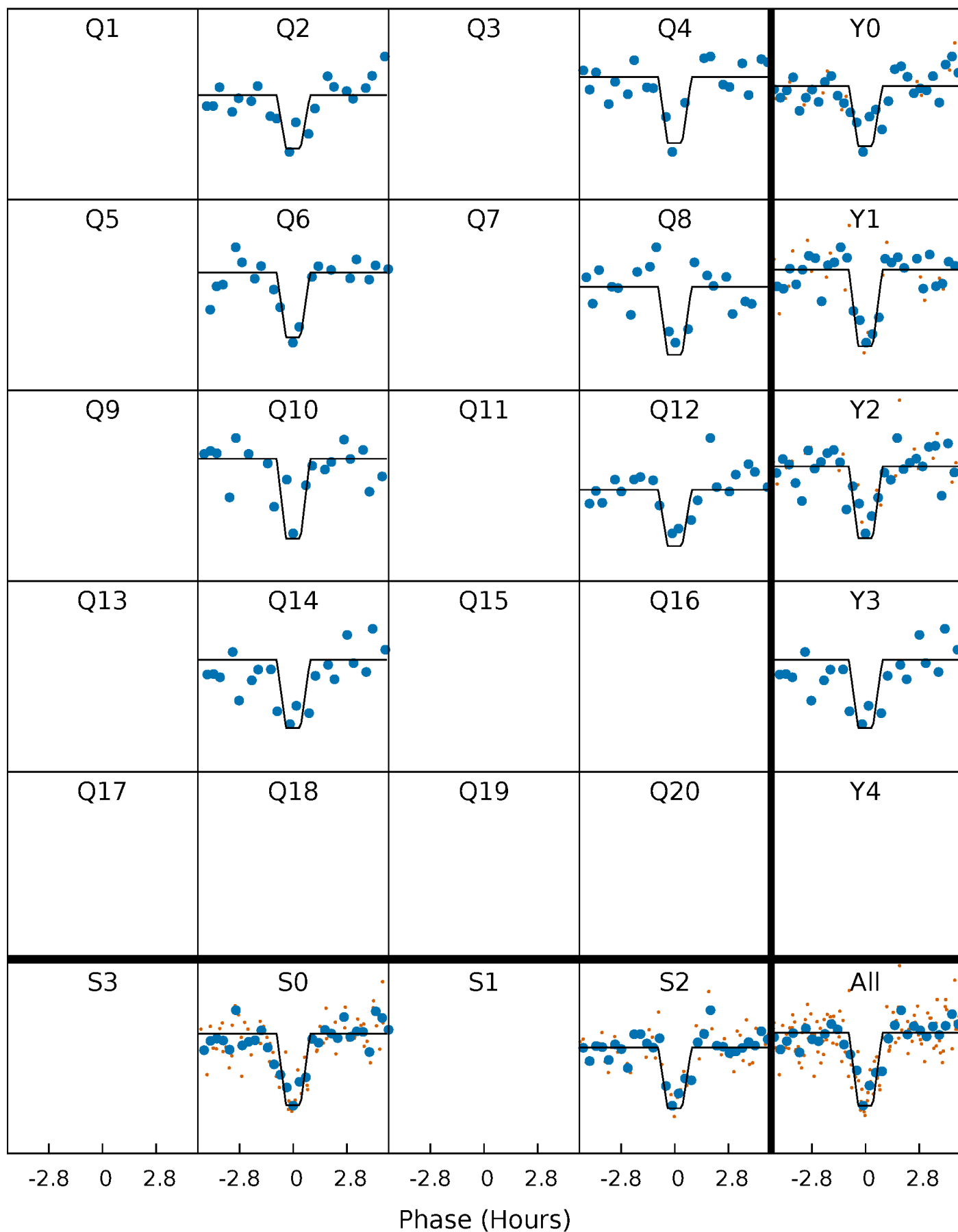
DV Quarter-Phased Transit Curves

TCE 006948480-02 $P=175.327920$ Days $T_0=254.675964$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

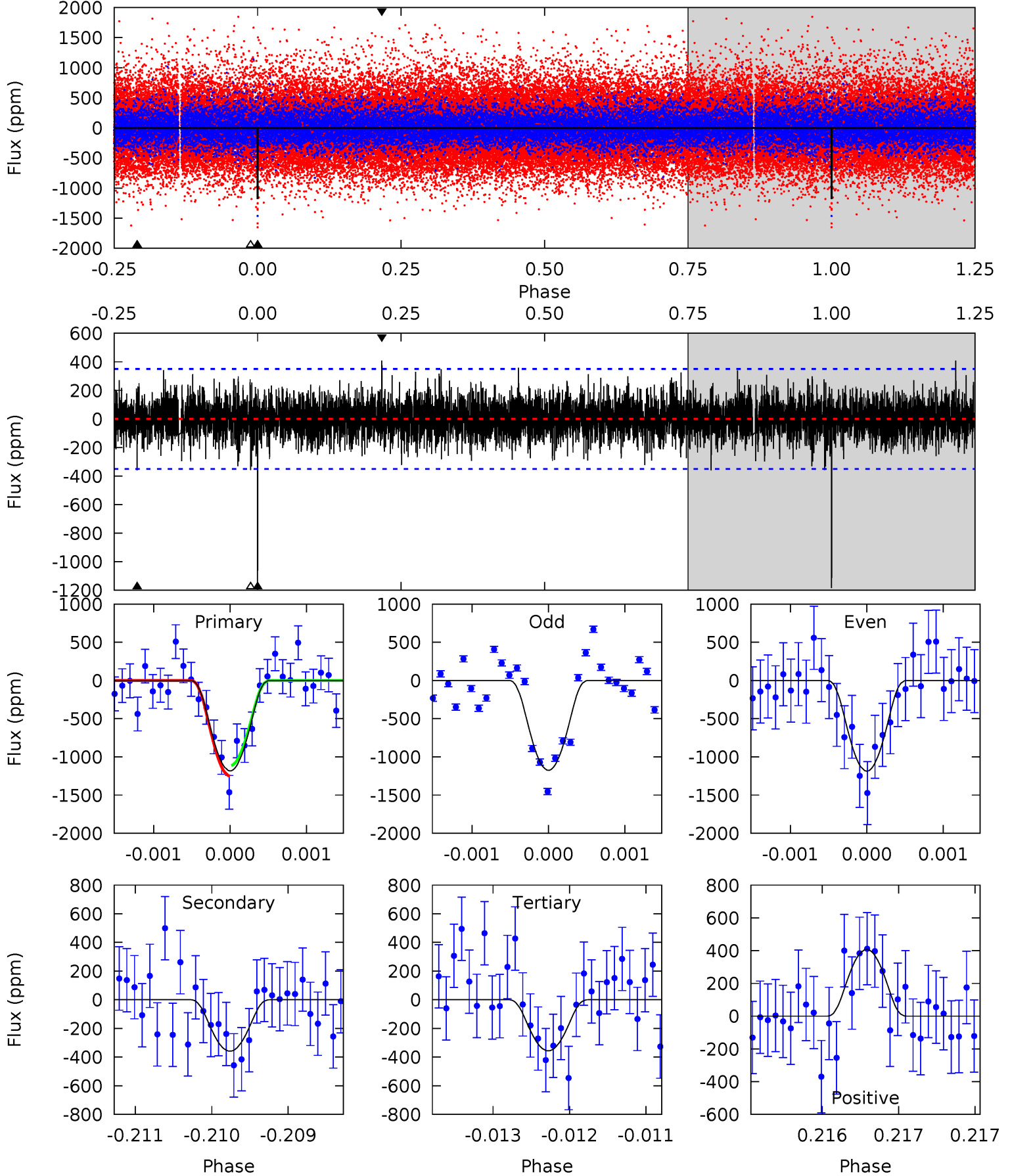
TCE 006948480-02 P=175.326997 Days $T_0=254.677776$ (BKJD)



DV Model-Shift Uniqueness Test

006948480-02, P = 175.327920 Days, E = 79.348044 Days

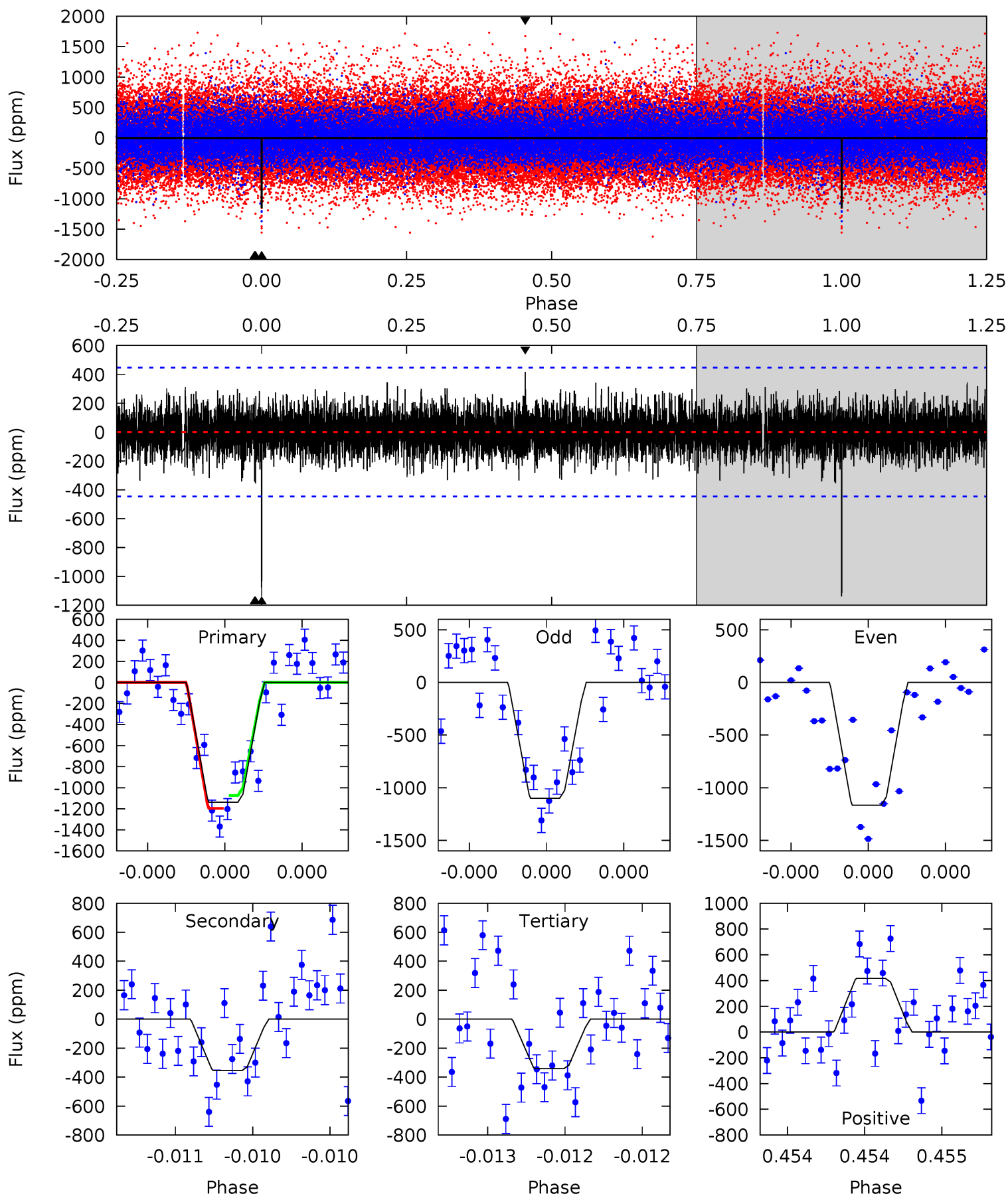
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	5.65	5.62	6.42	5.52	3.40	1.52	13.0	12.2	0.03	-0.77	0.08	1.02	0.26	1.09



Alt Model-Shift Uniqueness Test

006948480-02, $P = 175.326997$ Days, $E = 79.350779$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	4.45	4.30	5.24	5.60	3.53	1.22	10.0	9.07	0.15	-0.79	0.40	0.97	0.27	0.77



Stellar Parameters For KIC 006948480

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6008^{+168}_{-210}	$4.499^{+0.052}_{-0.208}$	$-0.200^{+0.300}_{-0.300}$	$0.930^{+0.292}_{-0.097}$	$0.995^{+0.131}_{-0.131}$	$1.742^{+0.485}_{-0.905}$
	+3%/-3%	+1%/-5%	+150%/-150%	+31%/-10%	+13%/-13%	+28%/-52%
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 006948480-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-359 ± 63	$16.23^{+16.71}_{-10.66}$	466^{+34}_{-23}	2838^{+1123}_{-446}	276^{+2156}_{-209}
Alt.	-354 ± 80	$16.06^{+15.66}_{-10.77}$	465^{+35}_{-23}	2835^{+1190}_{-454}	279^{+2296}_{-211}

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 $A_{obs} \gg 1.0$

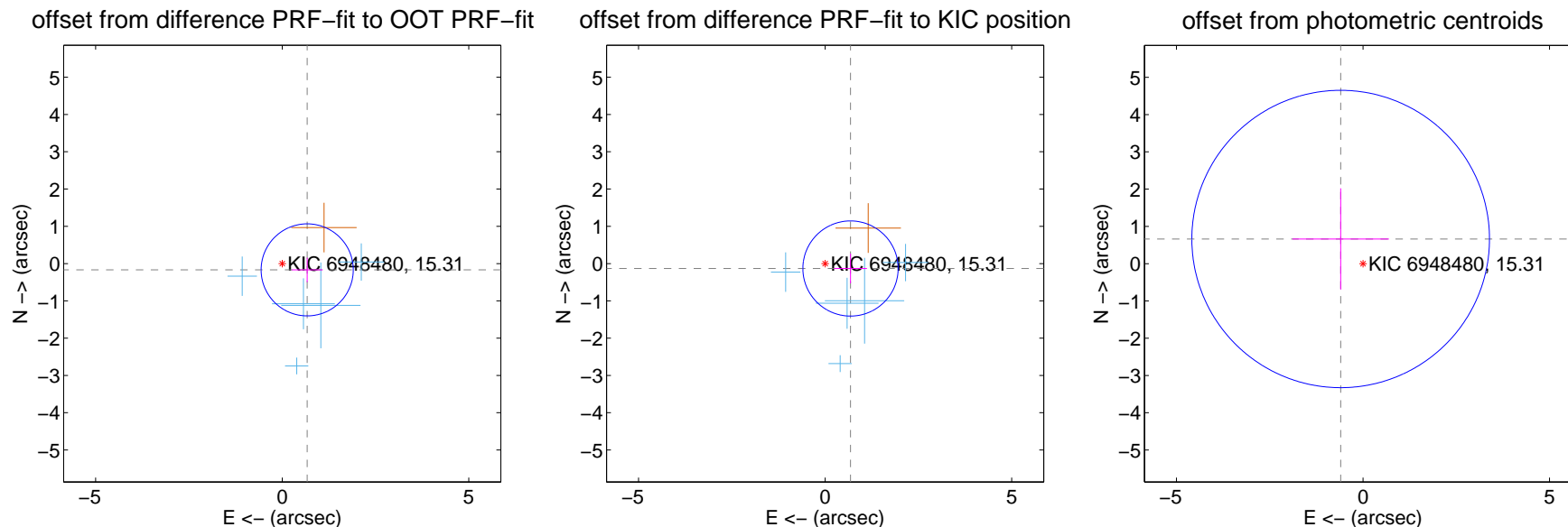
DV Centroid Data

Supplemental centroid analysis for 006948480-02. Kepler magnitude: 15.31. Transit SNR 11.15

There are 5 quarters with good PRF difference image offsets

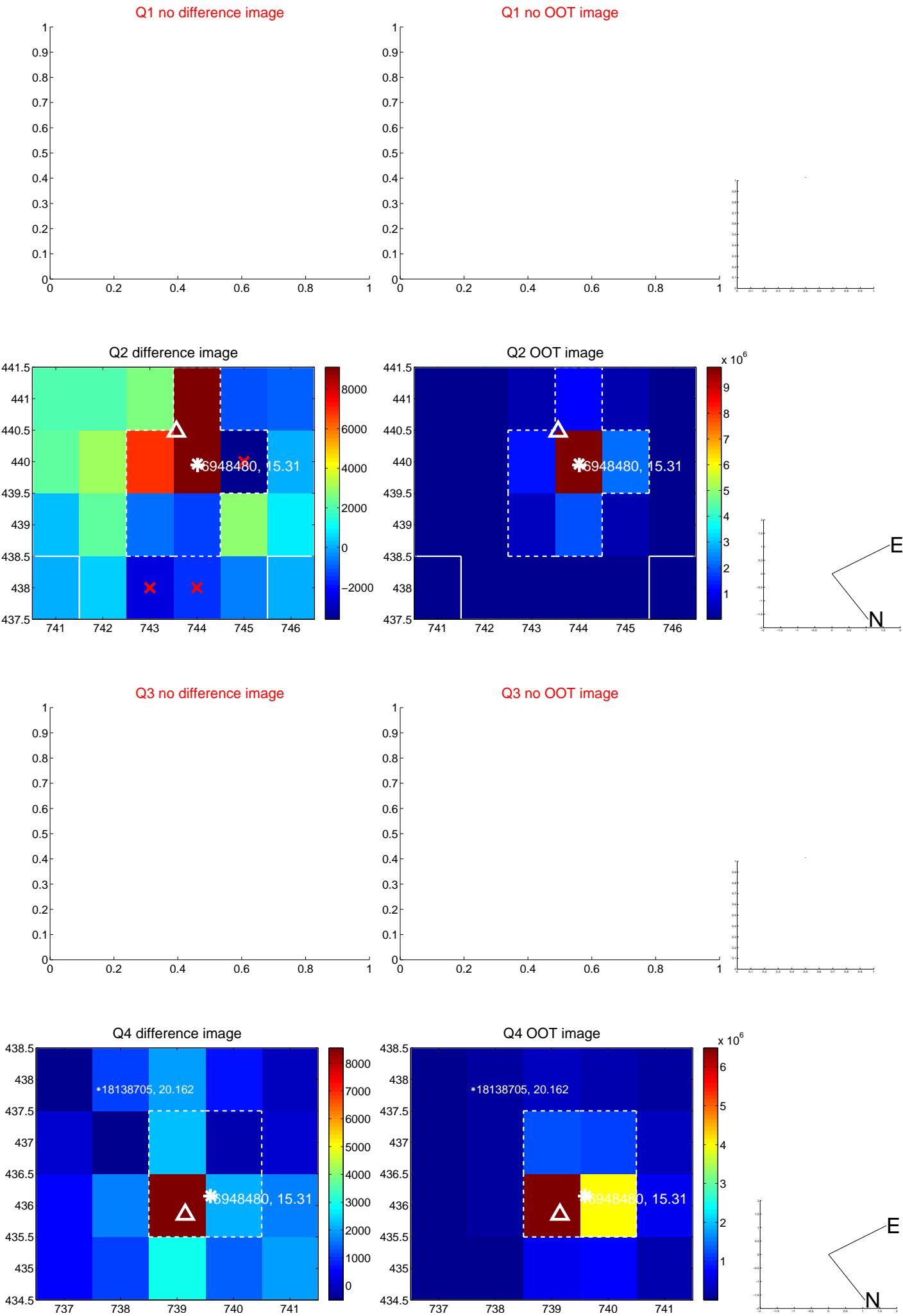
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.691 ± 0.412	1.68	-0.670 ± 0.416	-0.168 ± 0.329
PRF-fit source offset from KIC position	0.693 ± 0.426	1.63	-0.681 ± 0.440	-0.132 ± 0.400
photometric centroid source offset	0.89 ± 1.33	0.67	0.60 ± 1.29	0.66 ± 1.36

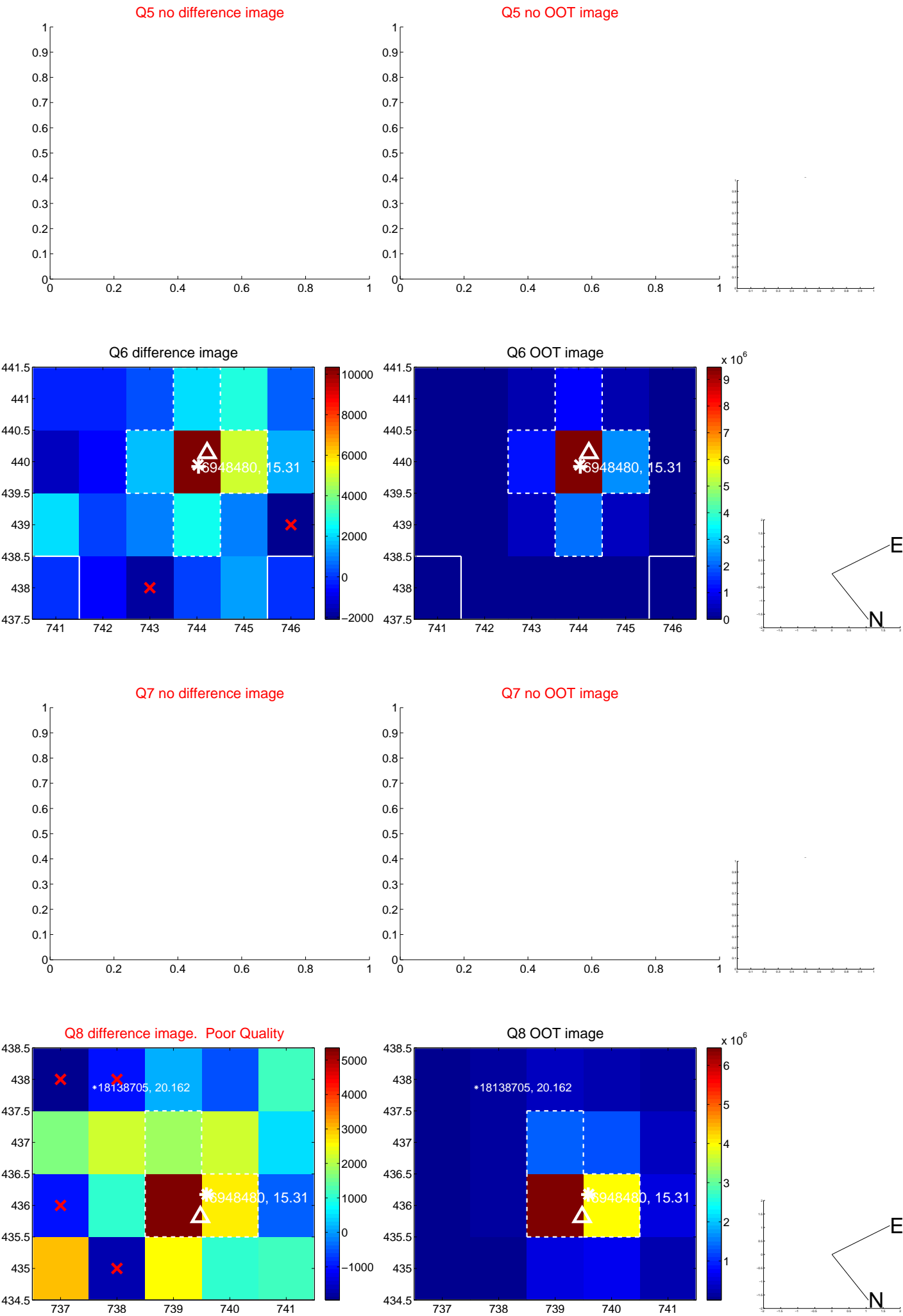


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

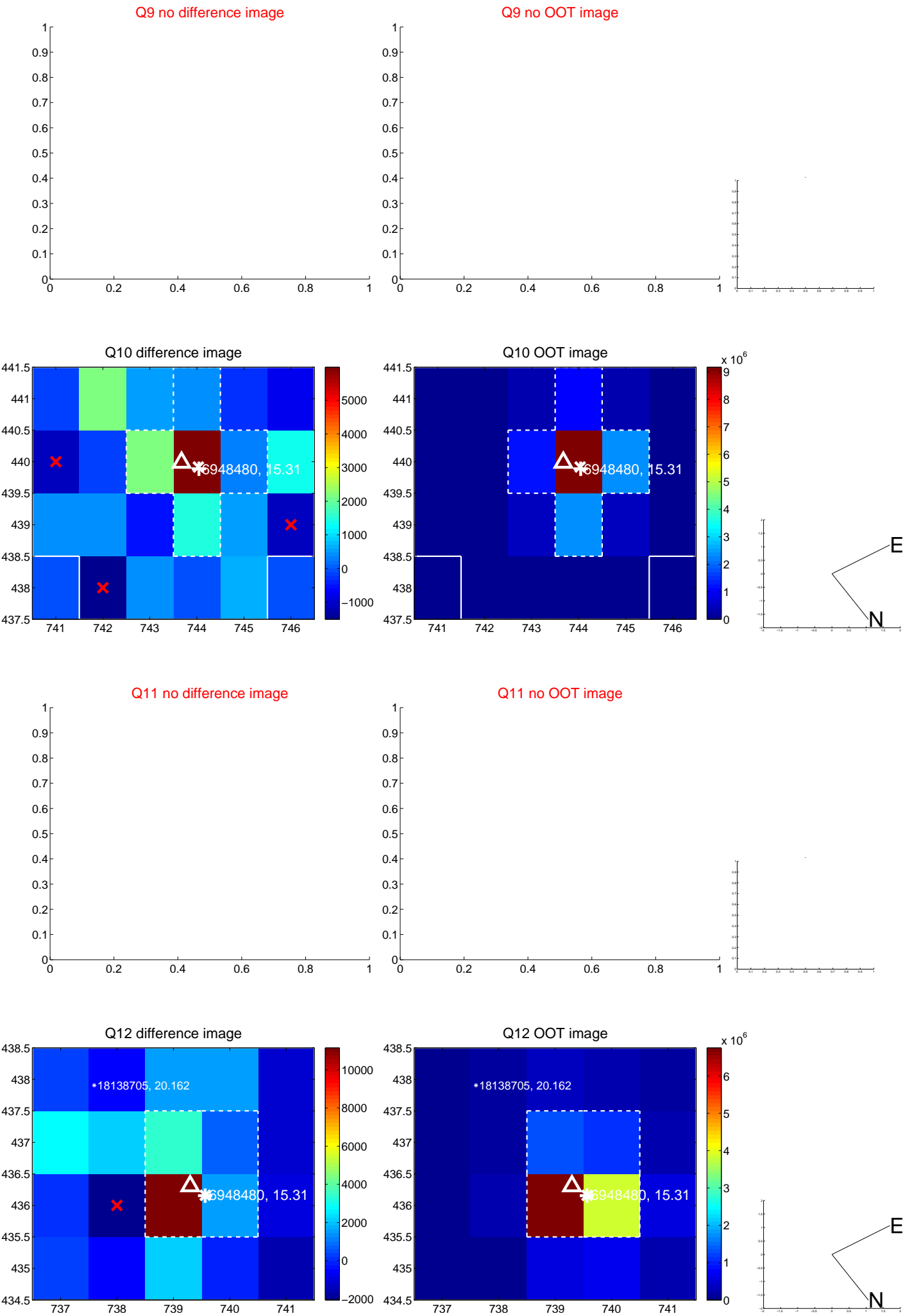
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



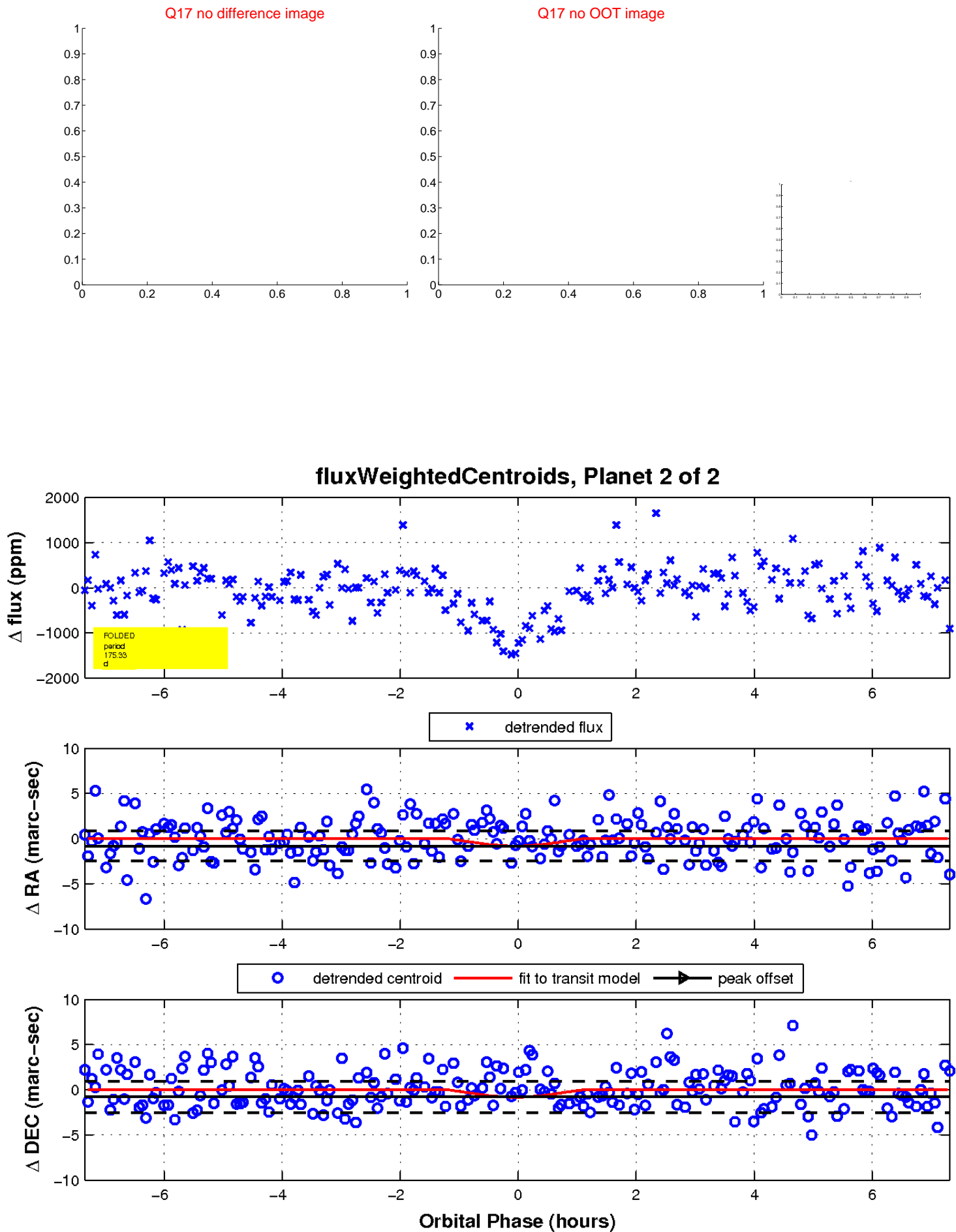
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

