

KIC 008414914

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})
008414914-01	OBS	5513.01	100.300138	176.791763	539440.9	7.500	762.3	-1.0	1.05	6060	57.07	7.43
008414914-02	OBS	No	100.303526	155.943371	250087.8	10.182	478.3	315.6	1.05	6060	77.30	7.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008414914-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008414914-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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 008414914-01

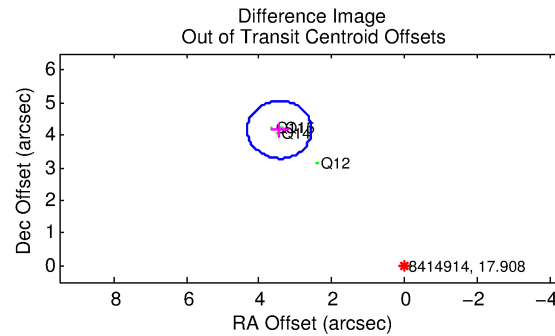
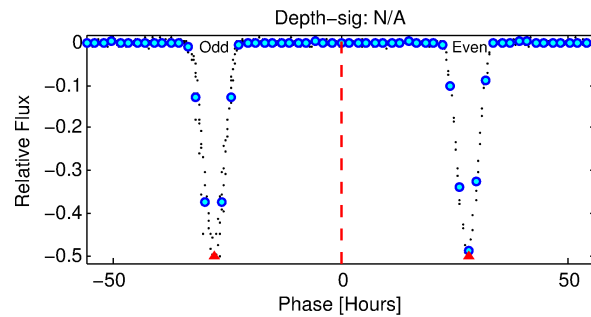
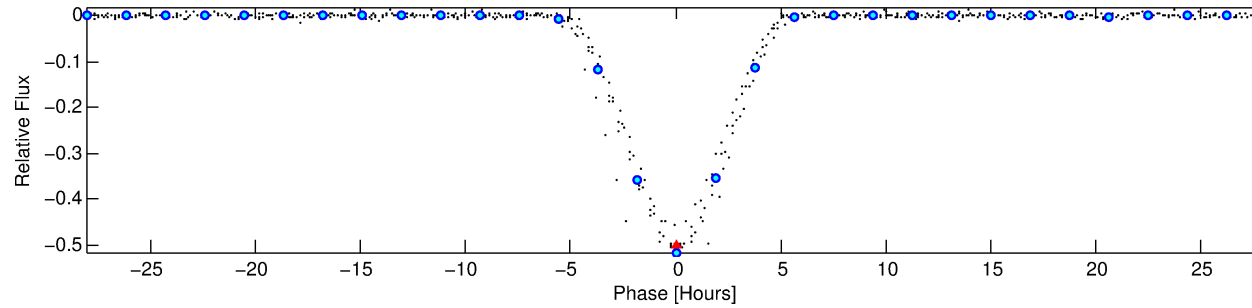
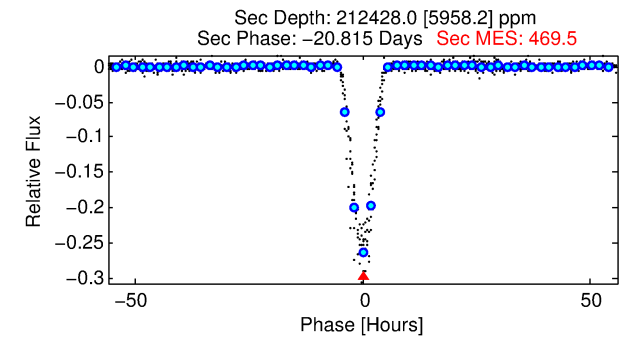
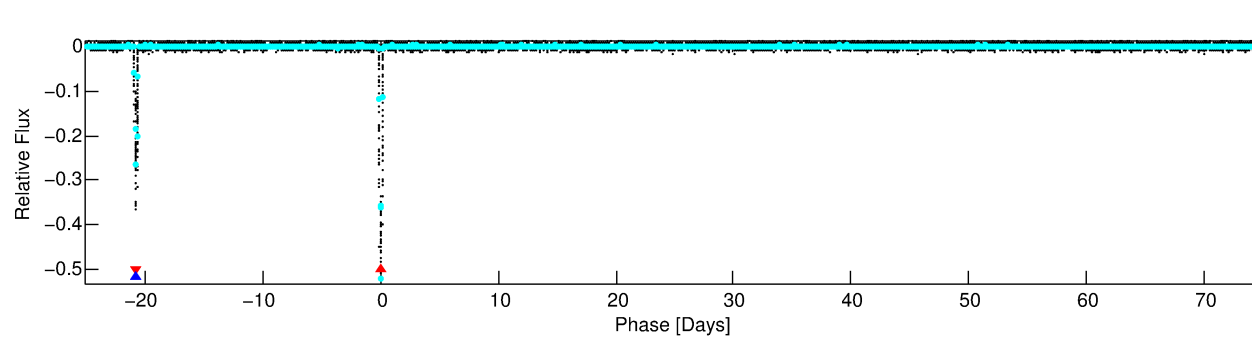
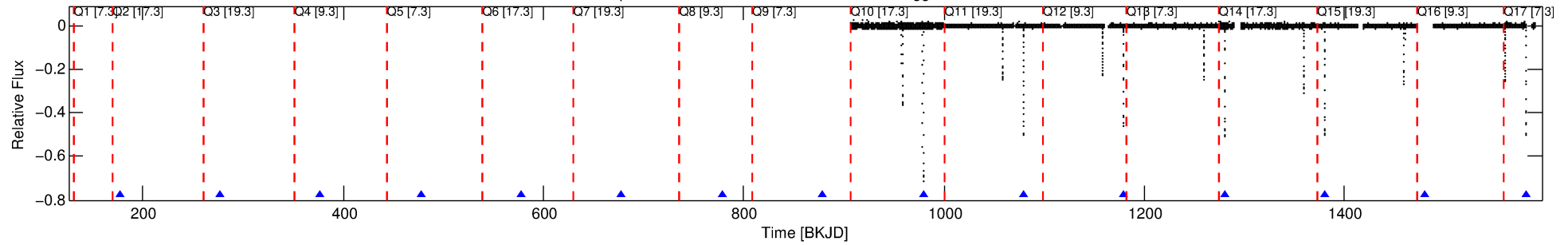
No Significant Match Found

DV One-Page Summary

KIC: 8414914 Candidate: 1 of 2 Period: 100.300 d

KOI: K05513.01 Corr: 0.841

Kp: 17.91 R*: 1.05 Rs Teff: 6060.0 K Logg: 4.40 Fe/H: -0.180



TPS TCE Results:

Period = 100.30014 d
Epoch = 176.7918 BKJD

DV fit results are unavailable

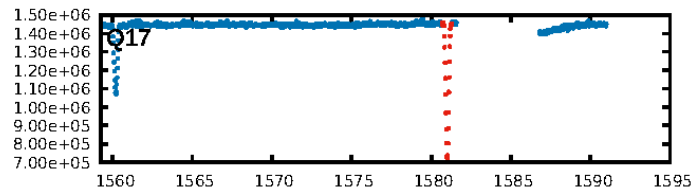
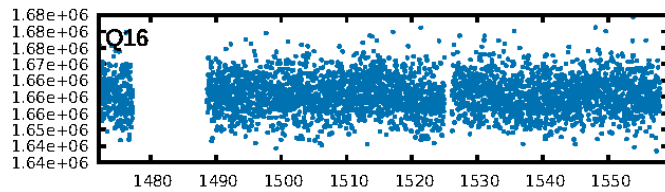
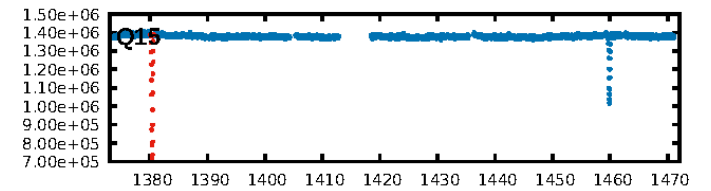
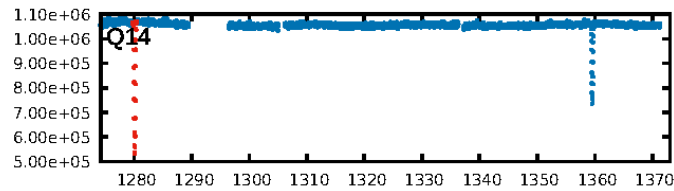
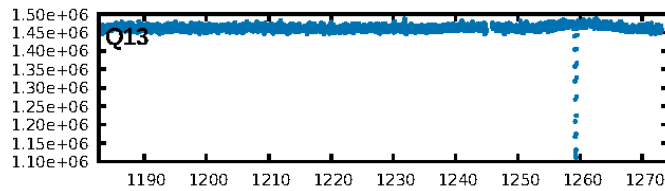
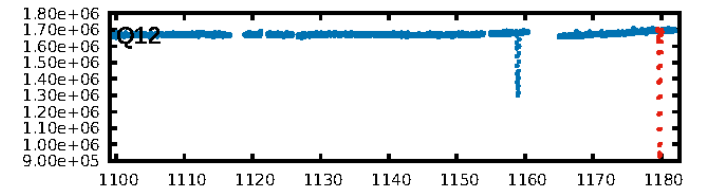
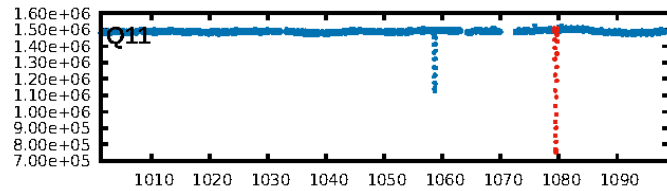
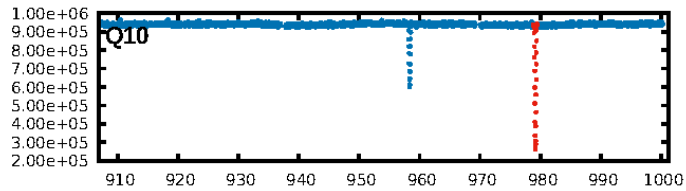
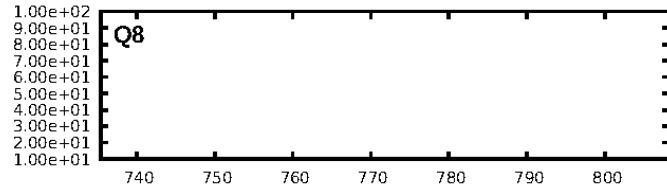
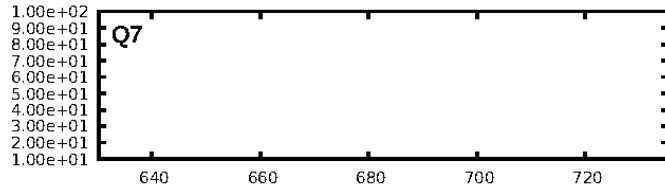
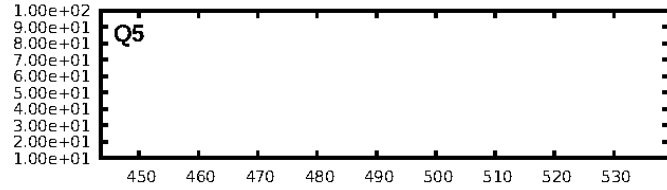
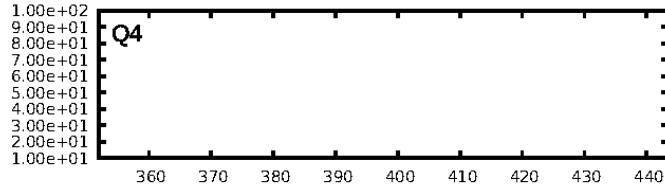
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.5% [0.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 2.623
Centroid-sig: 0.0%
Centroid-so: 3.140 arcsec [1149.07σ]
OotOffset-rm: 5.406 arcsec [18.38σ]
KicOffset-rm: 0.548 arcsec [7.29σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 2/2/1/0 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

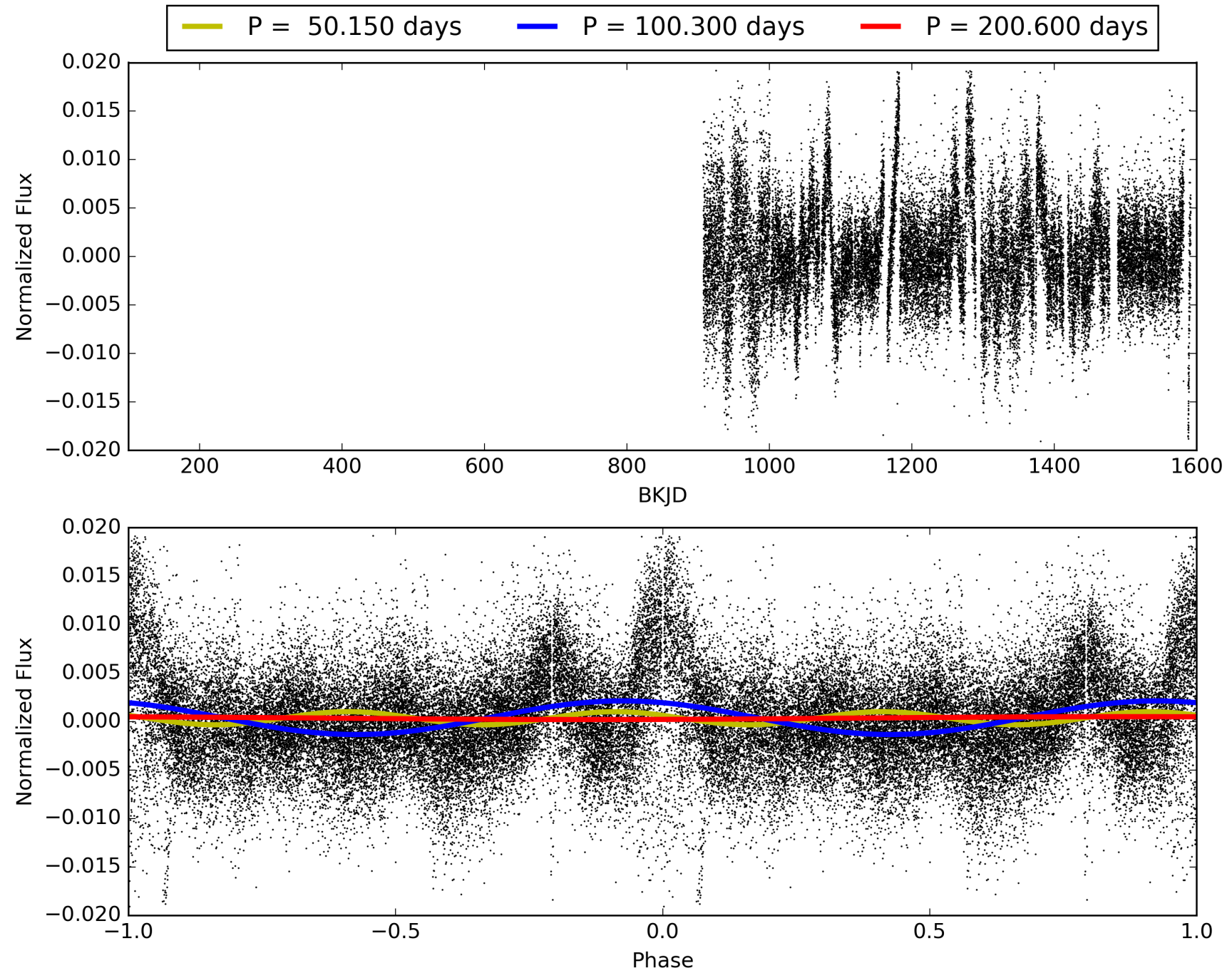
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:23:31 Z

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

TCE 008414914-01, PDC Light Curves

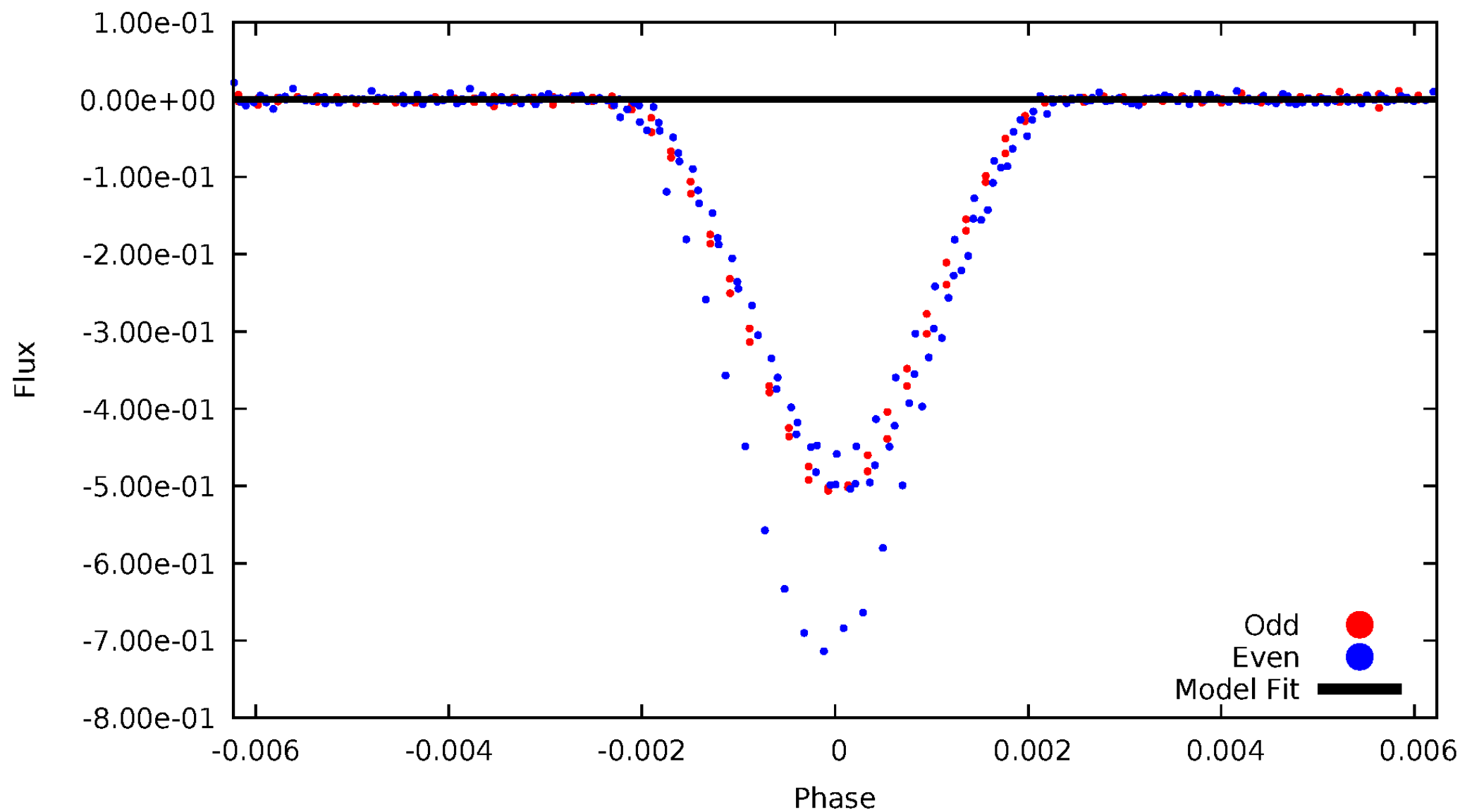


TCE 008414914-01



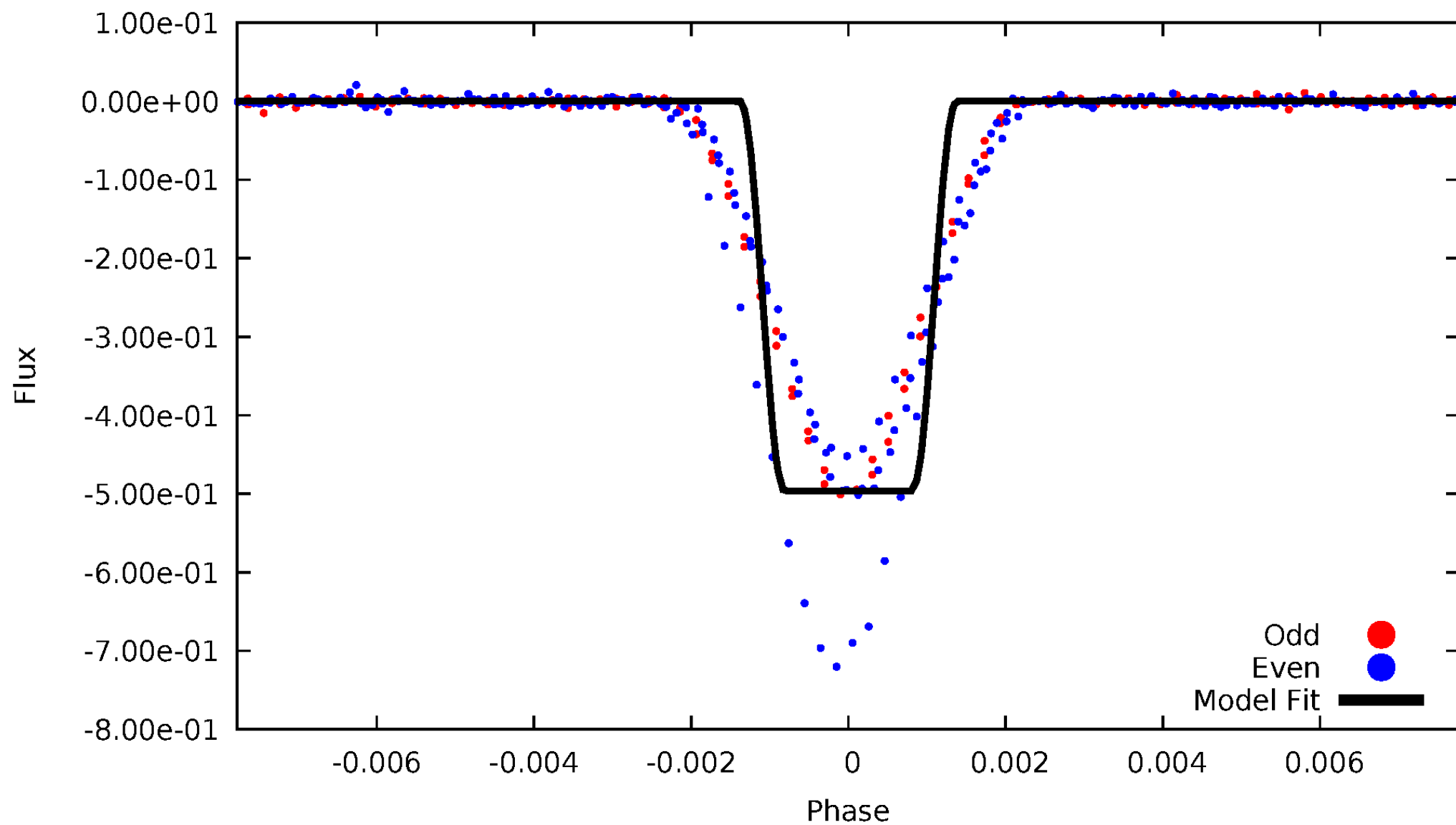
DV Odd/Even

TCE 008414914-01



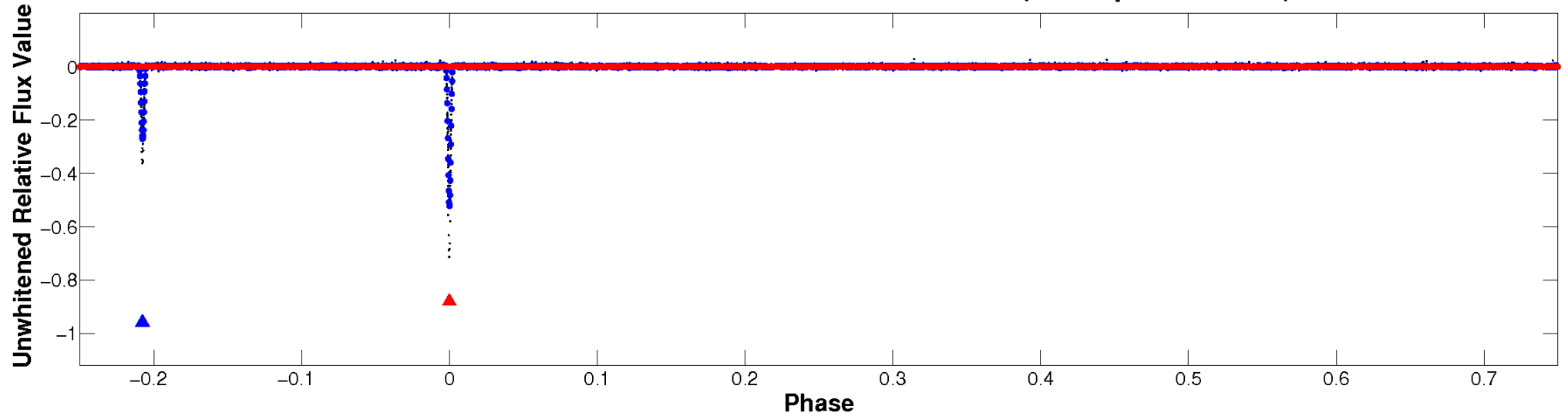
ALT Odd/Even

TCE 008414914-01

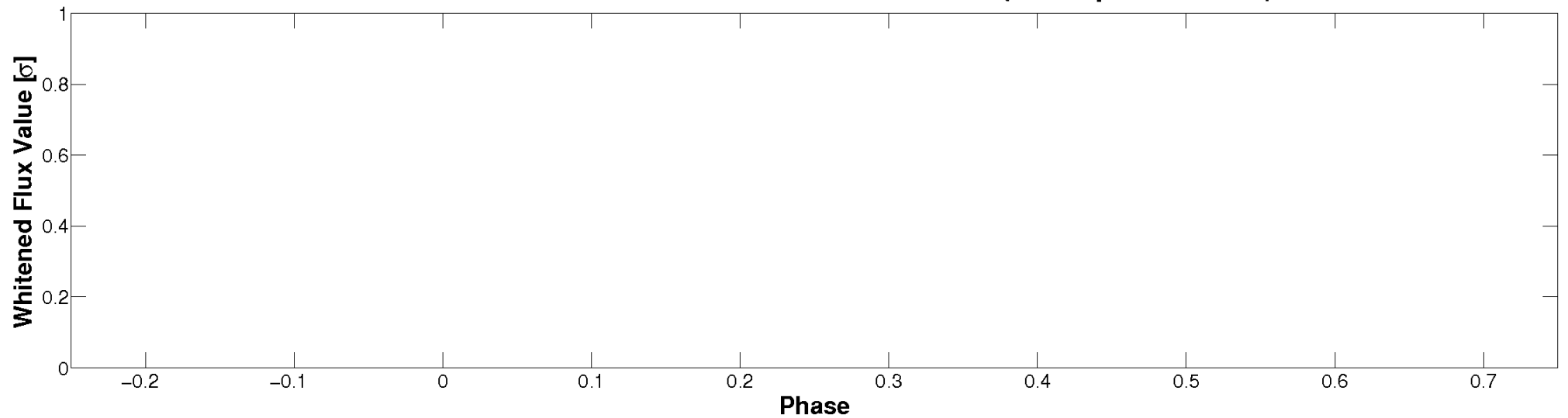


Non-Whitened Vs. Whitened Light Curve

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

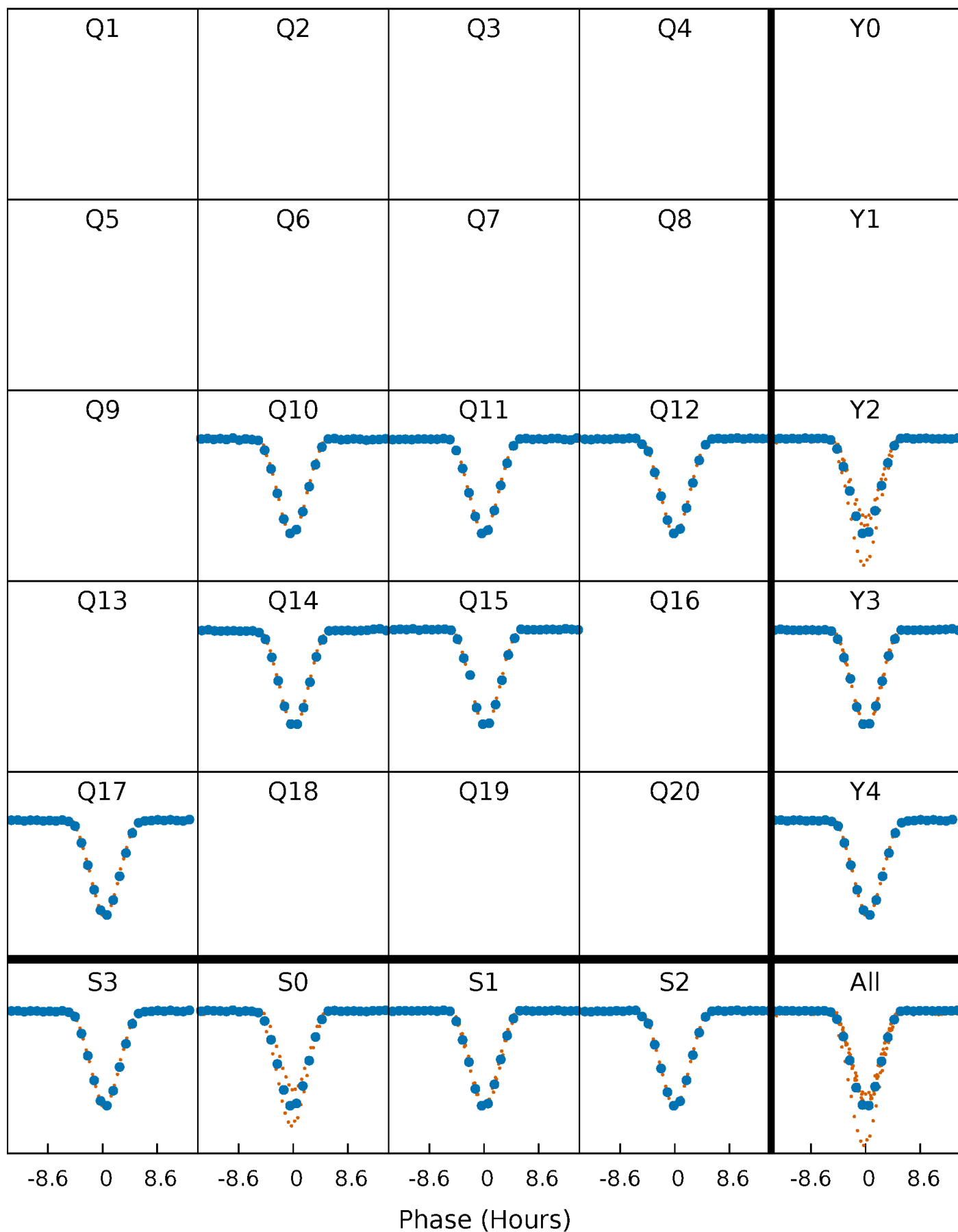


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



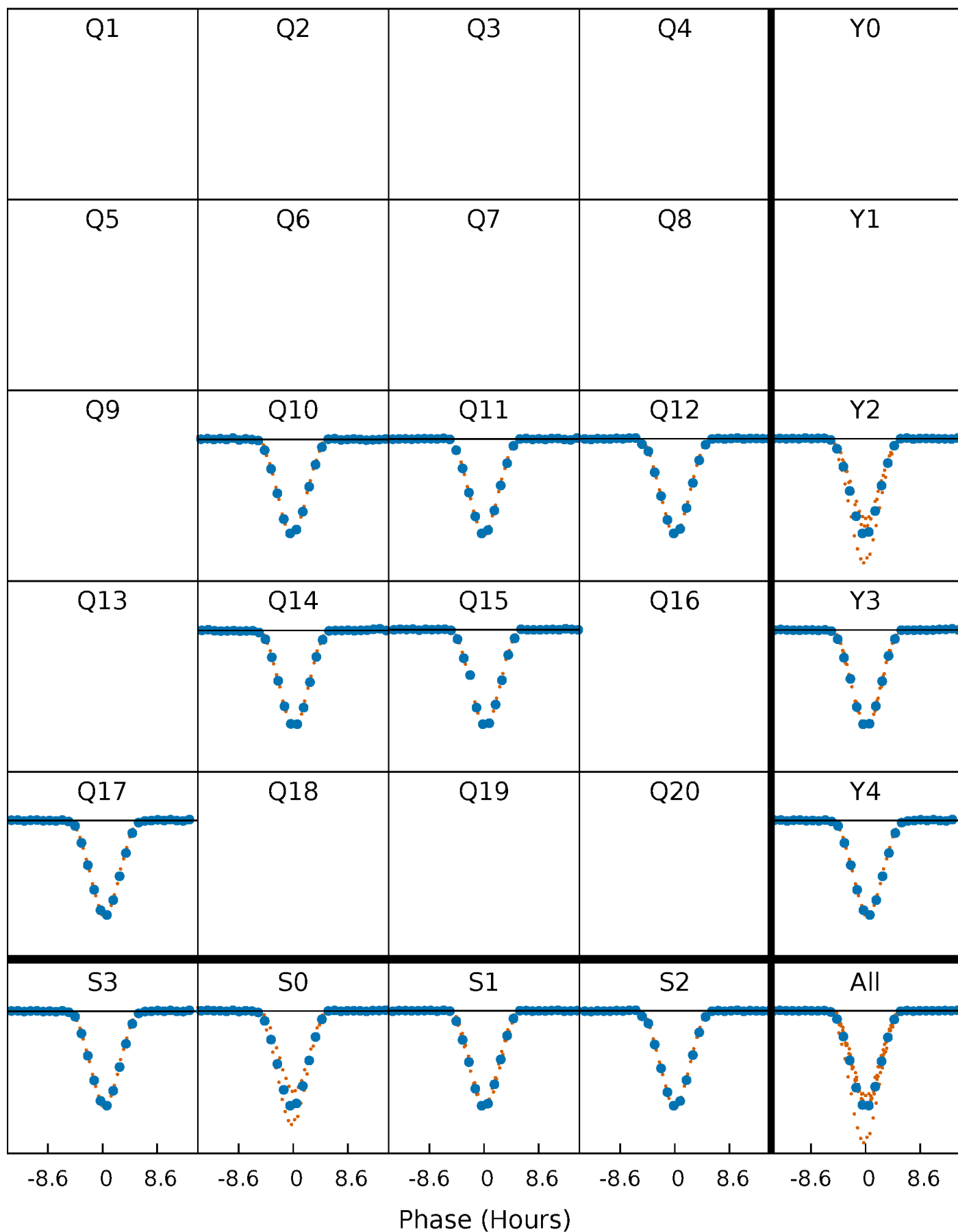
PDC Quarter-Phased Transit Curves

TCE 008414914-01 P=100.300138 Days $T_0=176.791763$ (BKJD)



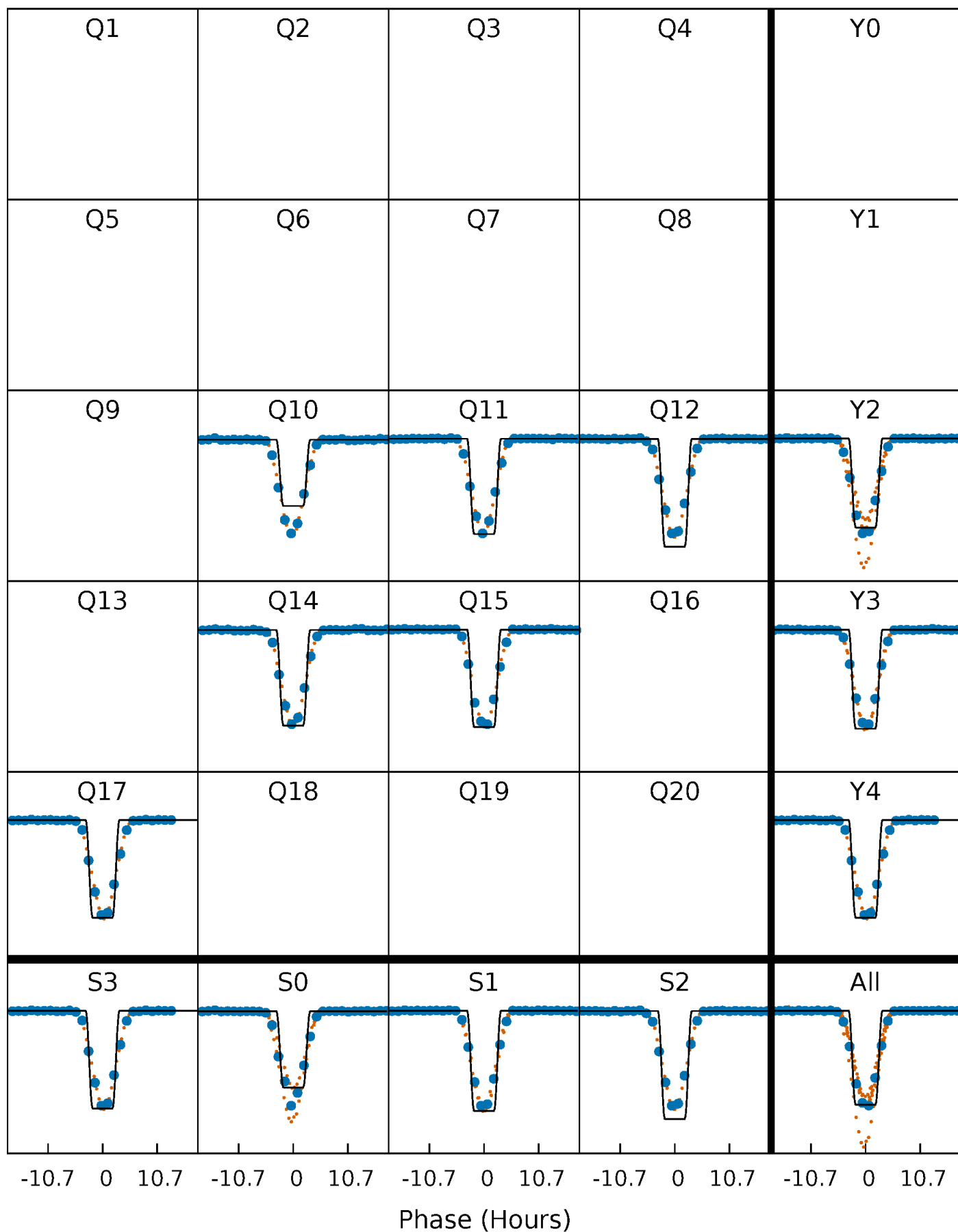
DV Quarter-Phased Transit Curves

TCE 008414914-01 P=100.300138 Days $T_0=176.791763$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

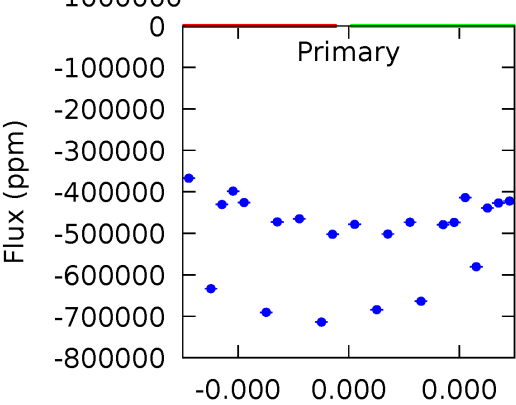
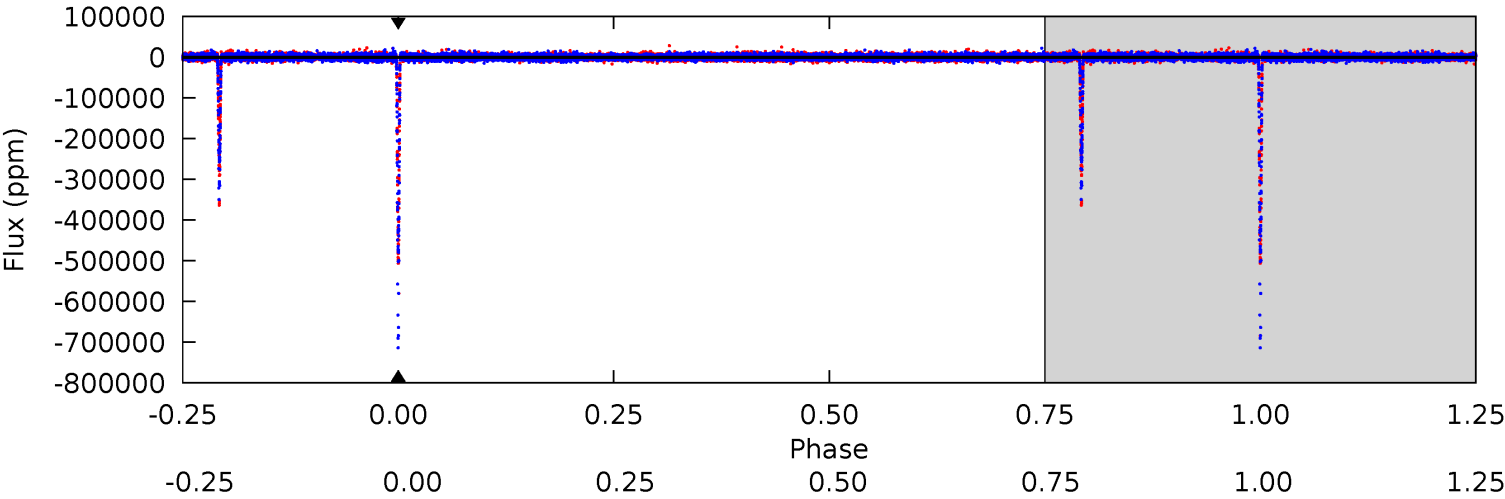
TCE 008414914-01 P=100.300138 Days $T_0=176.795045$ (BKJD)



DV Model-Shift Uniqueness Test

008414914-01, P = 100.300138 Days, E = 176.791763 Days

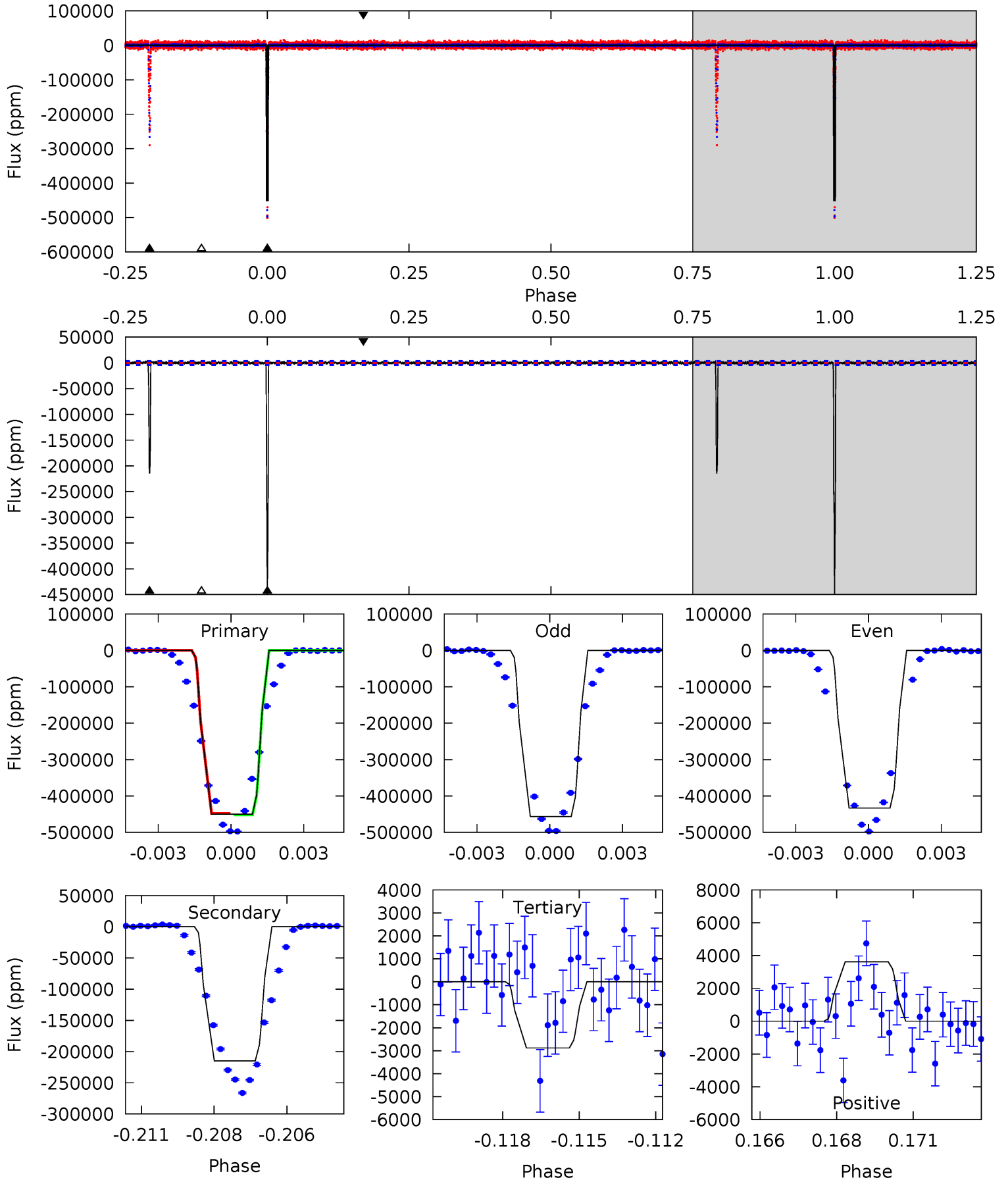
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008414914-01, P = 100.300138 Days, E = 176.795045 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
622.0	297.1	3.98	5.01	5.27	3.00	1.11	618.0	617.0	293.1	292.1	18.8	1.06	0.01	0



Stellar Parameters For KIC 008414914

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6060^{+210}_{-231}	$4.397^{+0.105}_{-0.195}$	$-0.180^{+0.300}_{-0.300}$	$1.046^{+0.323}_{-0.162}$	$0.994^{+0.154}_{-0.112}$	$1.223^{+0.592}_{-0.643}$
	+3%/-4%	+2%/-4%	+167%/-167%	+31%/-15%	+15%/-11%	+48%/-53%
Source	KIC0	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 008414914-01 / KOI 5513.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$59.10^{+14.61}_{-13.20}$	595^{+44}_{-36}	-2626^{+7721}_{-2236}	$-49.374^{+3392.399}_{-2601.082}$
Alt.	-214823 ± 723	$82.03^{+18.69}_{-14.37}$	594^{+50}_{-38}	5267^{+391}_{-326}	3952^{+1786}_{-1259}

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

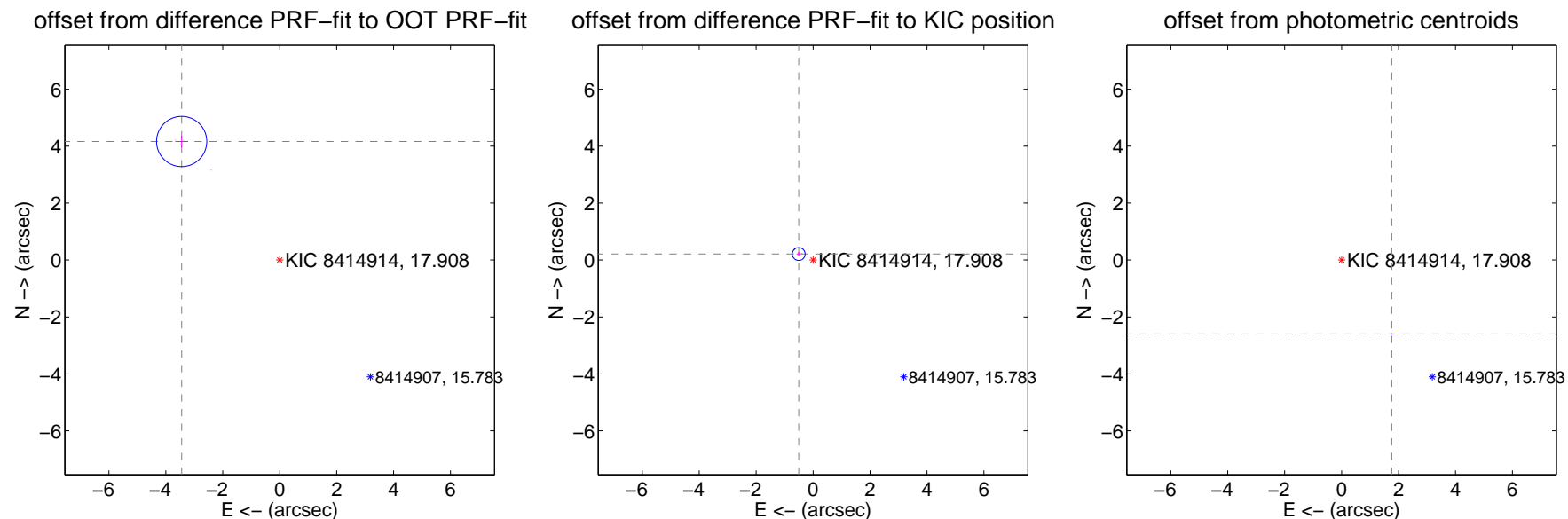
DV Centroid Data

Supplemental centroid analysis for 008414914-01. Kepler magnitude: 17.91. Transit SNR -1.00

There are 5 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.97 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	5.406 ± 0.294	18.38	3.445 ± 0.226	4.166 ± 0.207
PRF-fit source offset from KIC position	0.548 ± 0.075	7.29	0.506 ± 0.076	0.211 ± 0.070
photometric centroid source offset	3.14 ± 0.00	1149.07	-1.76 ± 0.00	-2.60 ± 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.

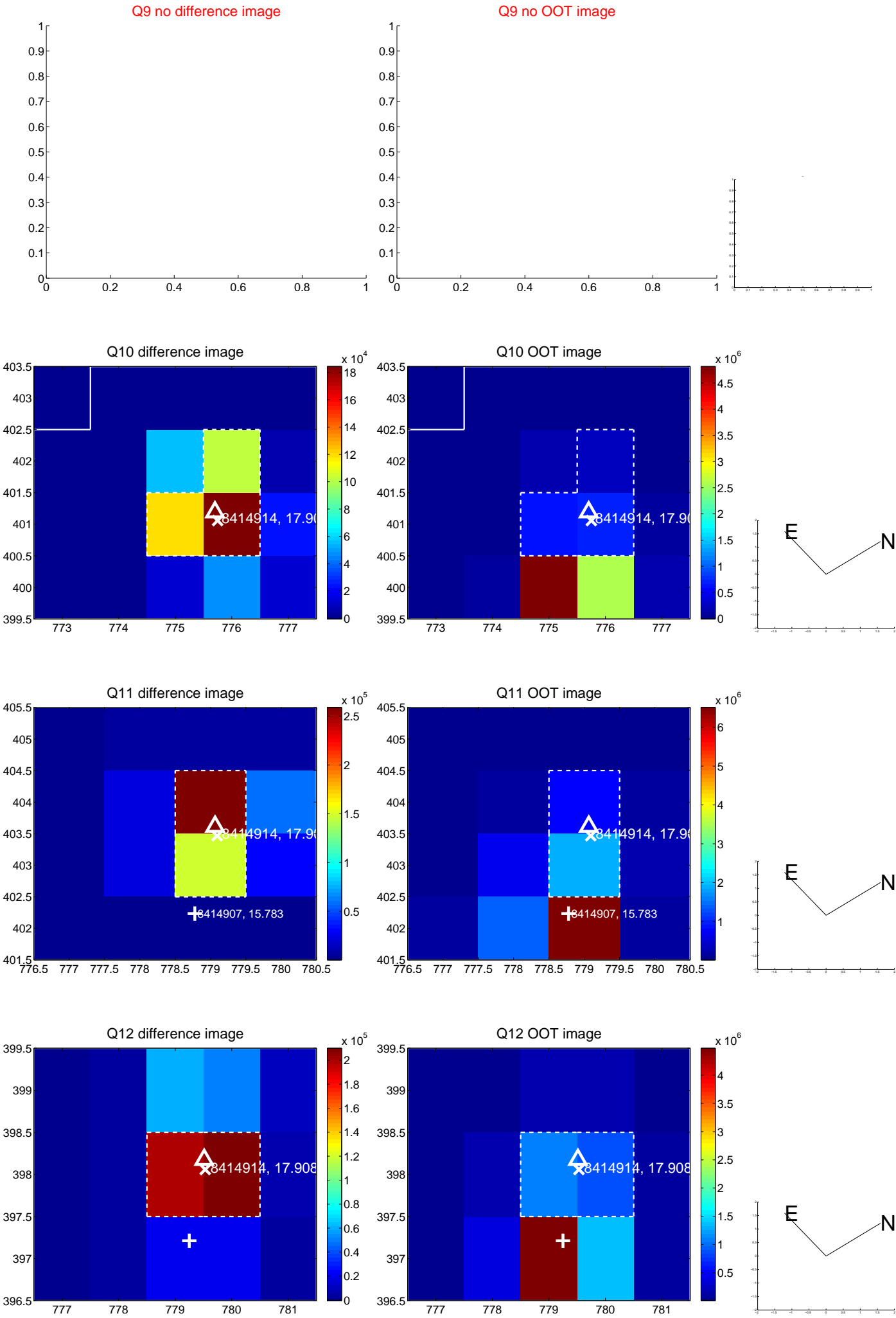
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



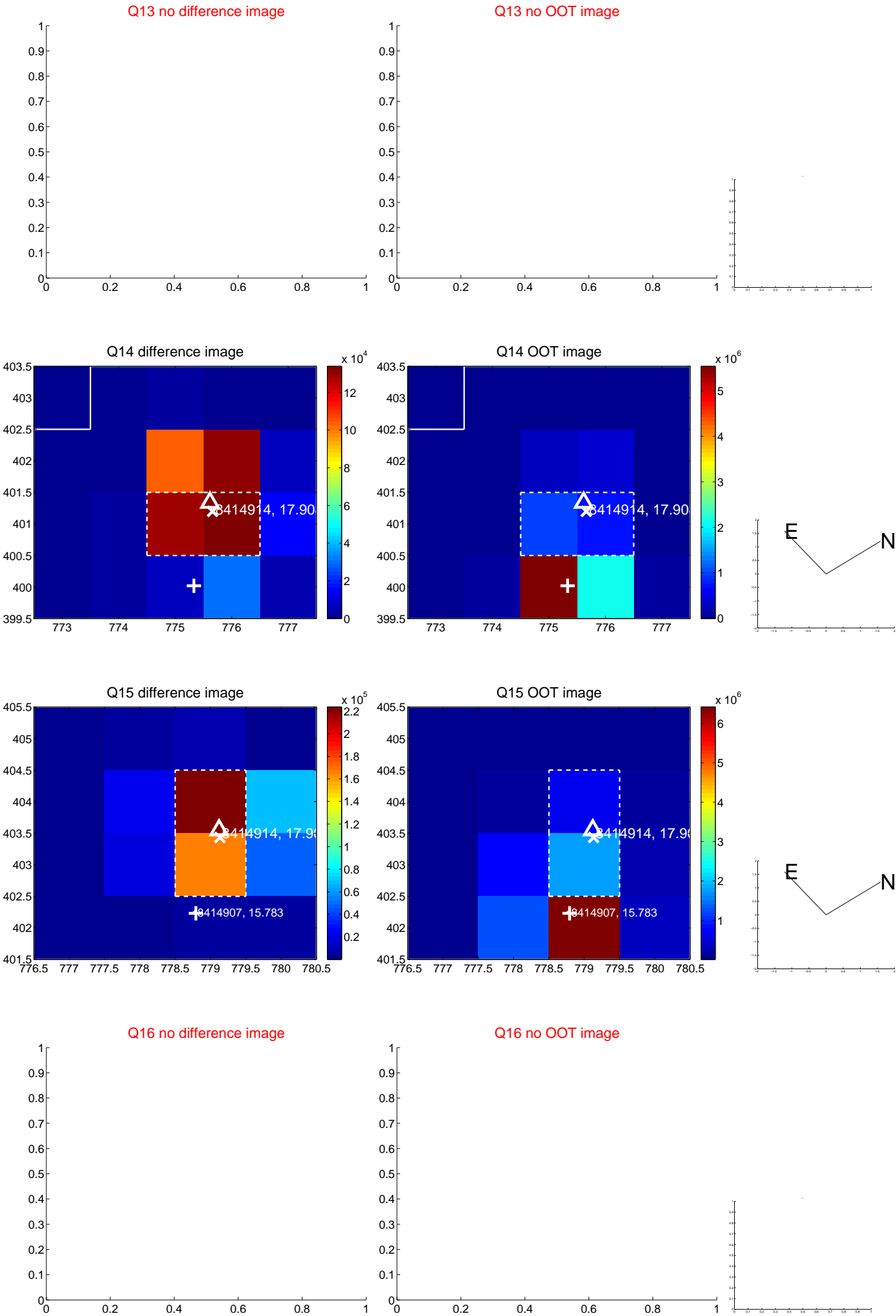
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



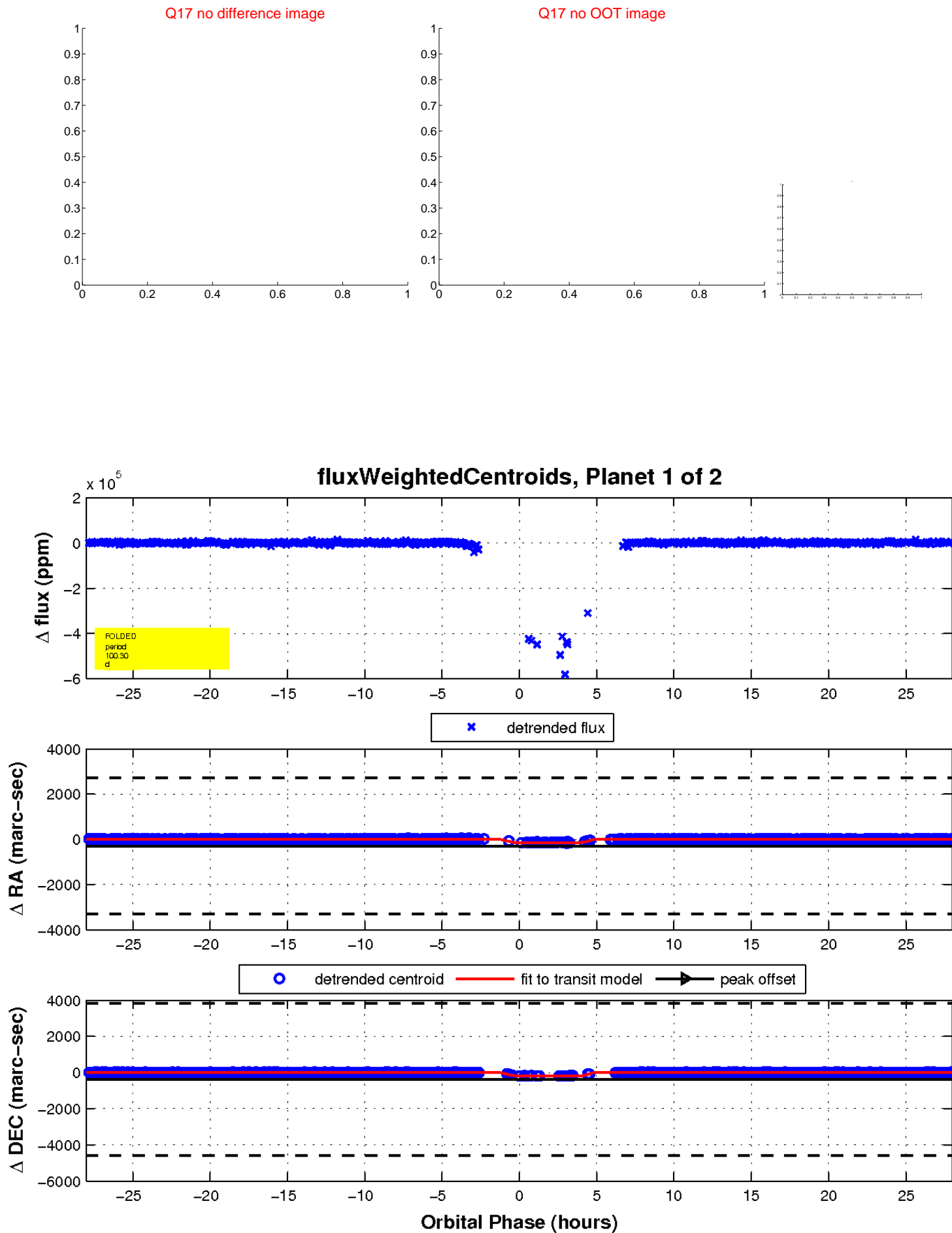
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

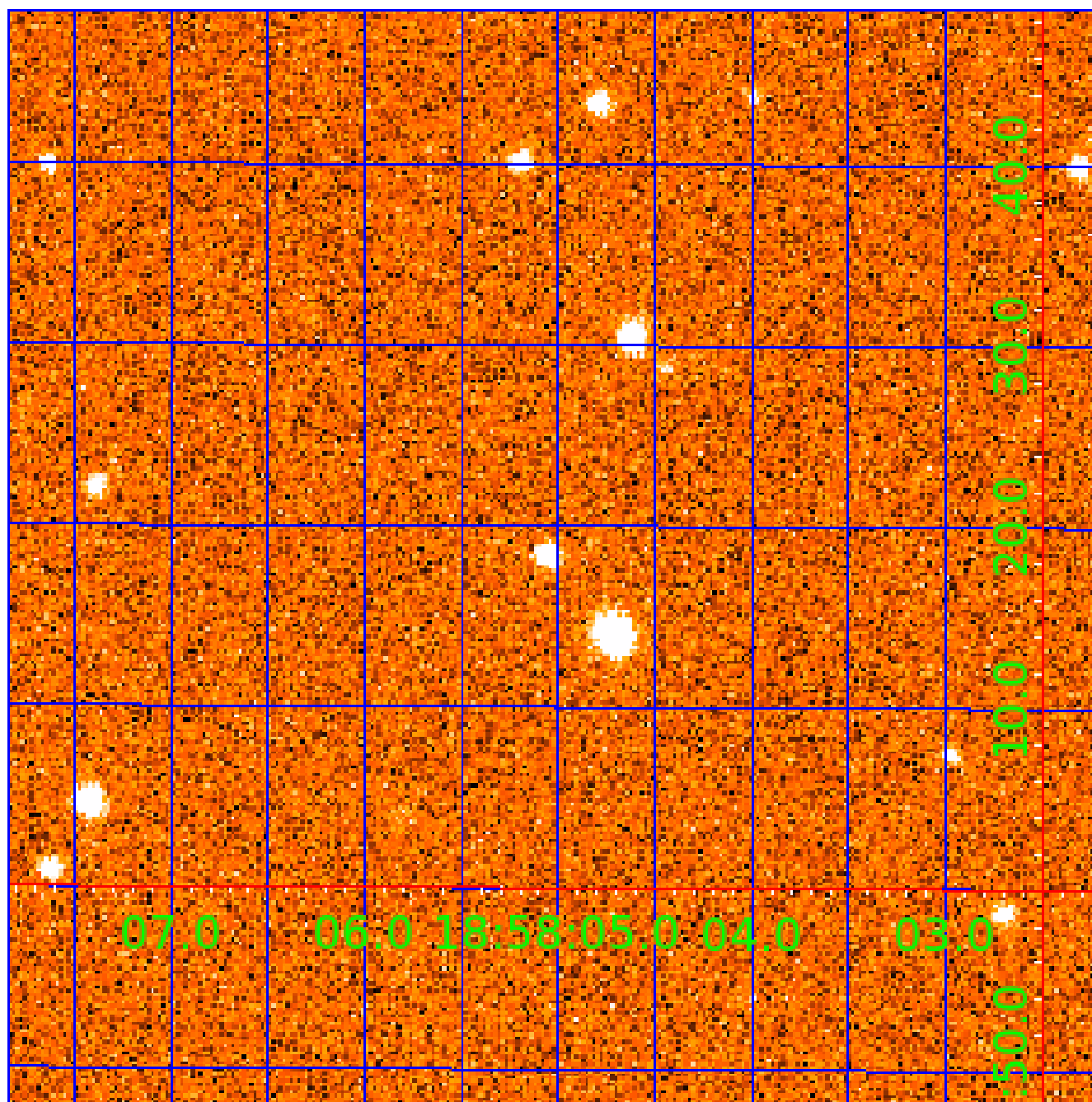


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008414914

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})
008414914-01	OBS	5513.01	100.300138	176.791763	539440.9	7.500	762.3	-1.0	1.05	6060	57.07	7.43
008414914-02	OBS	No	100.303526	155.943371	250087.8	10.182	478.3	315.6	1.05	6060	77.30	7.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008414914-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008414914-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

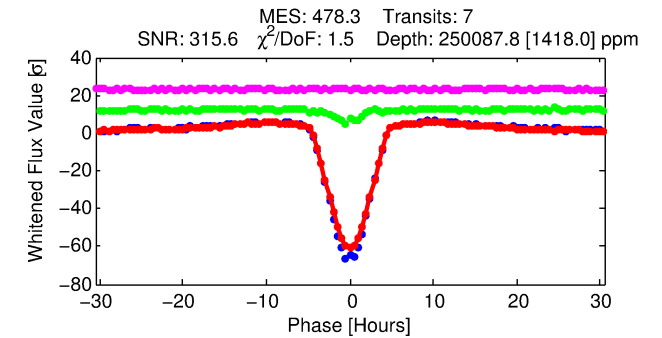
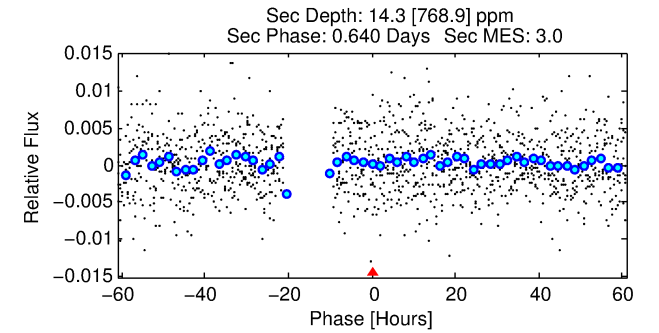
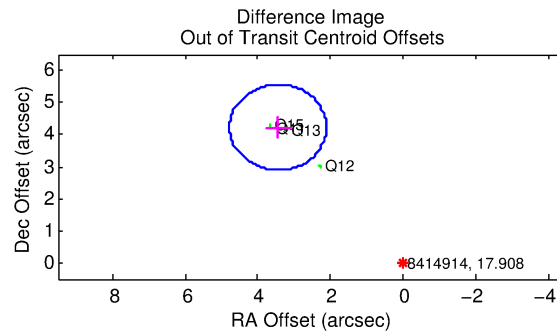
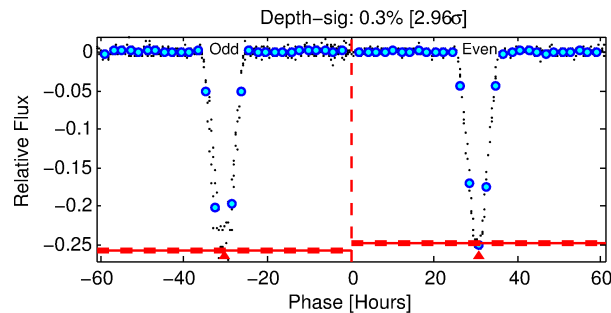
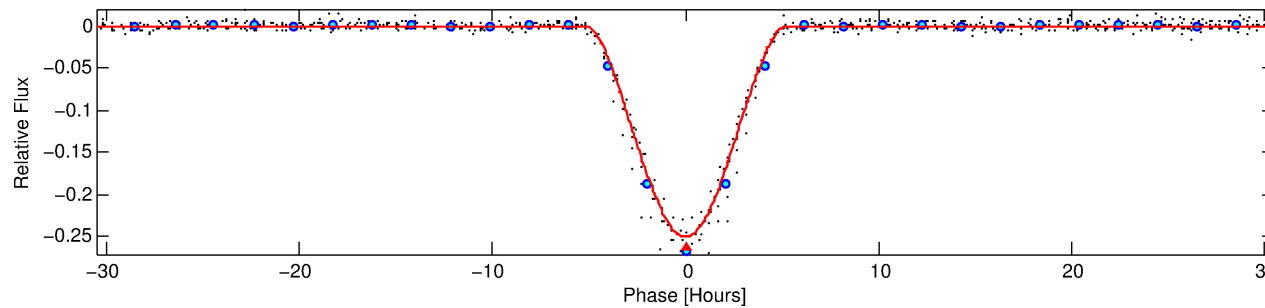
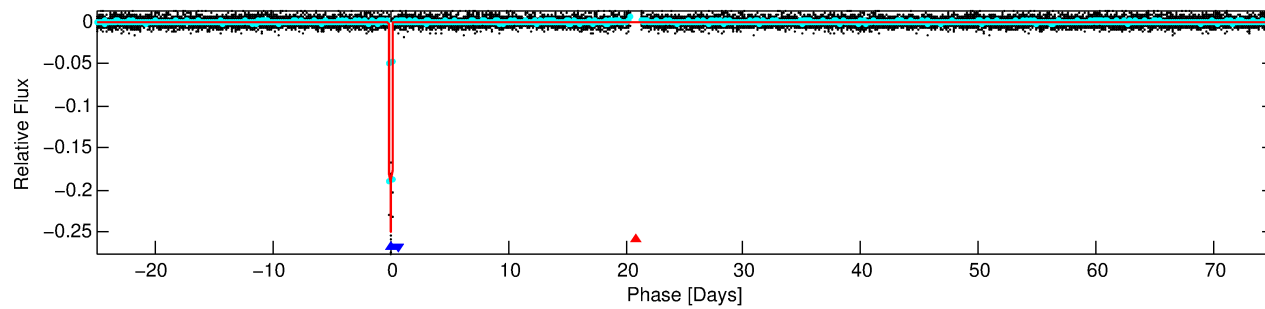
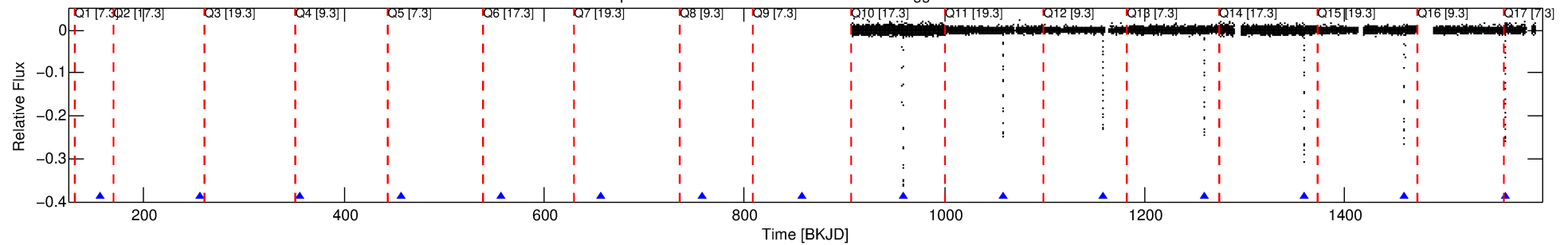
Ephemeris Match Information For 008414914-02

No Significant Match Found

DV One-Page Summary

KIC: 8414914 Candidate: 2 of 2 Period: 100.304 d
KOI: K05513 Corr: No Ephemeris Match

Kp: 17.91 R*: 1.05 Rs Teff: 6060.0 K Logg: 4.40 Fe/H: -0.180



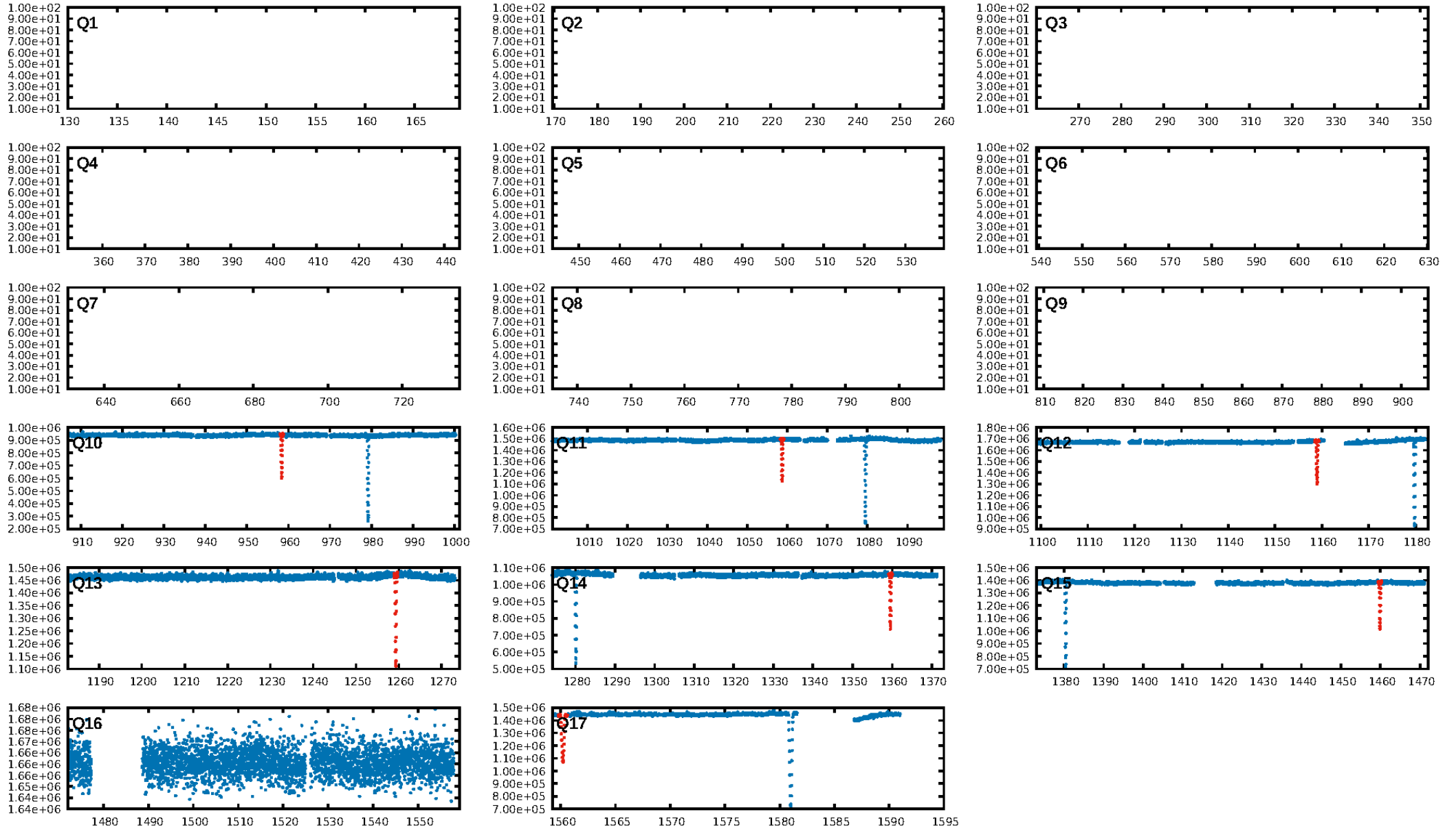
DV Fit Results:

Period = 100.30353 [0.00020] d
Epoch = 155.9434 [0.0022] BKJD
Rp/R* = 0.6772 [0.1304]
a/R* = 108.05 [4.15]
b = 0.87 [0.18]
Seff = 7.43 [2.93]
Teq = 421 [41] K
Rp = 77.30 [28.13] Re
a = 0.4220 [0.1074] AU
Ag = 0.23 [12.61] [-0.06σ]
Teffp = 453 [6079] K [0.01σ]

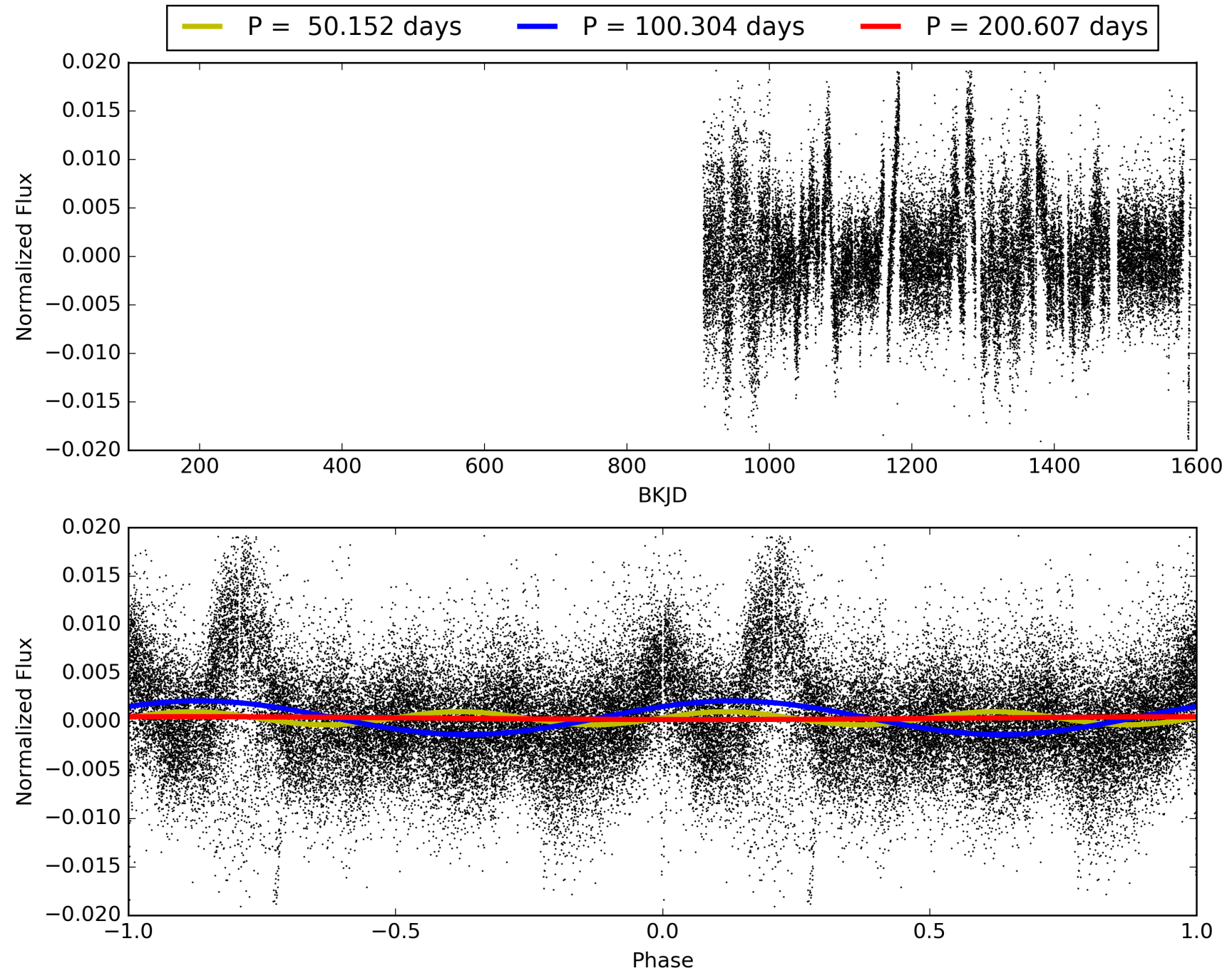
DV Diagnostic Results:

ShortPeriod-sig: 0.5% [0.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 74.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.8678
Centroid-sig: 0.0%
Centroid-so: 3.076 arcsec [588.38σ]
OotOffset-rm: 5.450 arcsec [12.26σ]
KicOffset-rm: 0.555 arcsec [7.81σ]
OotOffset-st: 0/2/1/1 [4]
KicOffset-st: 2/2/1/1 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [6/6]

TCE 008414914-02, PDC Light Curves

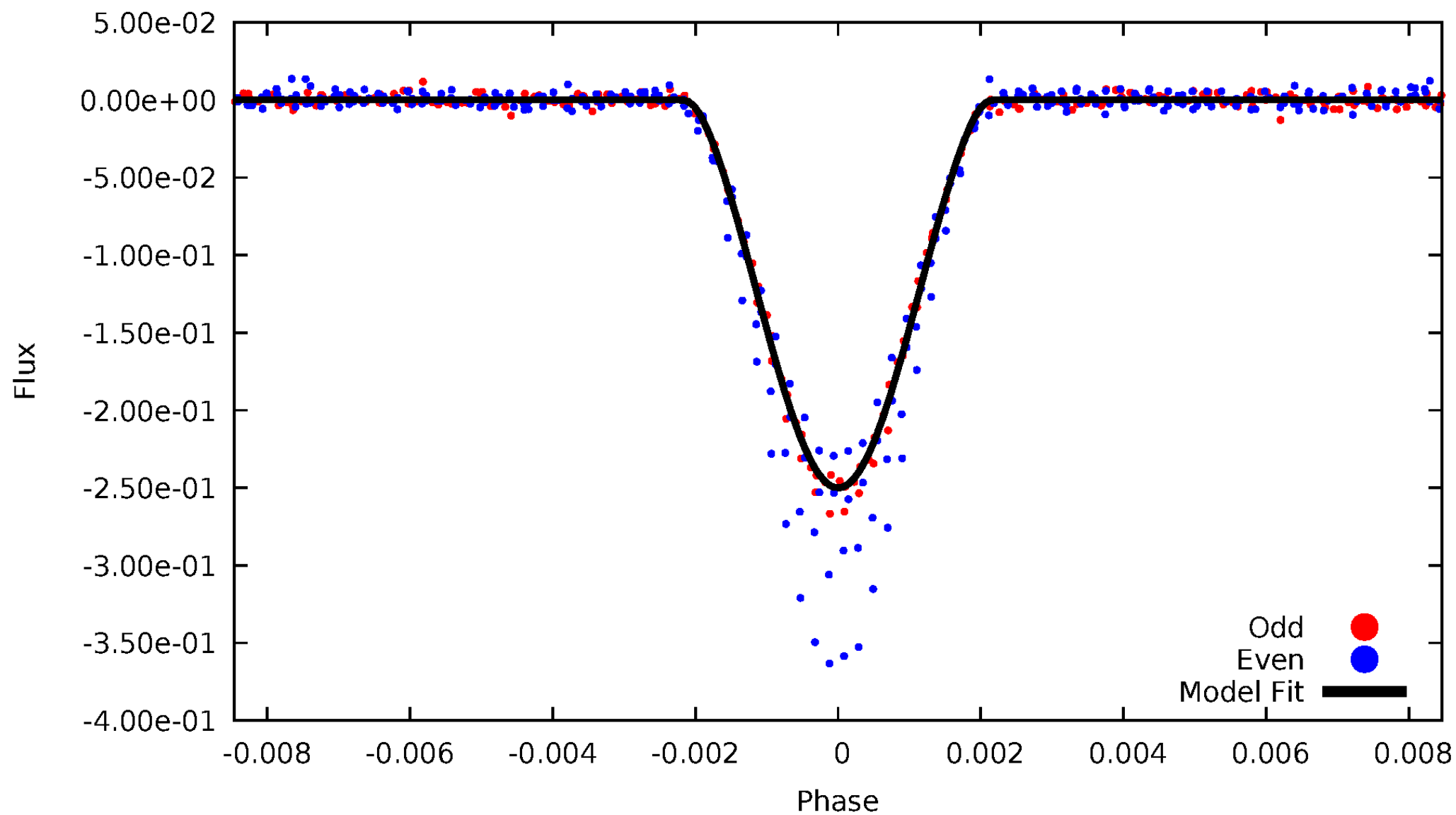


TCE 008414914-02



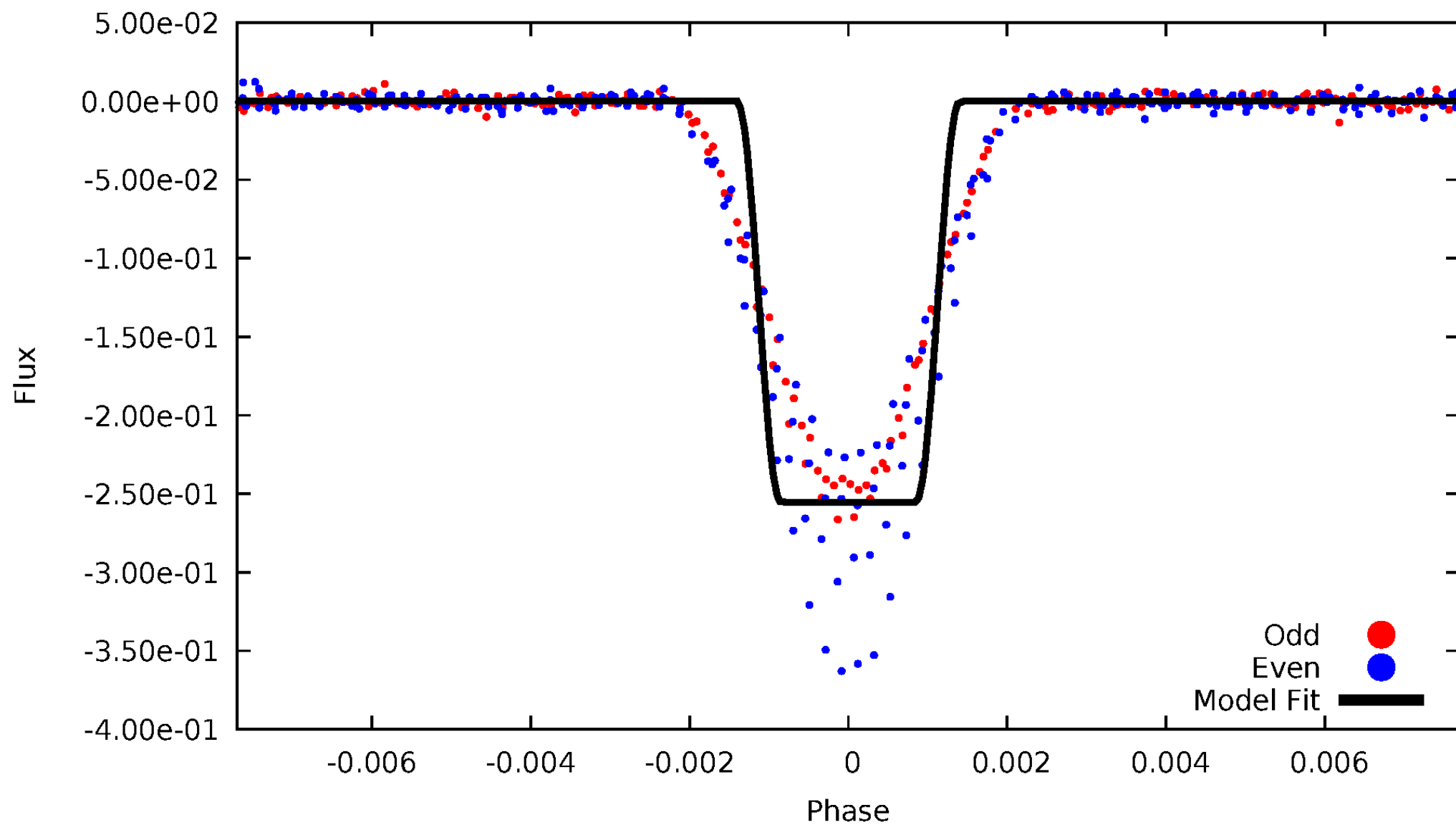
DV Odd/Even

TCE 008414914-02



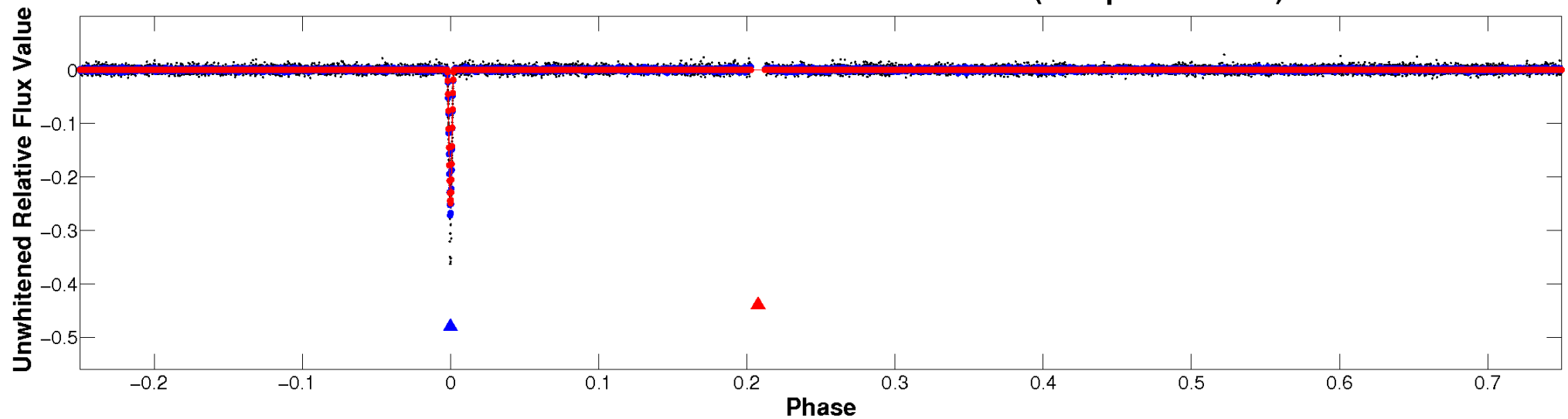
ALT Odd/Even

TCE 008414914-02

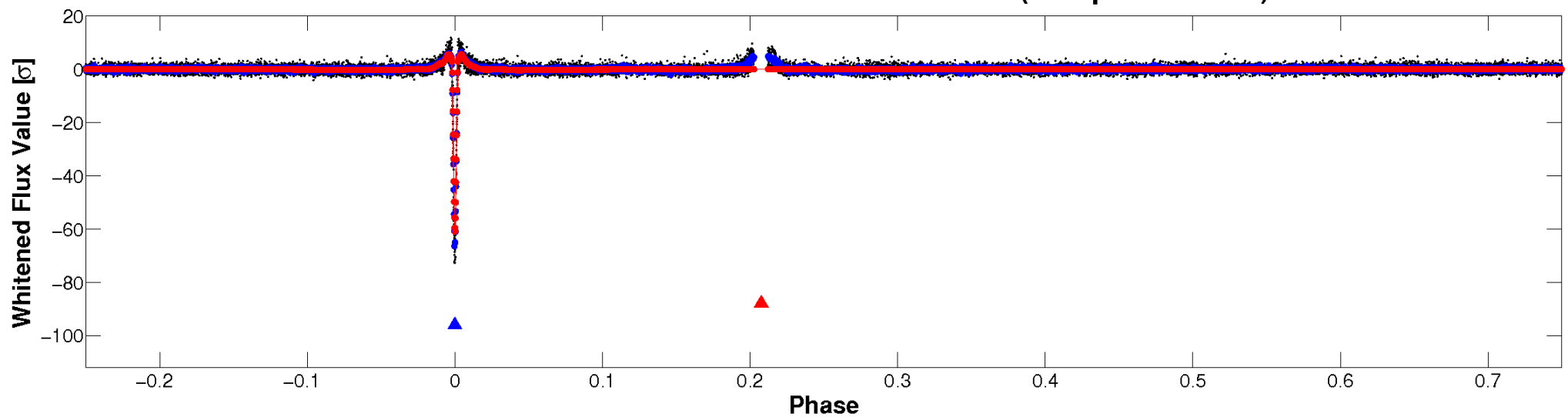


Non-Whitened Vs. Whitened Light Curve

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

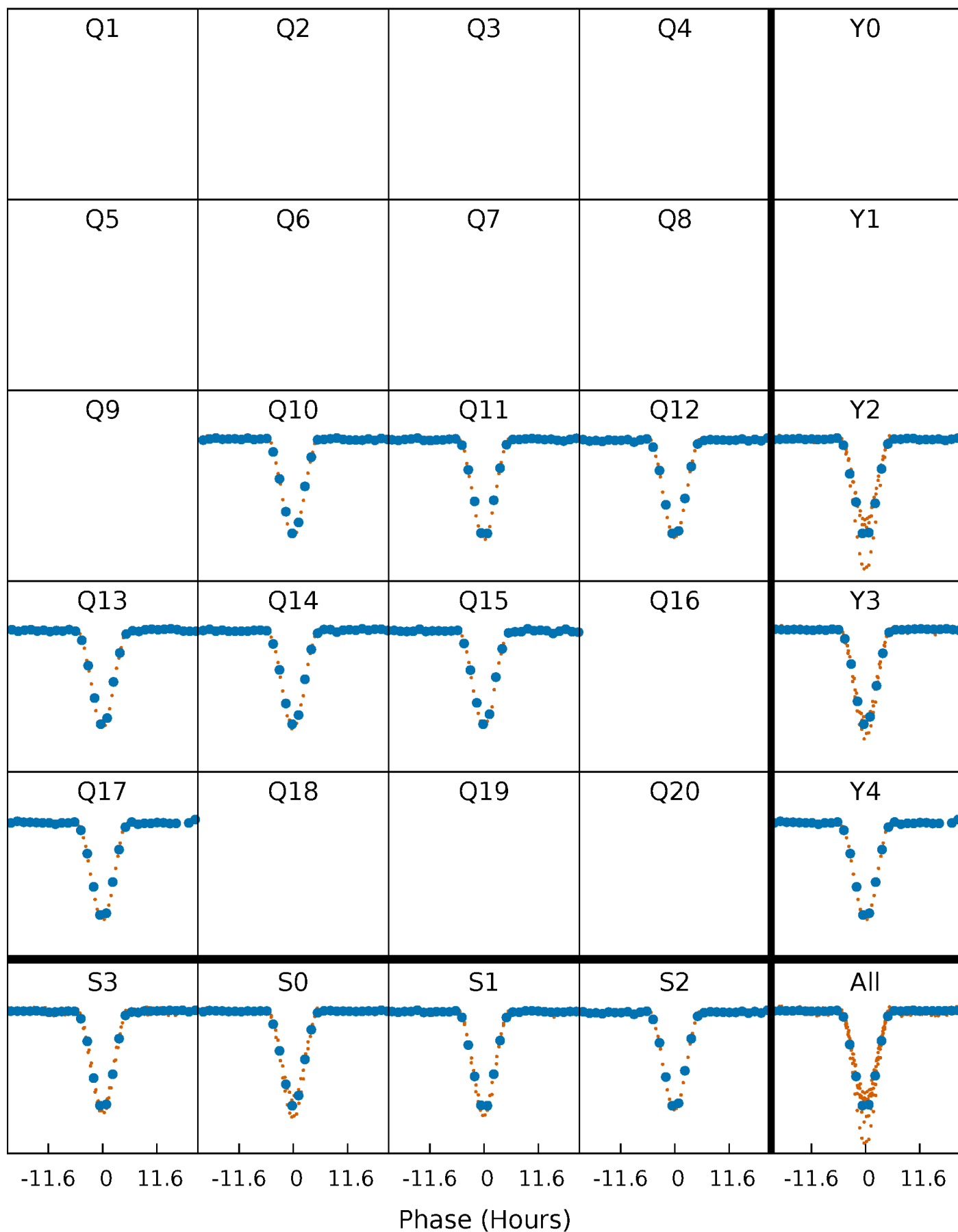


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



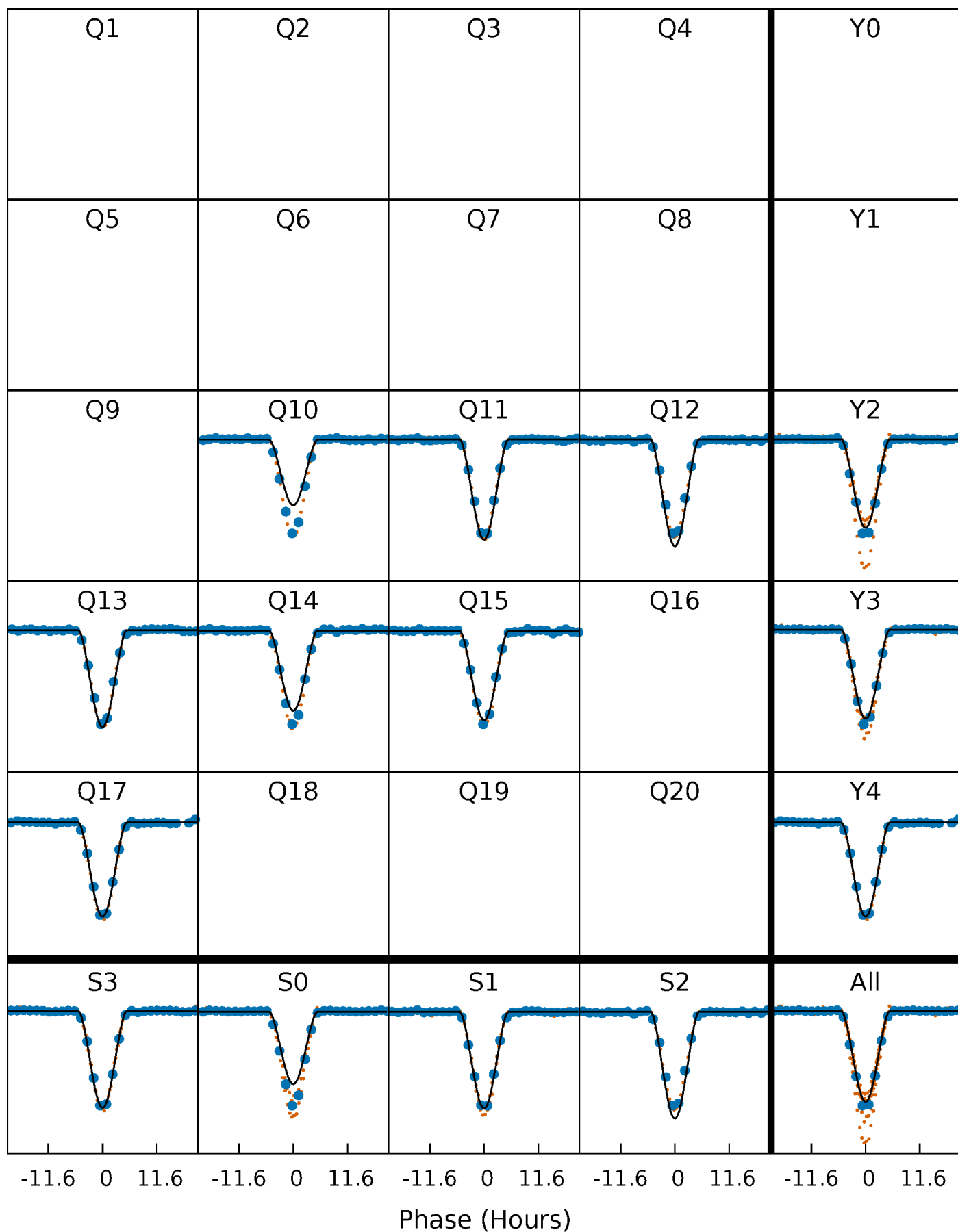
PDC Quarter-Phased Transit Curves

TCE 008414914-02 P=100.303526 Days $T_0=155.943371$ (BKJD)



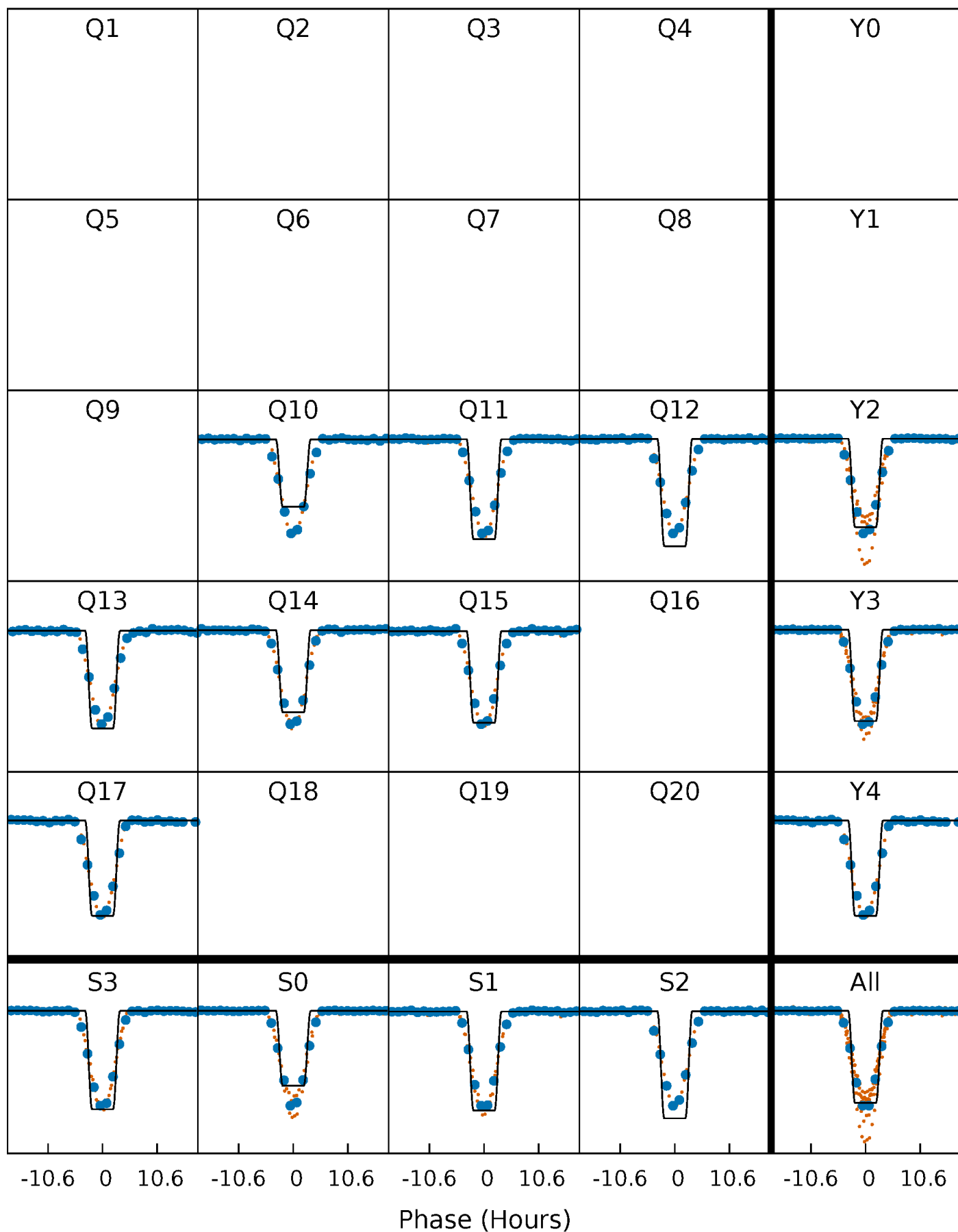
DV Quarter-Phased Transit Curves

TCE 008414914-02 P=100.303526 Days $T_0=155.943371$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

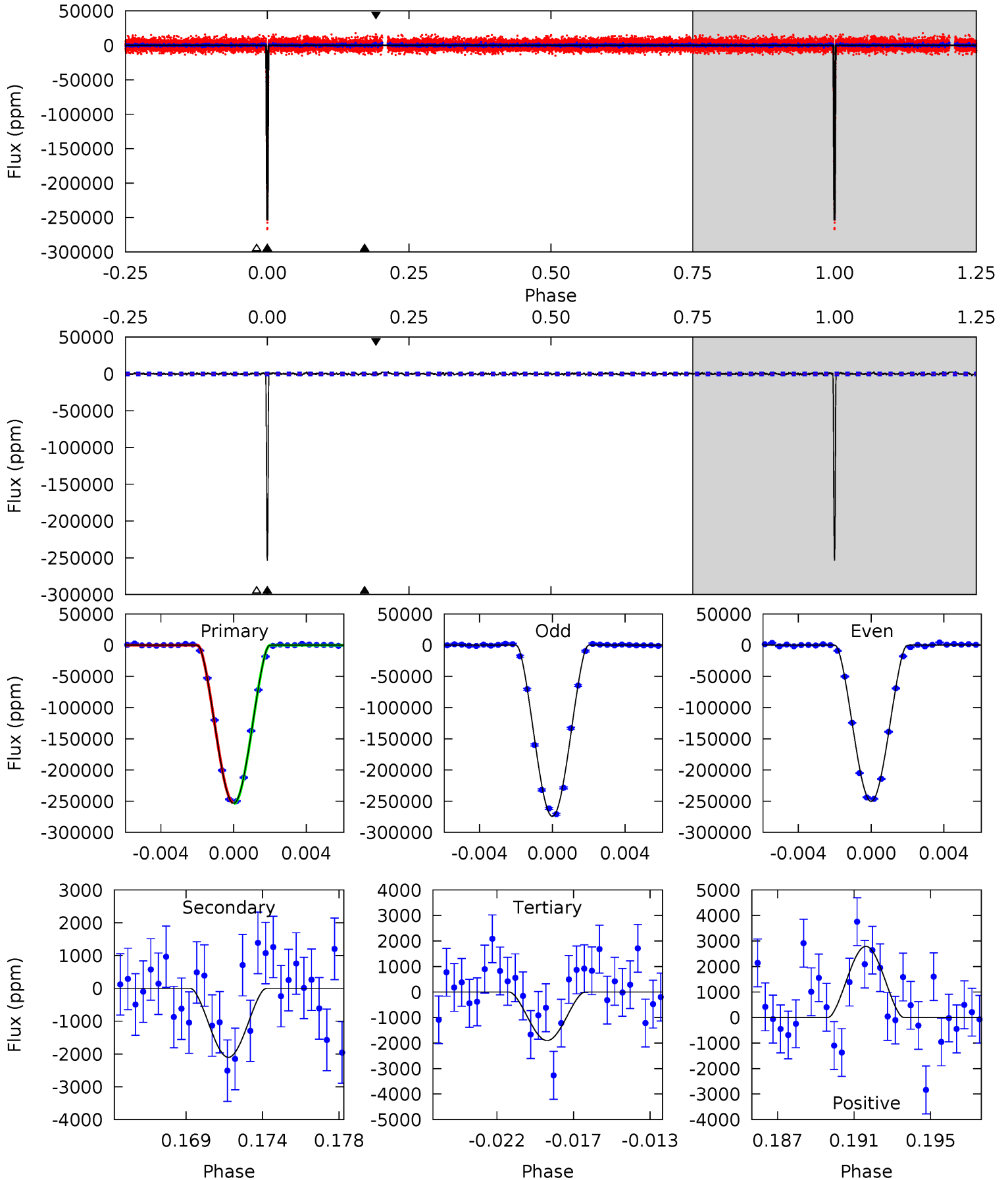
TCE 008414914-02 P=100.304619 Days $T_0=155.931079$ (BKJD)



DV Model-Shift Uniqueness Test

008414914-02, P = 100.303526 Days, E = 155.943371 Days

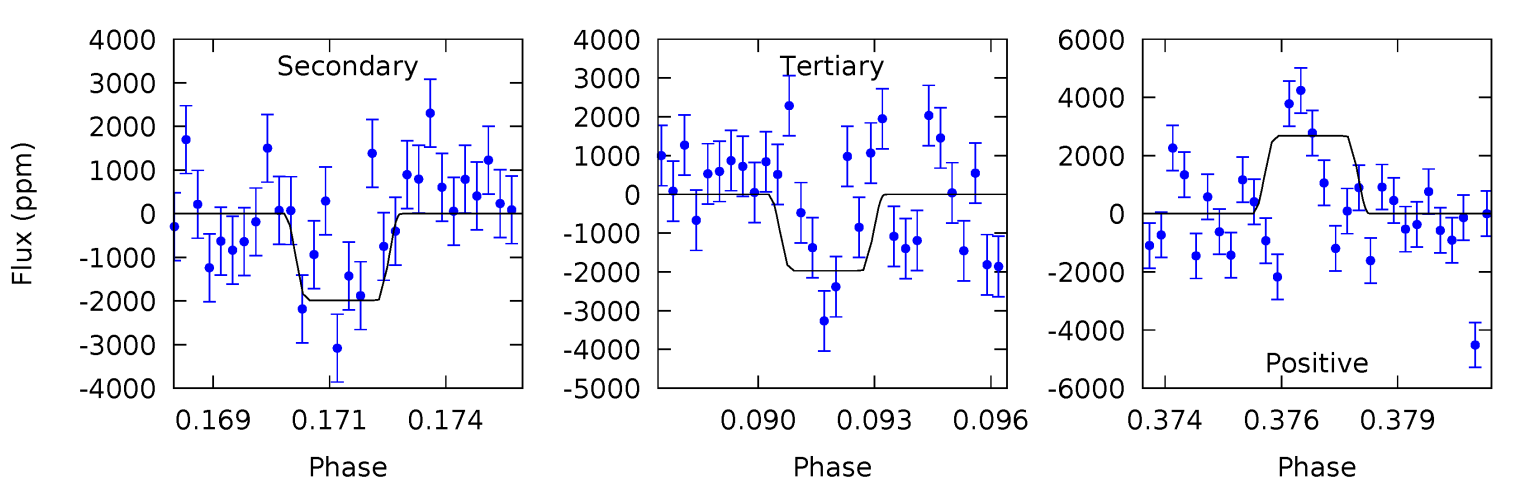
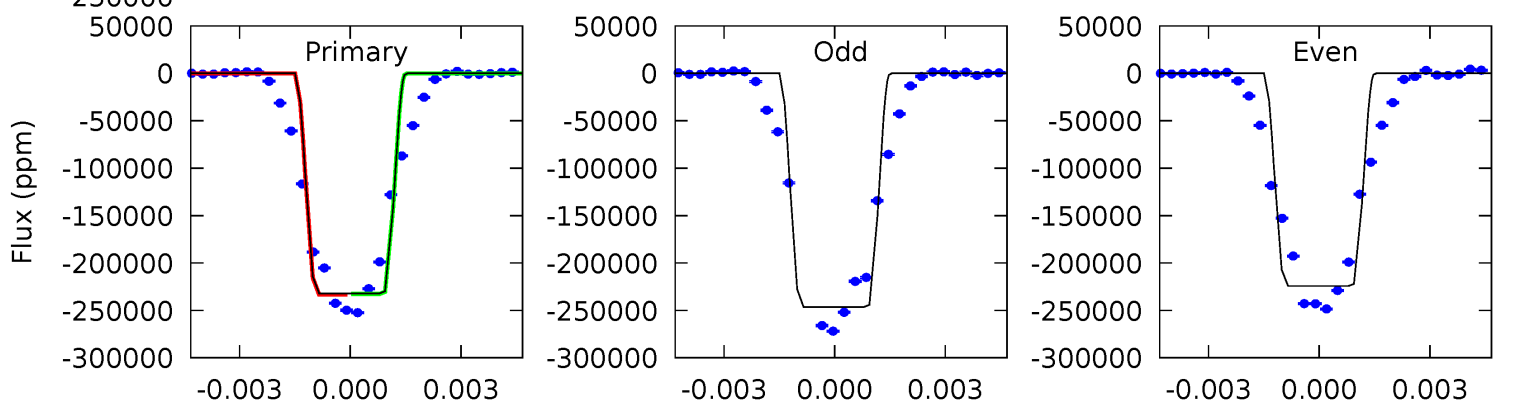
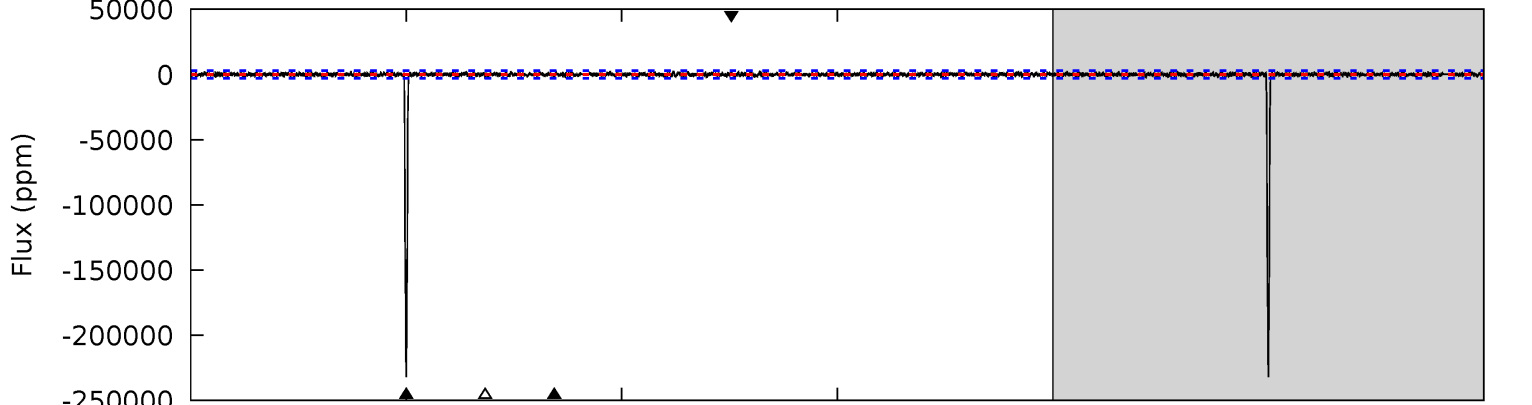
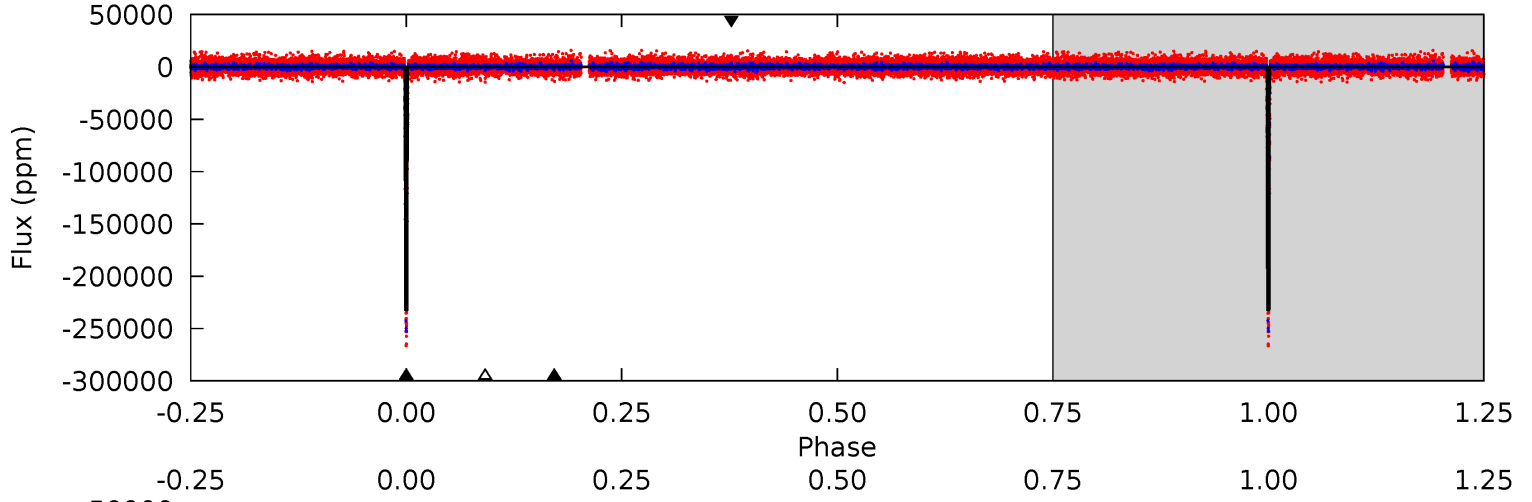
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
710.4	5.89	5.33	7.82	5.18	2.85	1.83	705.0	702.6	0.56	-1.93	34.3	1.06	0.01	2.58



Alt Model-Shift Uniqueness Test

008414914-02, P = 100.304619 Days, E = 155.931079 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
410.4	3.52	3.49	4.73	5.26	2.99	1.07	406.9	405.6	0.03	-1.22	19.6	1.05	0.01	0



Stellar Parameters For KIC 008414914

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6060^{+210}_{-231}	$4.397^{+0.105}_{-0.195}$	$-0.180^{+0.300}_{-0.300}$	$1.046^{+0.323}_{-0.162}$	$0.994^{+0.154}_{-0.112}$	$1.223^{+0.592}_{-0.643}$
	+3%/-4%	+2%/-4%	+167%/-167%	+31%/-15%	+15%/-11%	+48%/-53%
Source	KIC0	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 008414914-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2102 ± 357	$78.35^{+20.53}_{-15.94}$	595^{+43}_{-37}	2443^{+153}_{-117}	33^{+22}_{-13}
Alt.	-1988 ± 566	$59.61^{+17.57}_{-15.88}$	595^{+47}_{-35}	2615^{+243}_{-189}	56^{+52}_{-27}

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

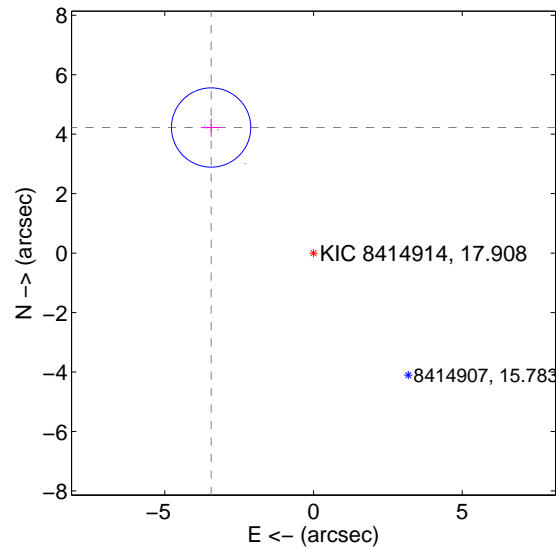
Supplemental centroid analysis for 008414914-02. Kepler magnitude: 17.91. Transit SNR 315.63

There are 6 quarters with good PRF difference image offsets

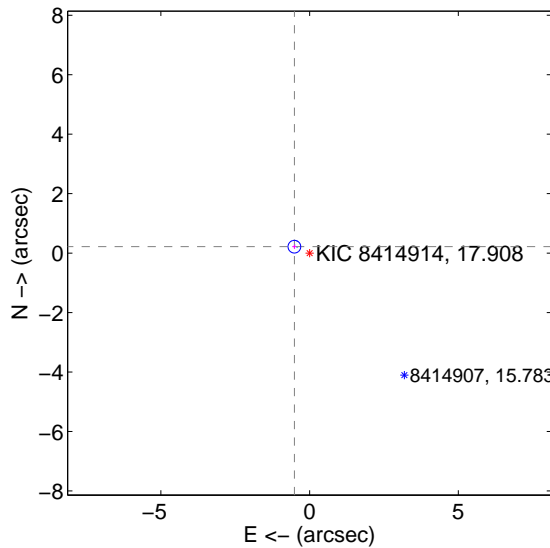
The OOT PRF centroid is offset from the target star catalog position by about 5.10 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.450 ± 0.444	12.26	3.443 ± 0.338	4.224 ± 0.308
PRF-fit source offset from KIC position	0.555 ± 0.071	7.81	0.512 ± 0.070	0.216 ± 0.076
photometric centroid source offset	3.08 ± 0.01	588.38	-1.73 ± 0.01	-2.54 ± 0.01

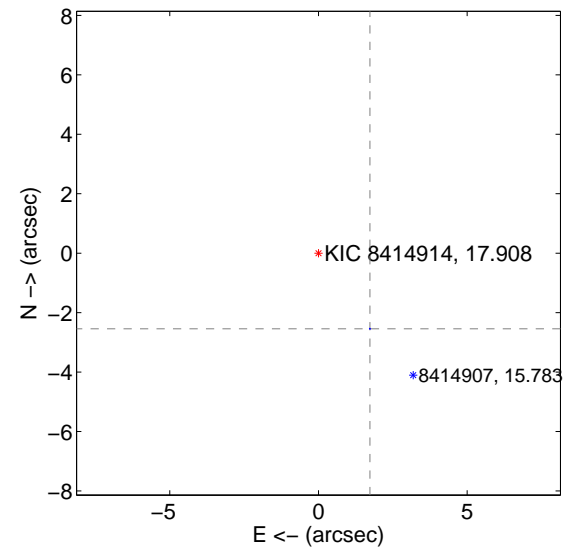
offset from difference PRF-fit to OOT PRF-fit



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.

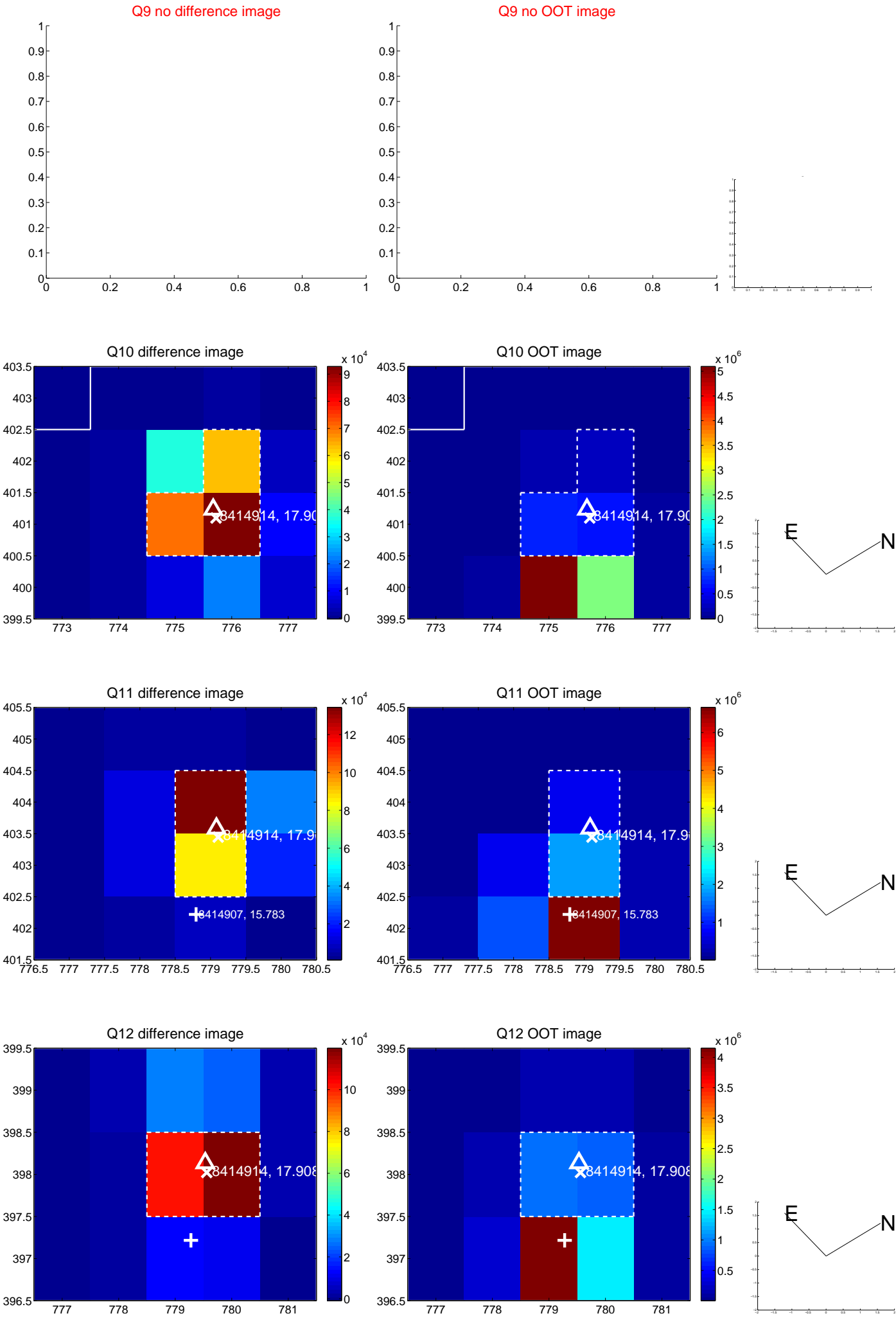
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



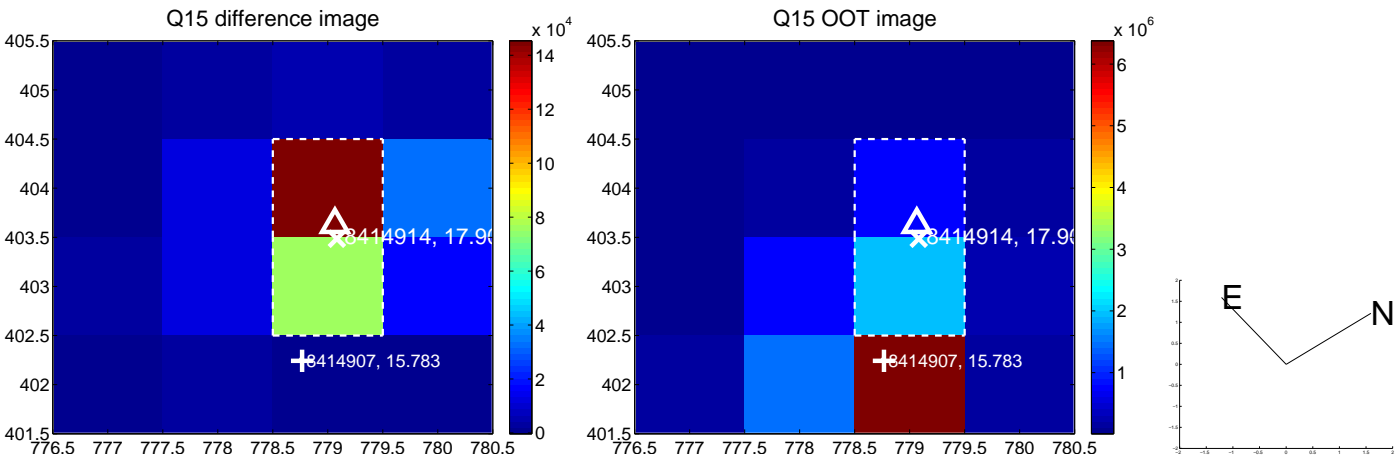
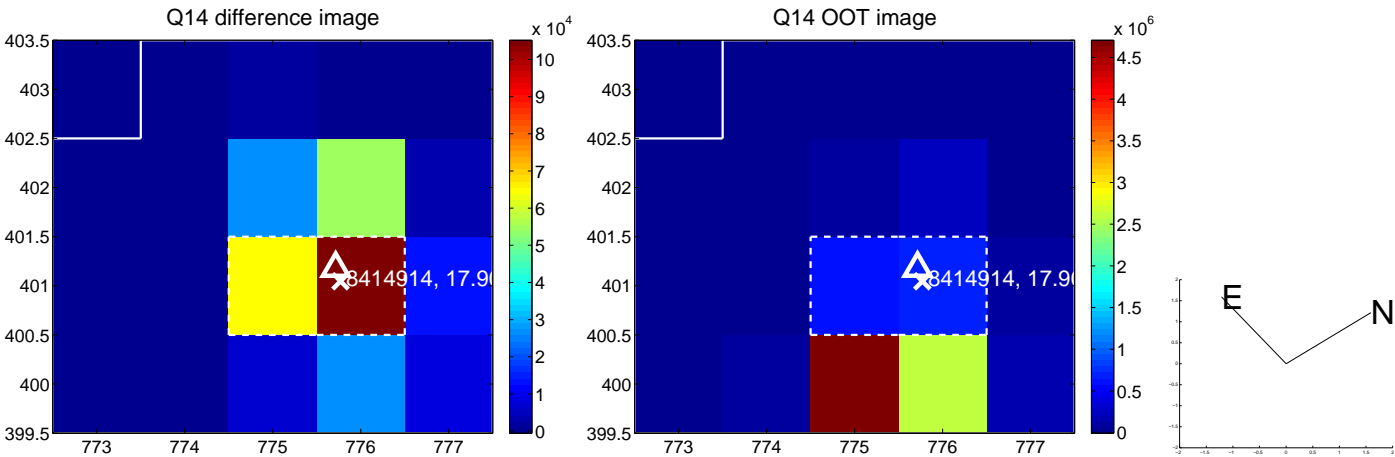
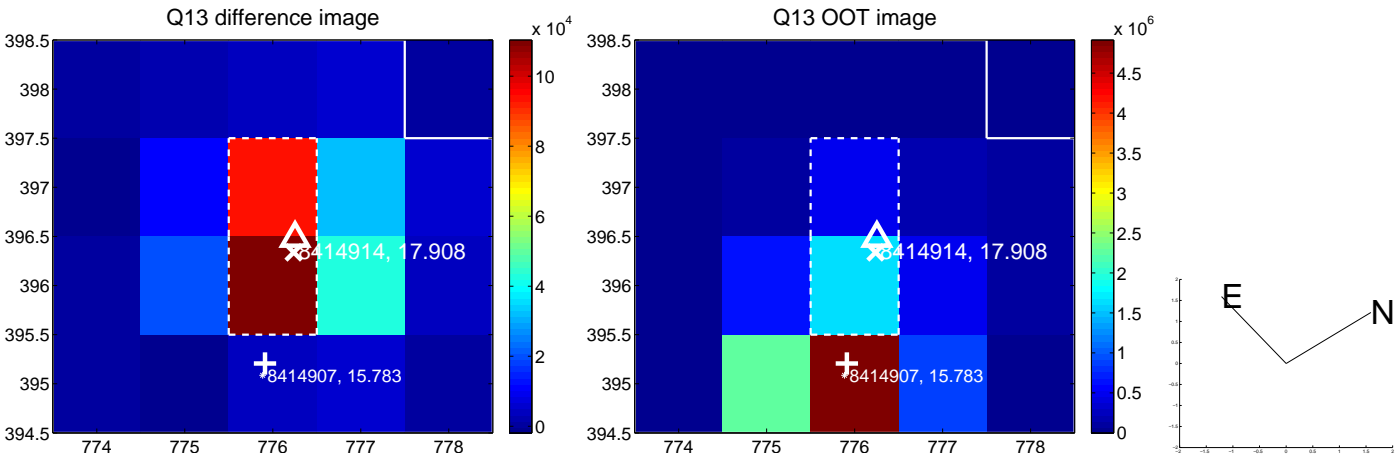
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



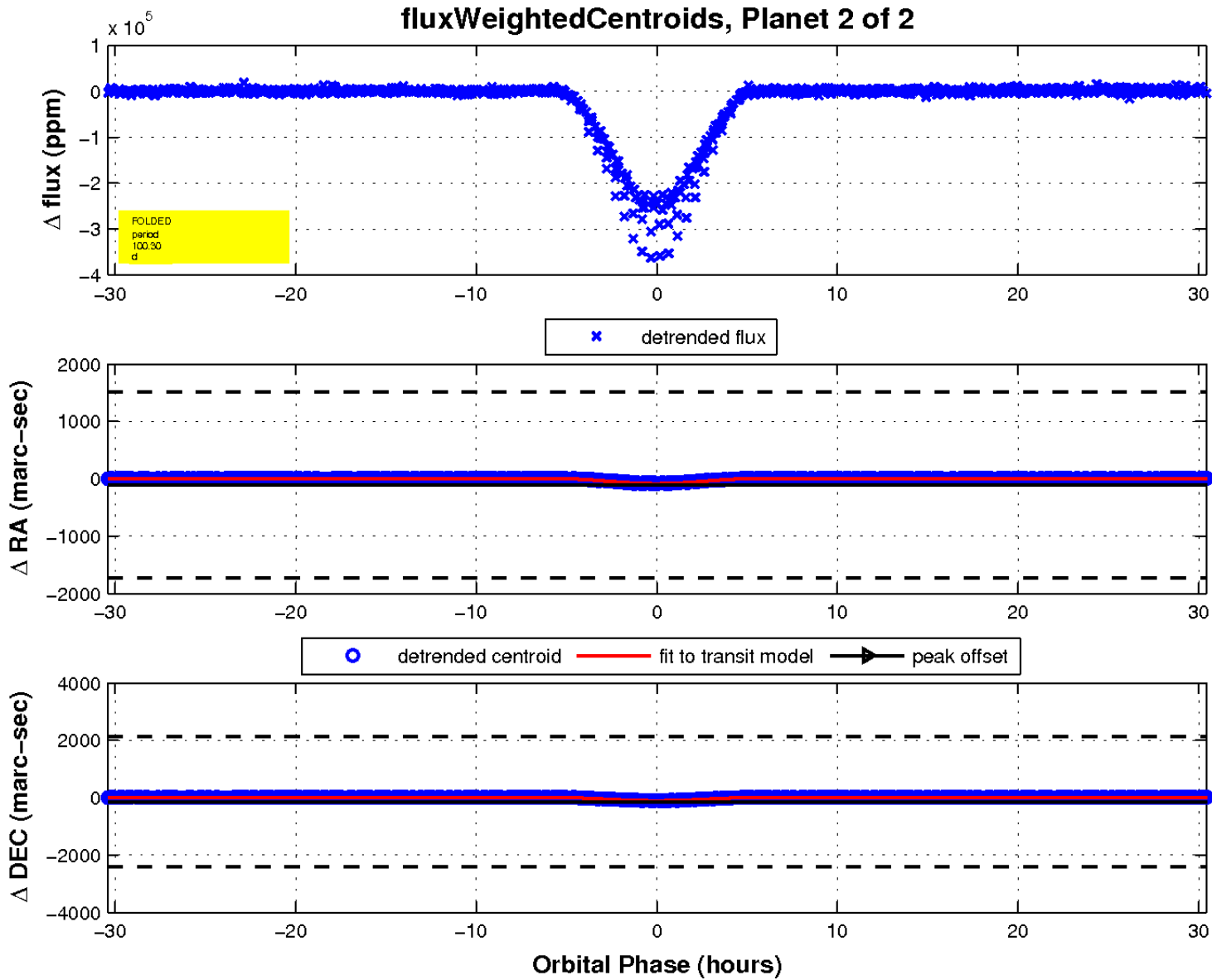
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

