

KIC 009025914

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})
009025914-01	OBS	3596.01	11.320289	131.802866	244839.9	4.832	2326.2	1647.9	1.13	6153	86.67	175.95
009025914-02	OBS	No	11.320288	140.134131	37411.5	5.806	385.9	369.8	1.13	6153	31.30	175.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009025914-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
009025914-02	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.

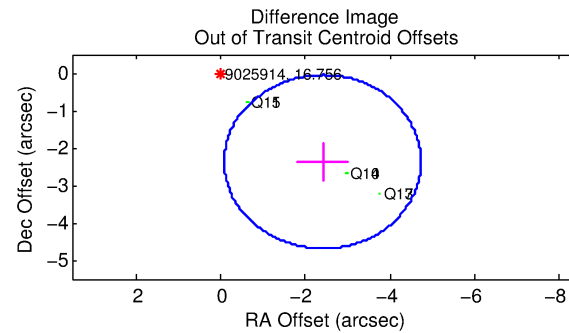
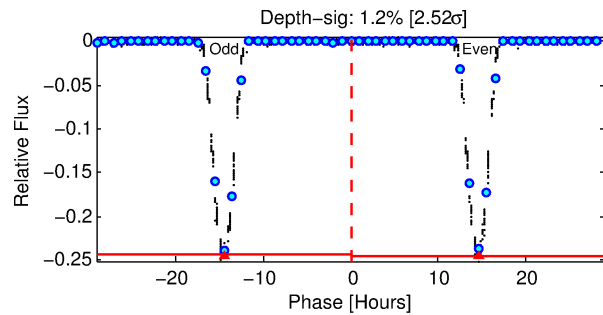
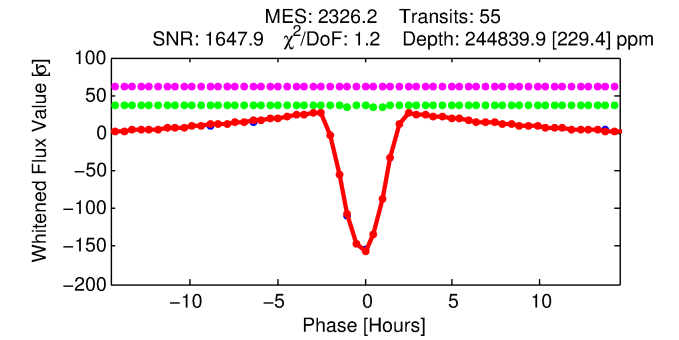
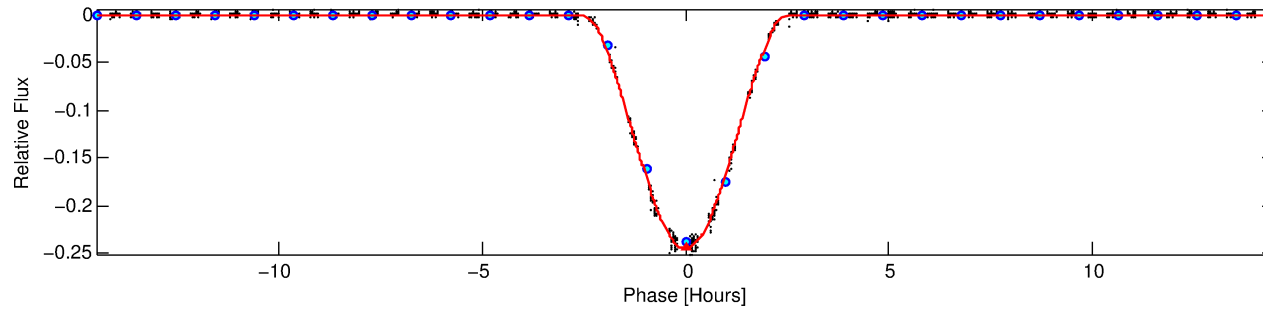
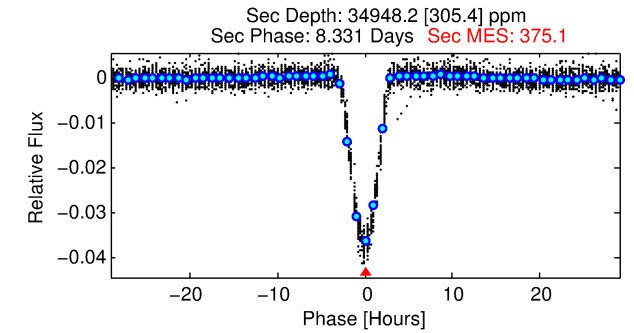
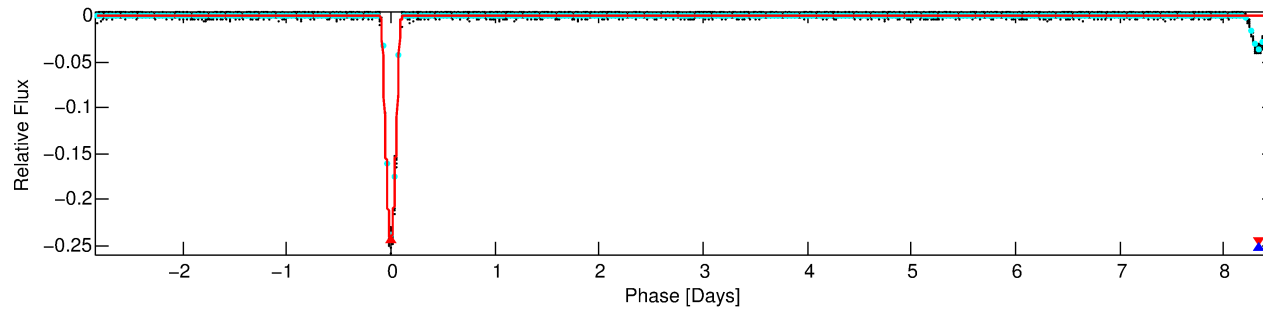
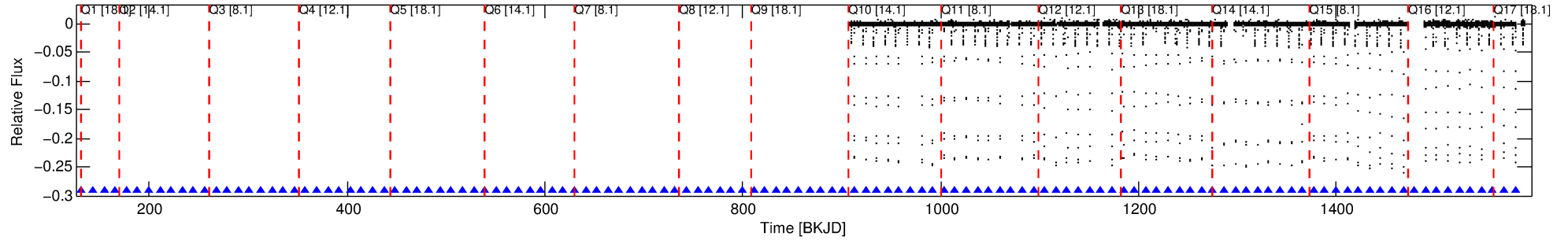
Ephemeris Match Information For 009025914-01

No Significant Match Found

DV One-Page Summary

KIC: 9025914 Candidate: 1 of 2 Period: 11.320 d
KOI: K03596.01 Corr: 0.994

Kp: 16.76 R*: 1.13 Rs Teff: 6153.0 K Logg: 4.30 Fe/H: -0.440



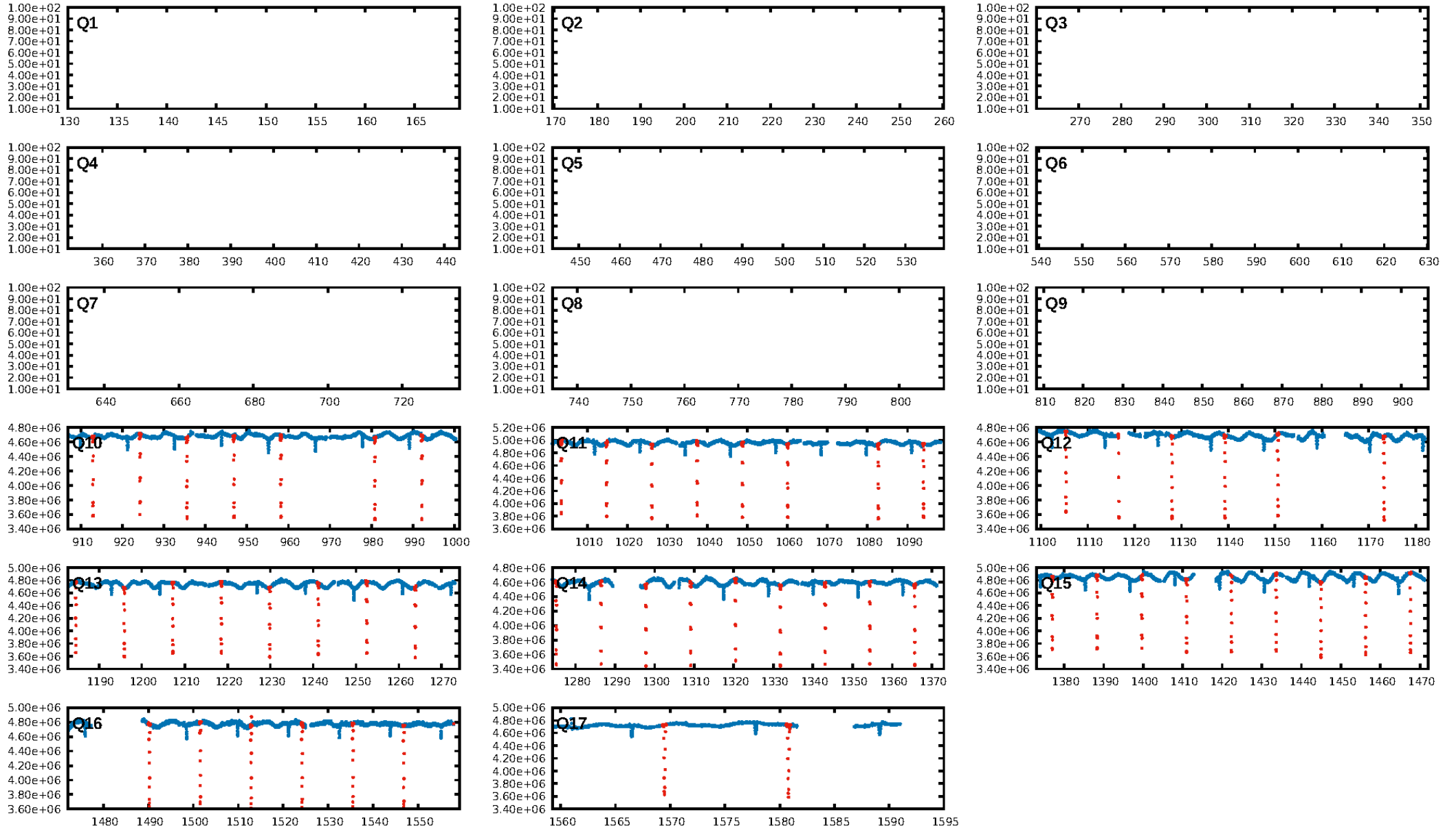
DV Fit Results:

Period = 11.32029 [0.00000] d
Epoch = 131.8029 [0.0002] BKJD
Rp/R* = 0.7047 [0.0206]
a/R* = 25.82 [0.16]
b = 0.91 [0.03]
Seff = 175.95 [64.13]
Teff = 929 [85] K
Rp = 86.67 [23.67] Re
a = 0.0963 [0.0219] AU
Ag = 23.73 [7.96] [2.85σ]
Teffp = 3169 [131] K [14.38σ]

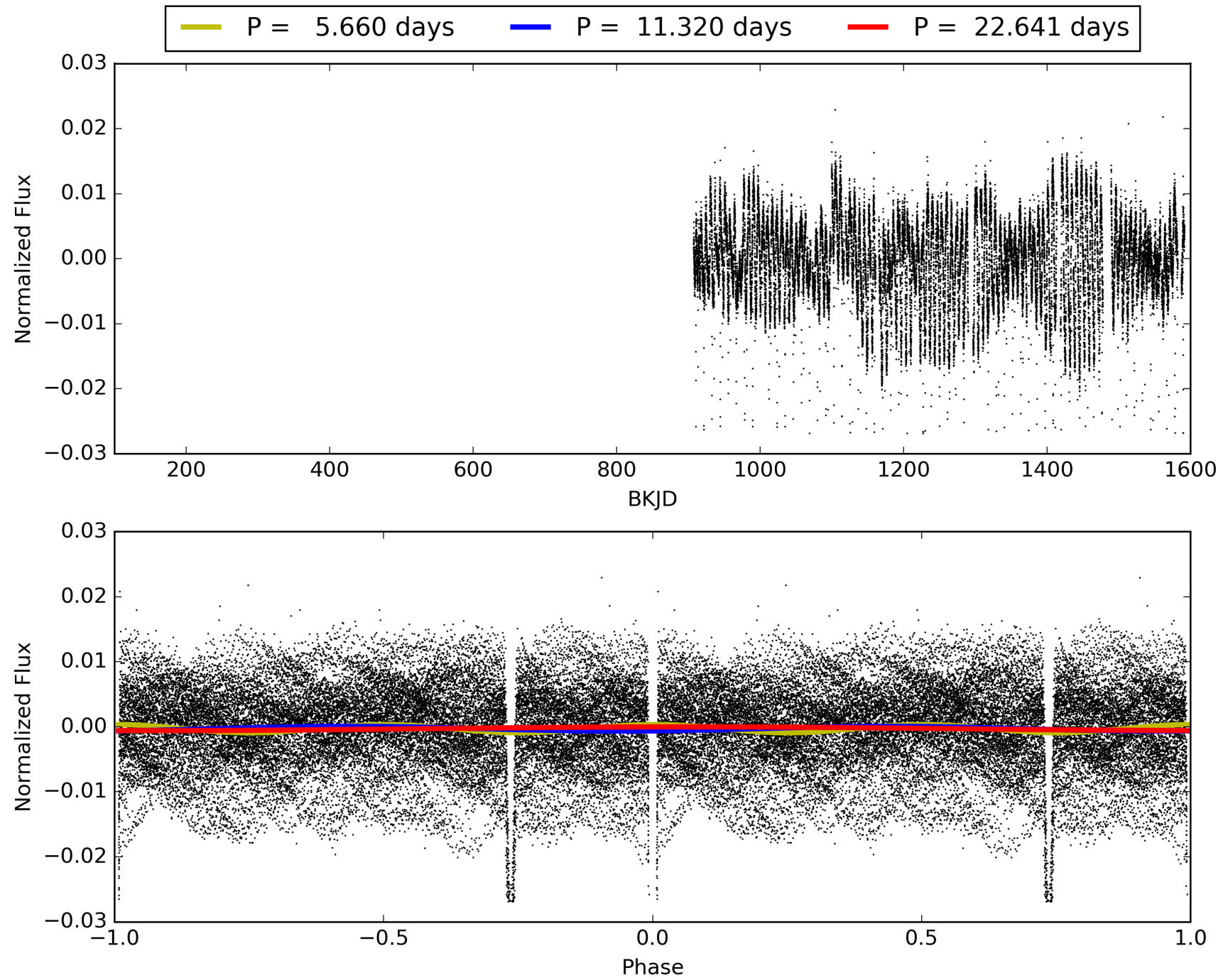
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [53/53]
GhostDiagnostic-chr: 2.025
Centroid-sig: 0.0%
Centroid-so: 1.321 arcsec [440.94σ]
OotOffset-rm: 3.381 arcsec [4.37σ]
KicOffset-rm: 0.098 arcsec [1.44σ]
OotOffset-st: 2/2/0/2 [6]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 009025914-01, PDC Light Curves

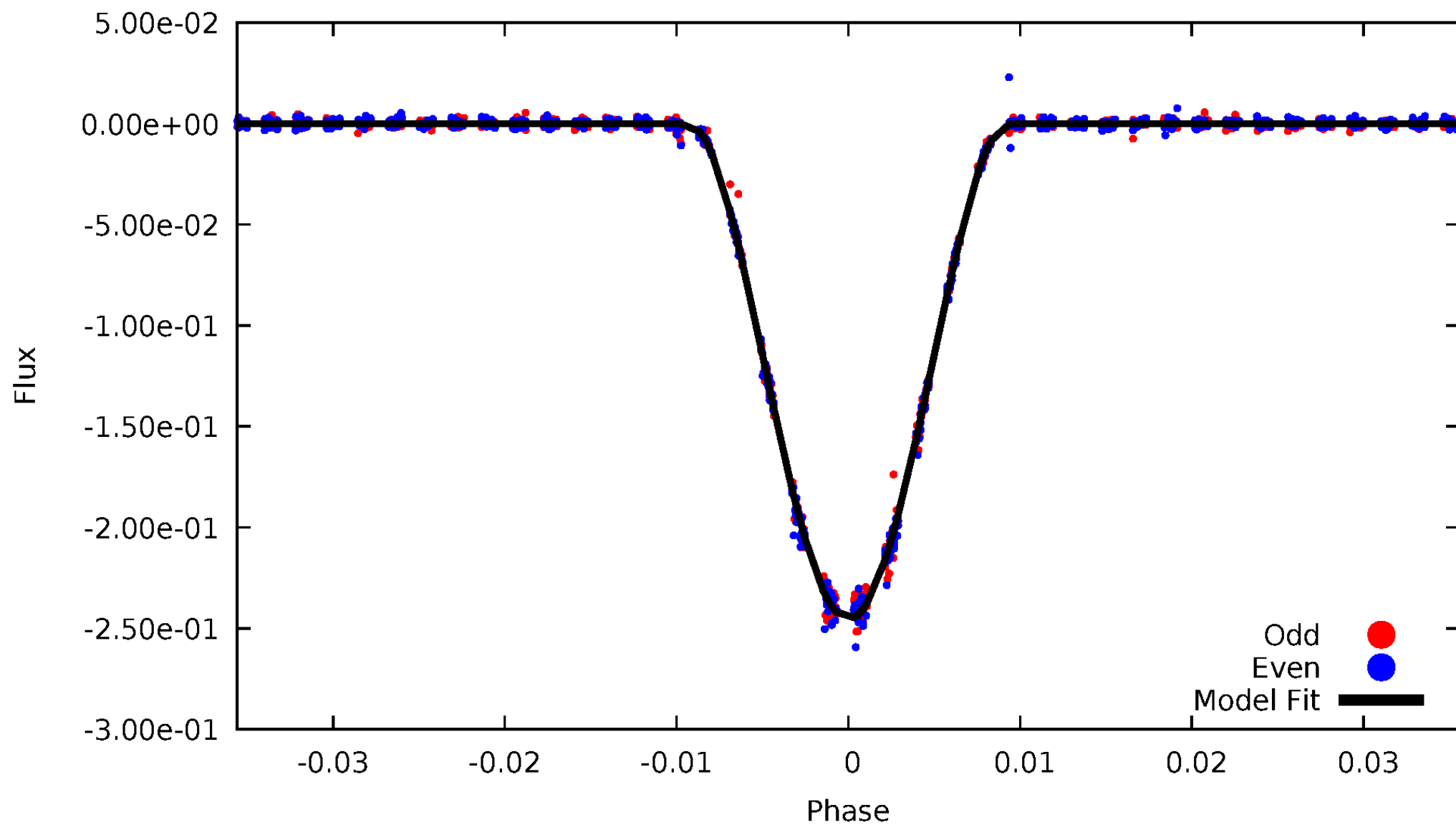


TCE 009025914-01



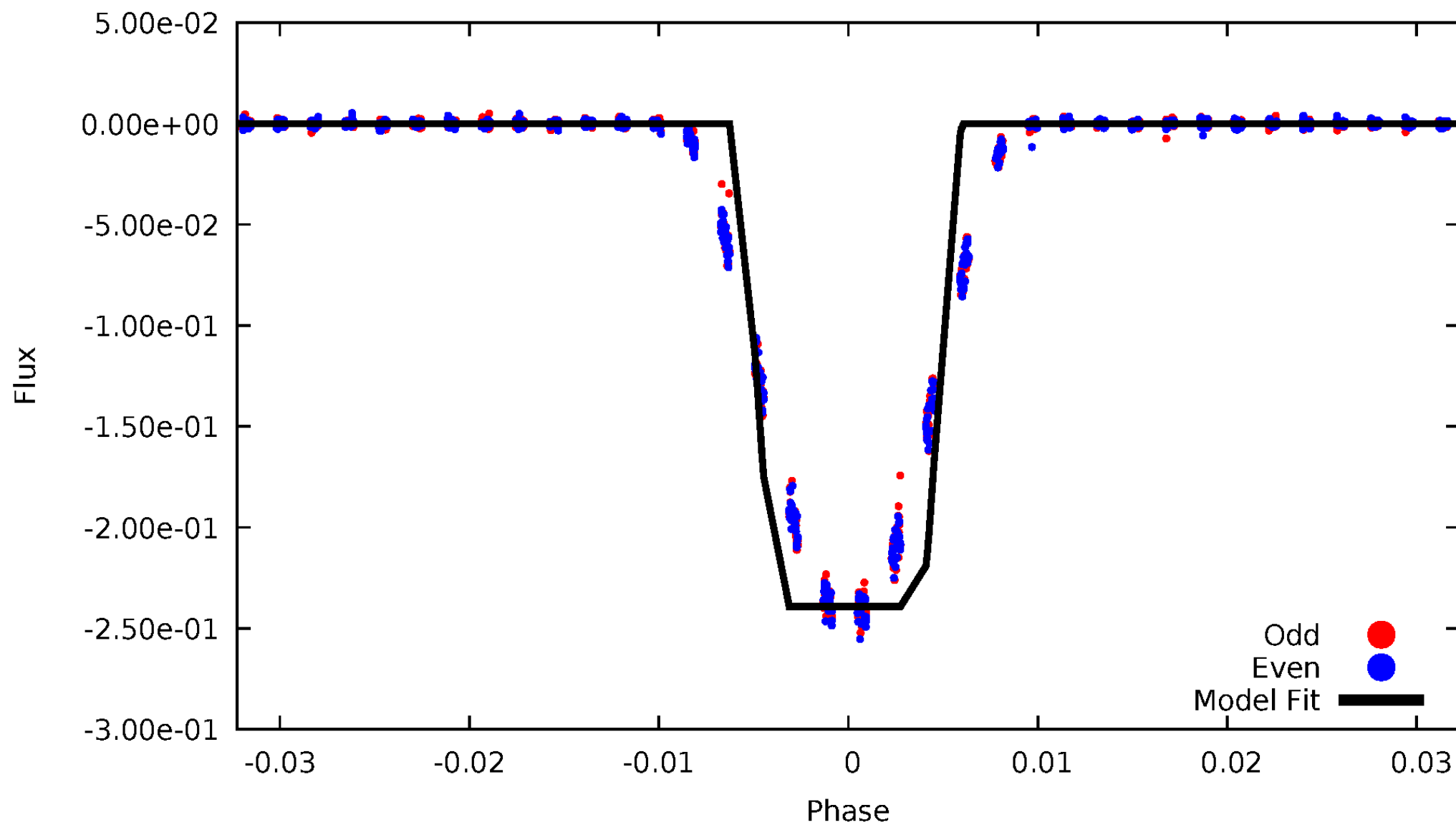
DV Odd/Even

TCE 009025914-01



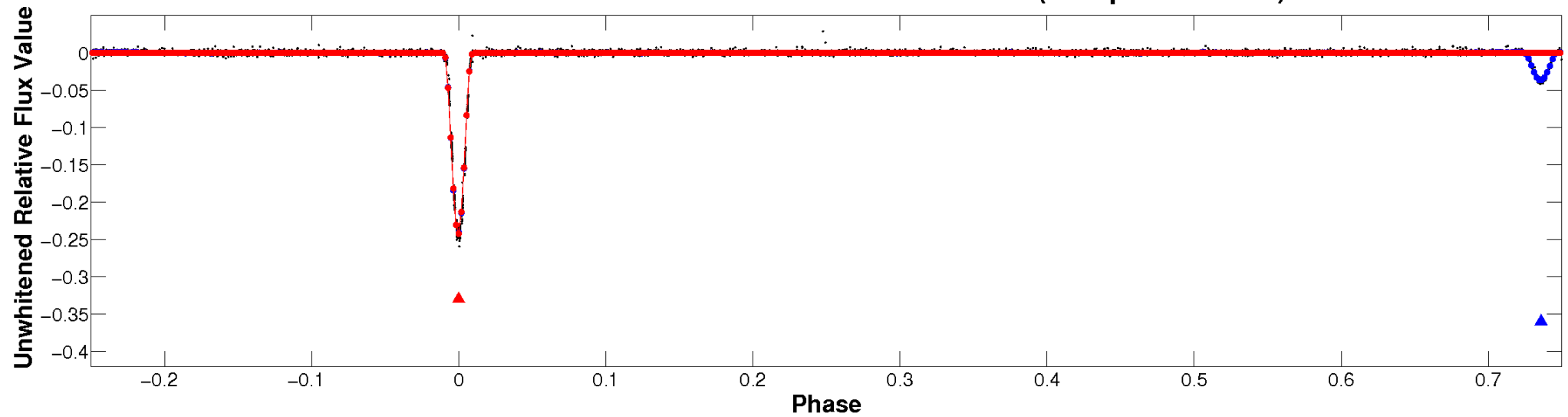
ALT Odd/Even

TCE 009025914-01

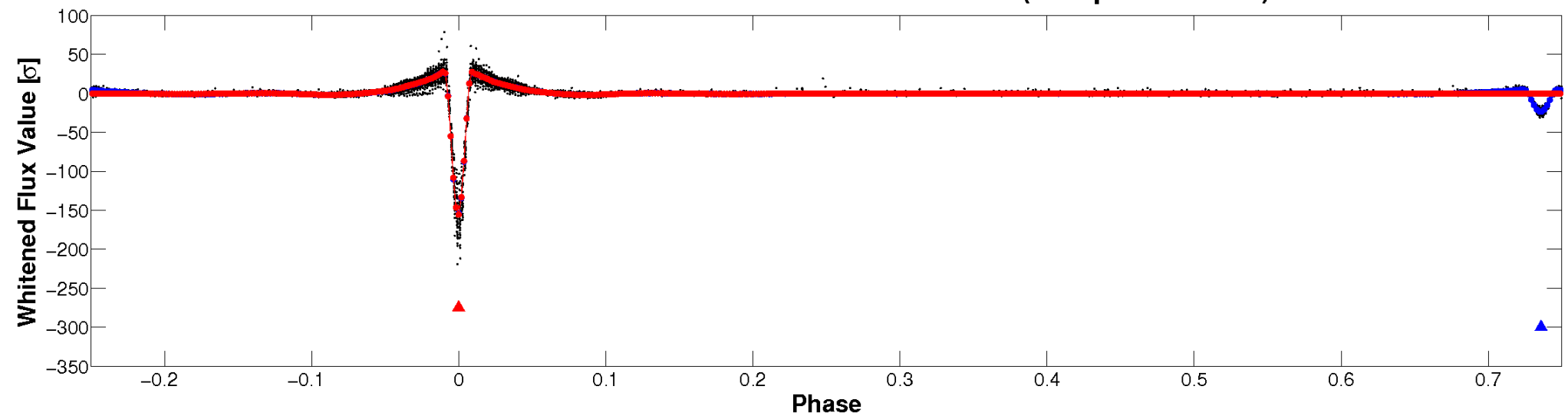


Non-Whitened Vs. Whitened Light Curve

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

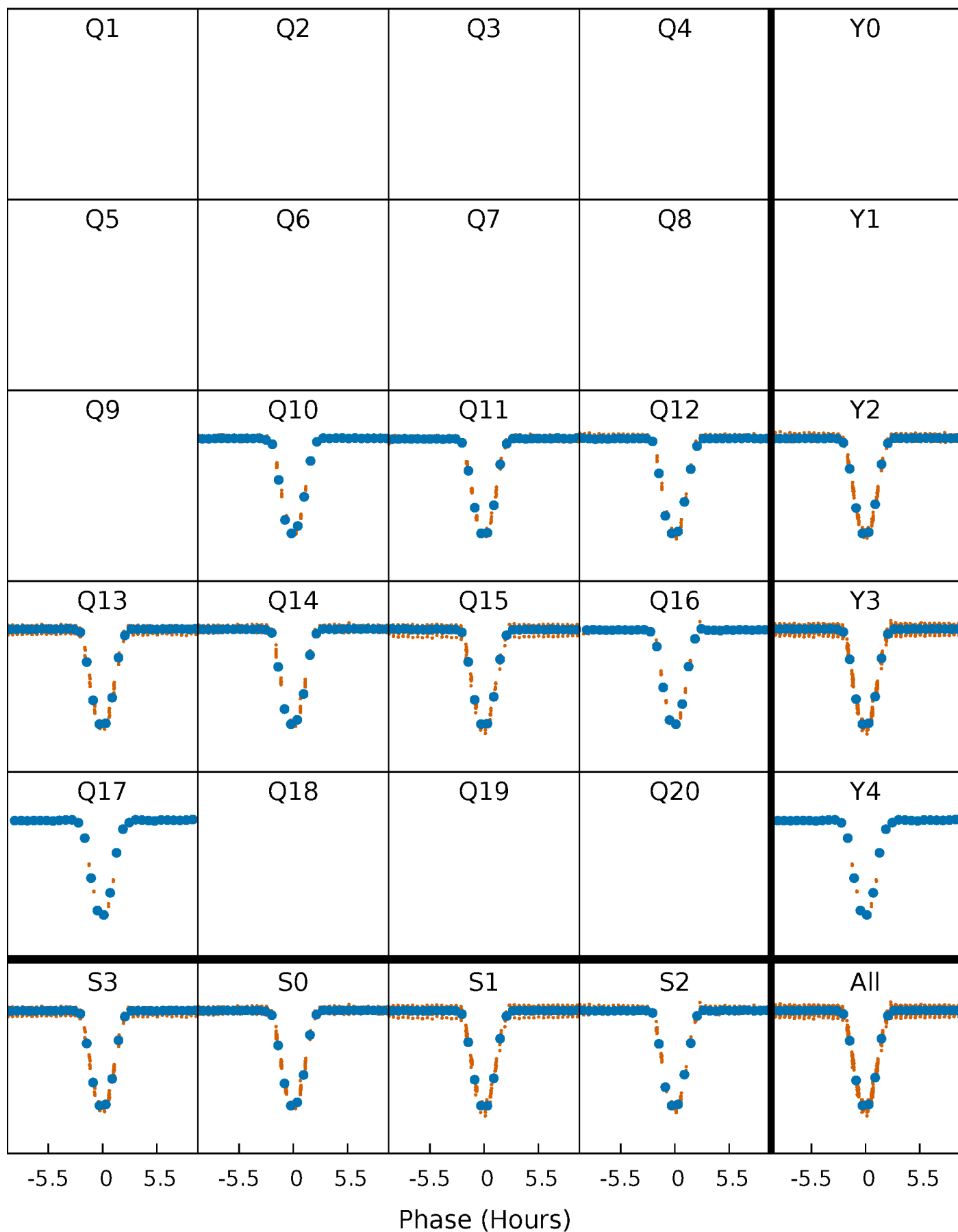


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



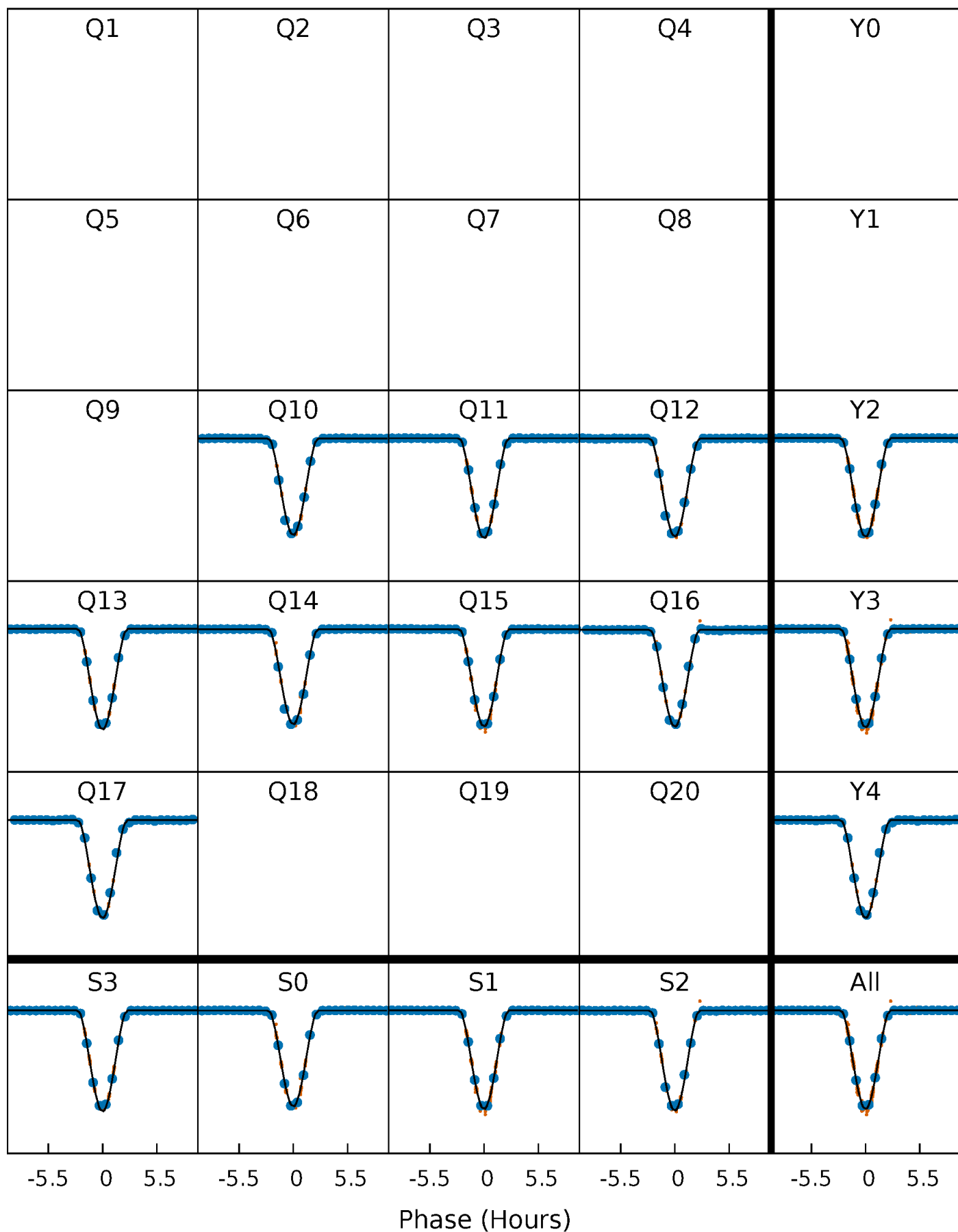
PDC Quarter-Phased Transit Curves

TCE 009025914-01 P= 11.320289 Days $T_0=131.802866$ (BKJD)



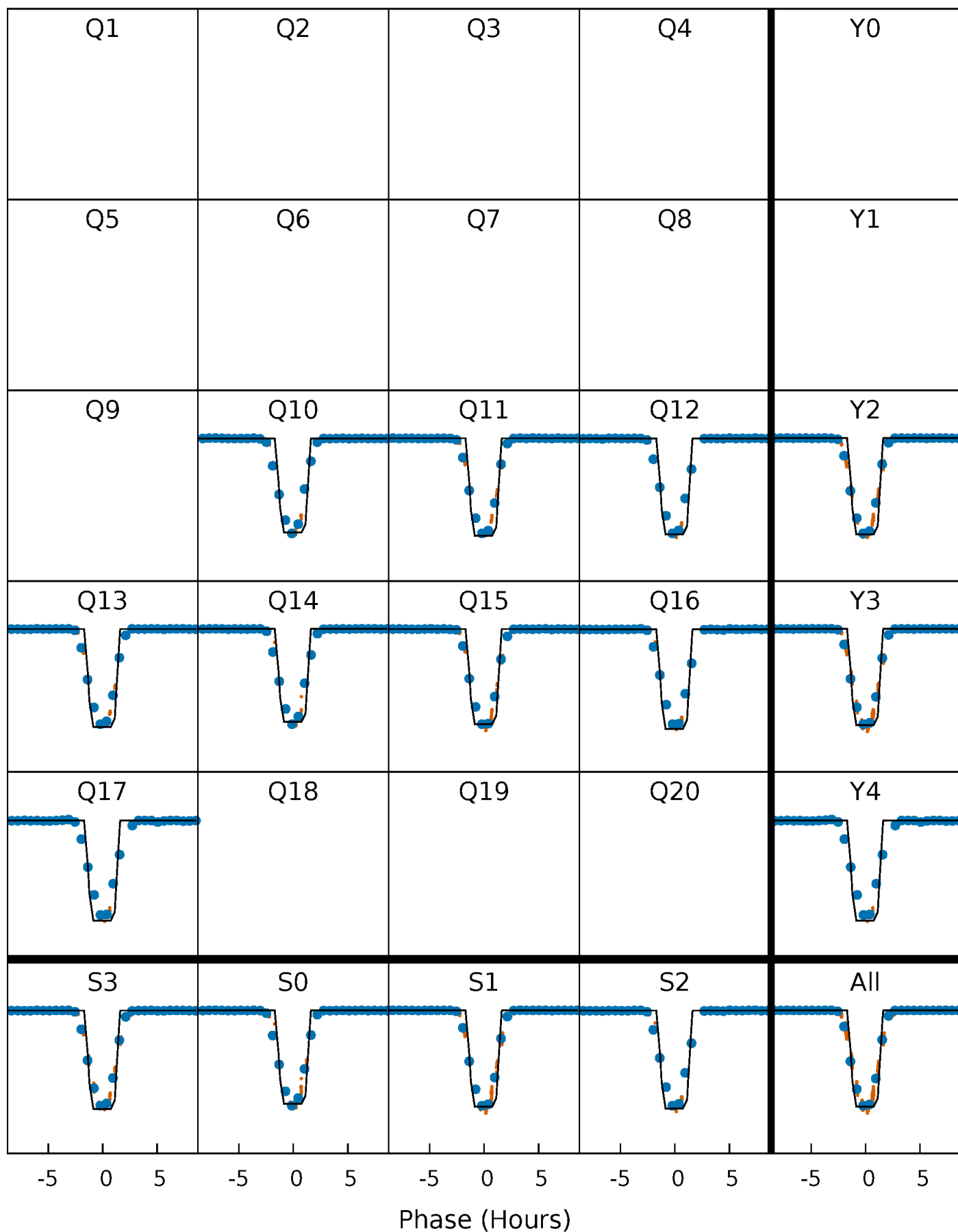
DV Quarter-Phased Transit Curves

TCE 009025914-01 P= 11.320289 Days $T_0=131.802866$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

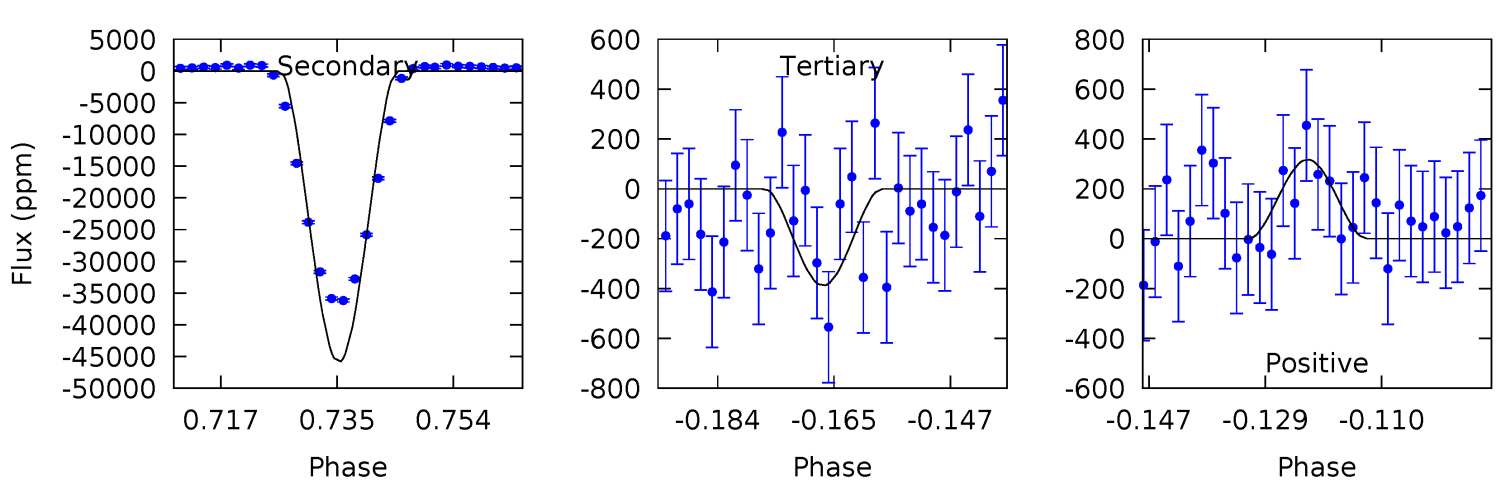
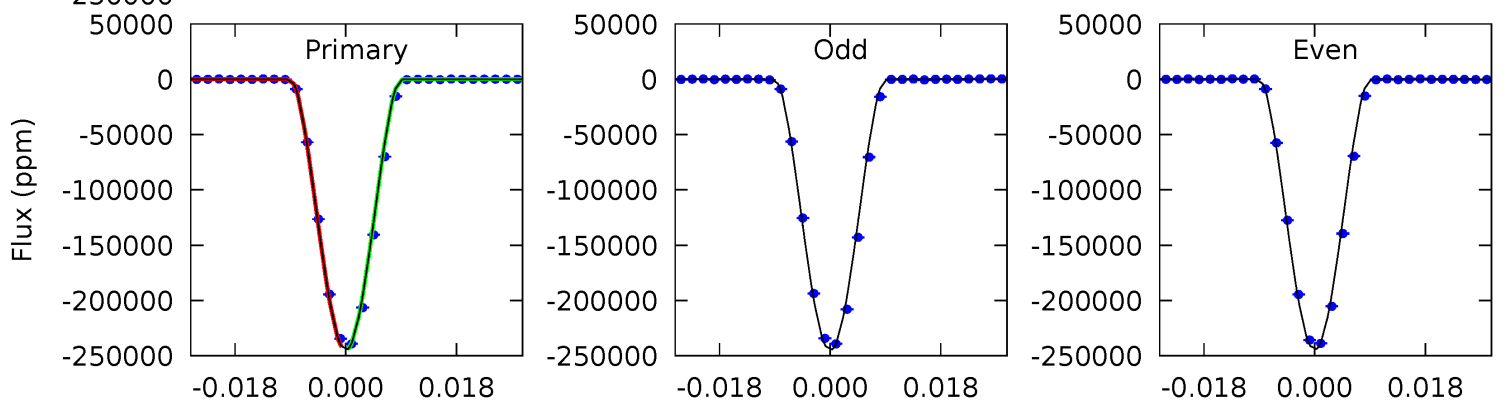
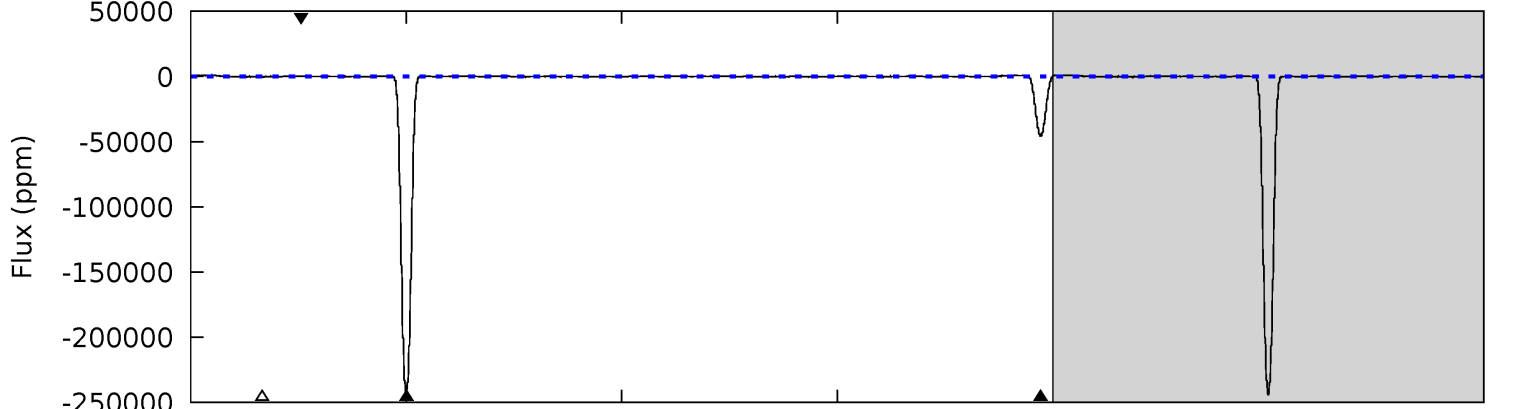
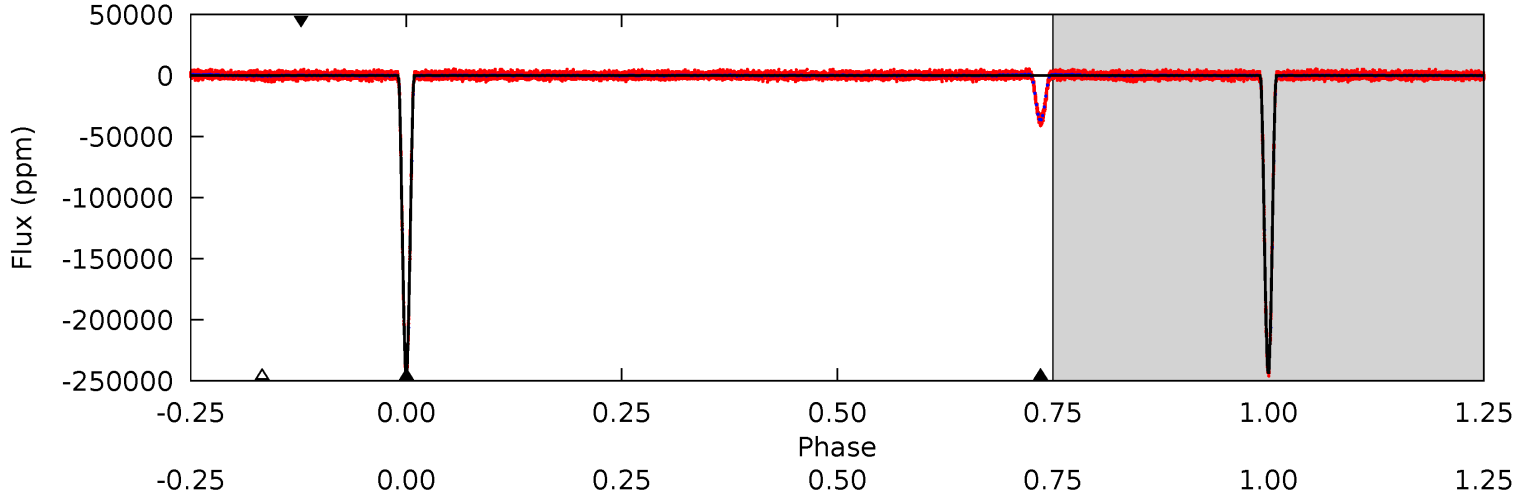
TCE 009025914-01 P= 11.320196 Days $T_0=131.811919$ (BKJD)



DV Model-Shift Uniqueness Test

009025914-01, P = 11.320289 Days, E = 131.802866 Days

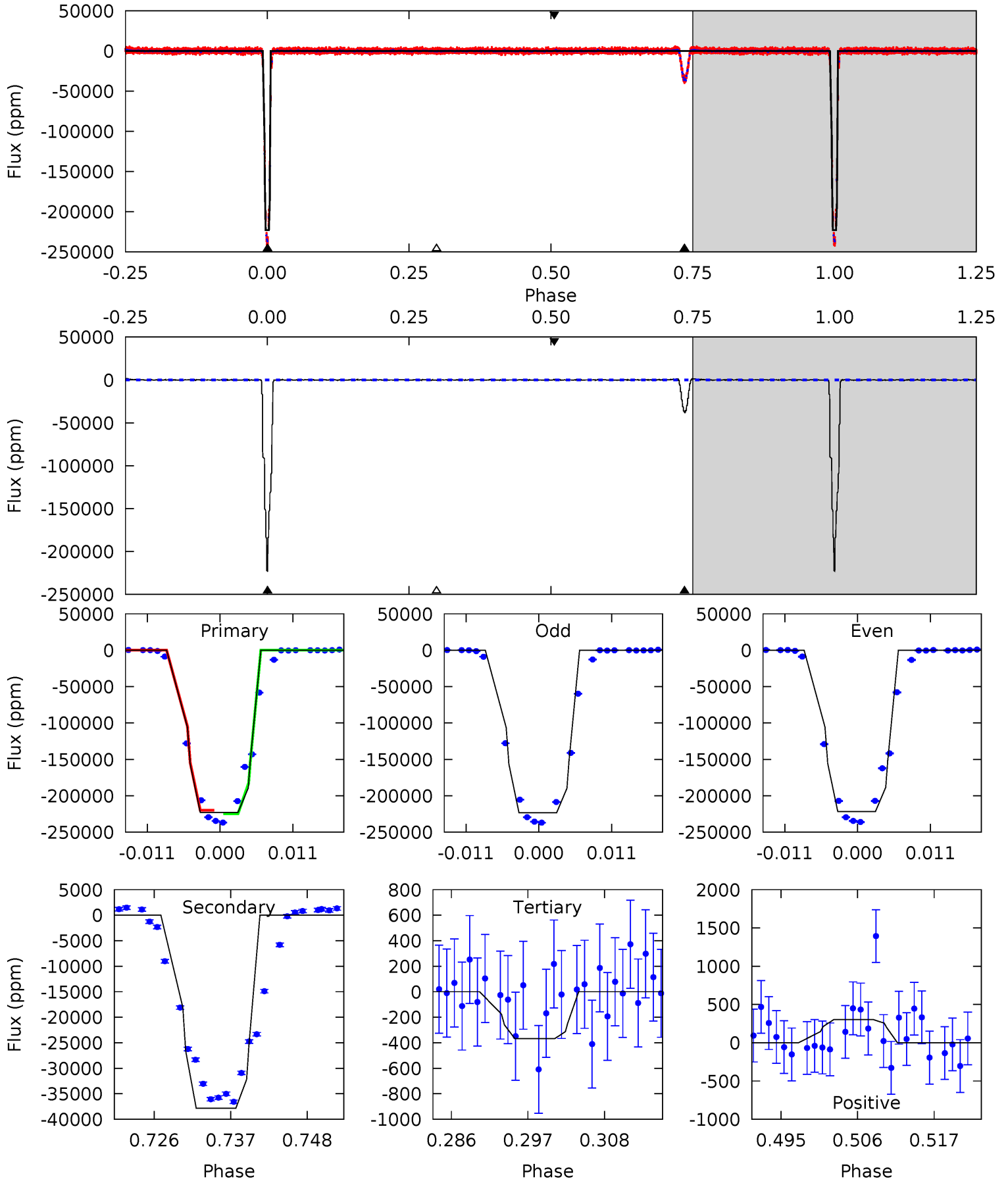
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4116	772.3	6.53	5.34	4.91	2.36	3.65	4110	4111	765.7	766.9	3.56	1.01	0.00	5.91



Alt Model-Shift Uniqueness Test

009025914-01, P = 11.320196 Days, E = 131.811919 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2165	367.3	3.58	2.93	5.01	2.54	3.02	2161	2162	363.7	364.3	7.60	1.01	0.01	0



Stellar Parameters For KIC 009025914

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6153^{+194}_{-237}	$4.302^{+0.180}_{-0.180}$	$-0.440^{+0.300}_{-0.300}$	$1.127^{+0.306}_{-0.250}$	$0.928^{+0.139}_{-0.104}$	$0.913^{+0.853}_{-0.438}$
	+3%/-4%	+4%/-4%	+68%/-68%	+27%/-22%	+15%/-11%	+93%/-48%
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 009025914-01 / KOI 3596.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-45779 ± 59	$87.56^{+13.39}_{-11.92}$	1300^{+98}_{-91}	3810^{+84}_{-107}	32^{+10}_{-7}
Alt.	-37819 ± 103	$60.53^{+9.94}_{-7.72}$	1294^{+102}_{-91}	4174^{+118}_{-129}	55^{+17}_{-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 $A_{\text{obs}} \gg 1.0$

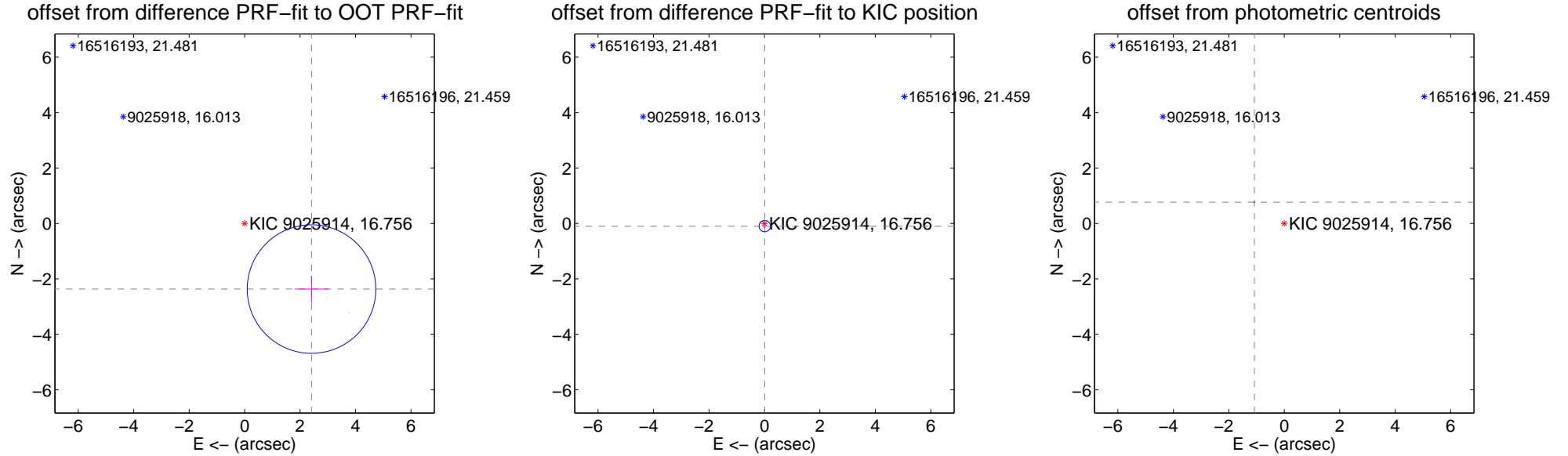
DV Centroid Data

Supplemental centroid analysis for 009025914-01. Kepler magnitude: 16.76. Transit SNR 1647.85

There are 8 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.91 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	3.381 ± 0.773	4.37	-2.413 ± 0.609	-2.369 ± 0.487
PRF-fit source offset from KIC position	0.098 ± 0.068	1.44	-0.011 ± 0.067	-0.098 ± 0.068
photometric centroid source offset	1.32 ± 0.00	440.94	1.08 ± 0.00	0.77 ± 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.

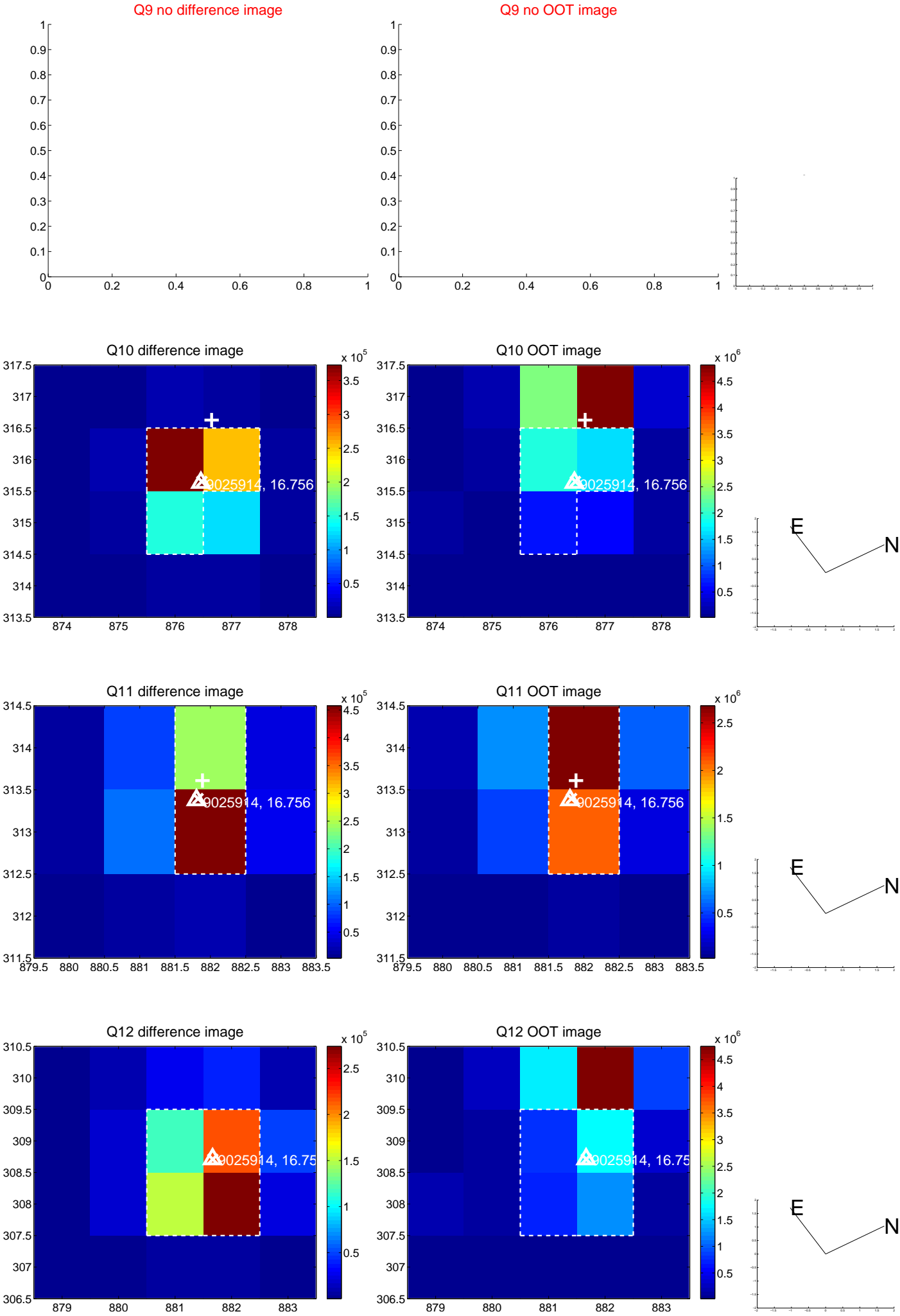
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



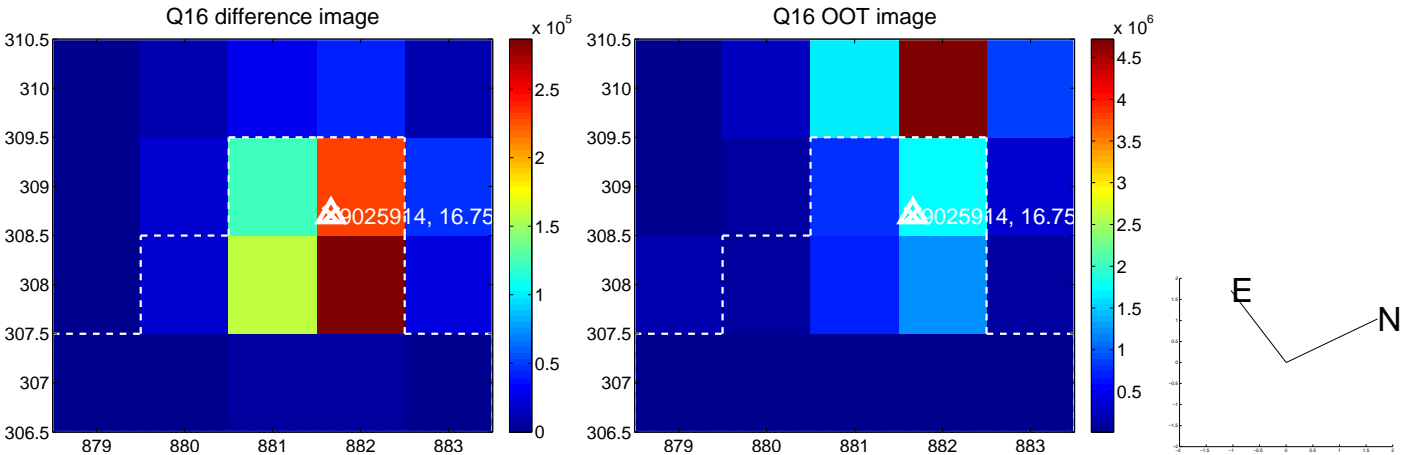
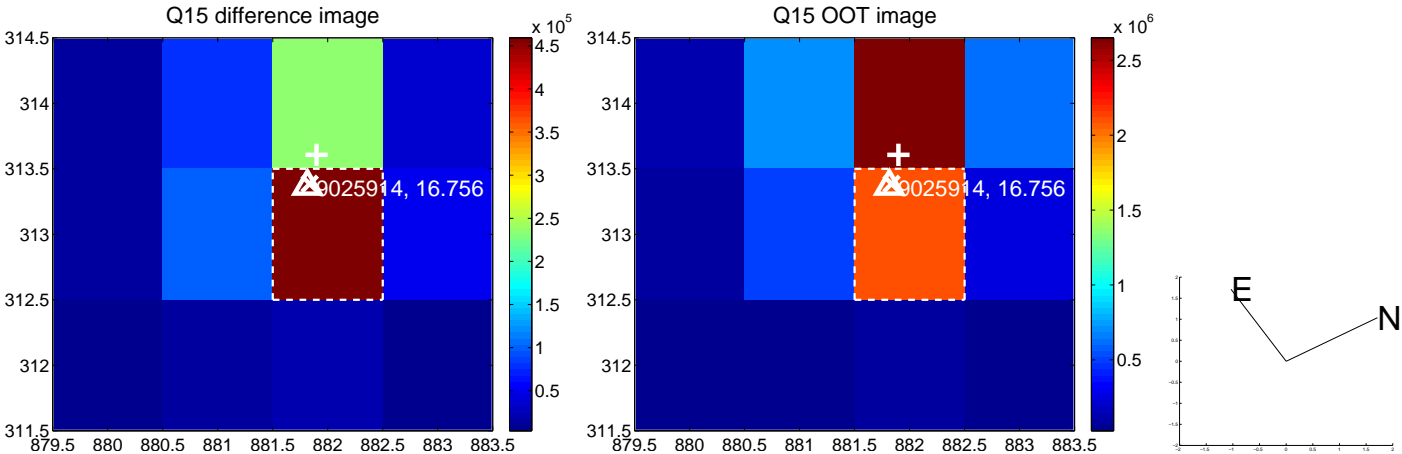
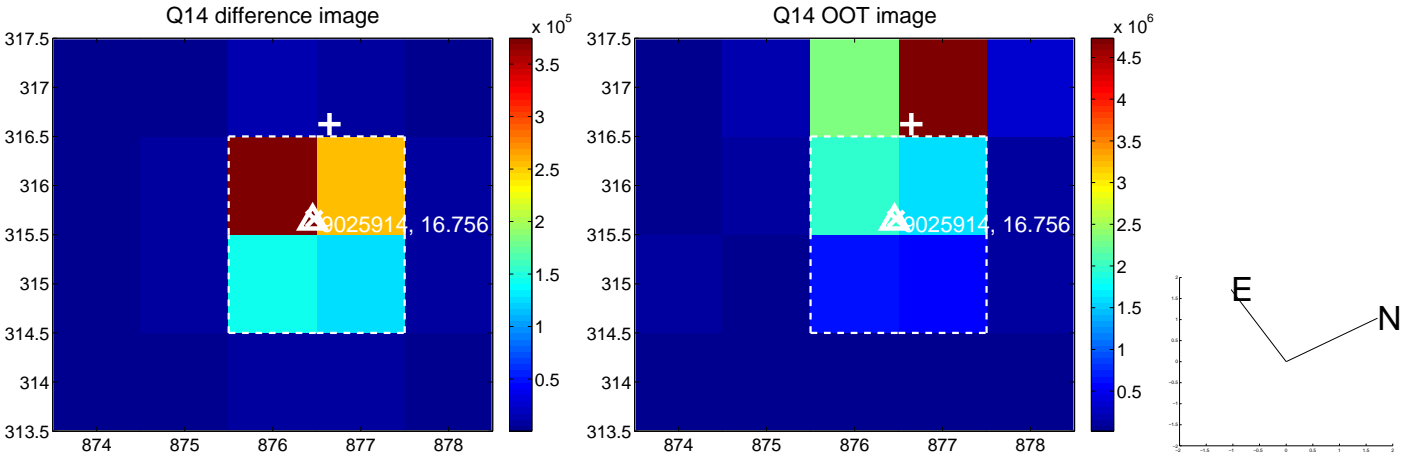
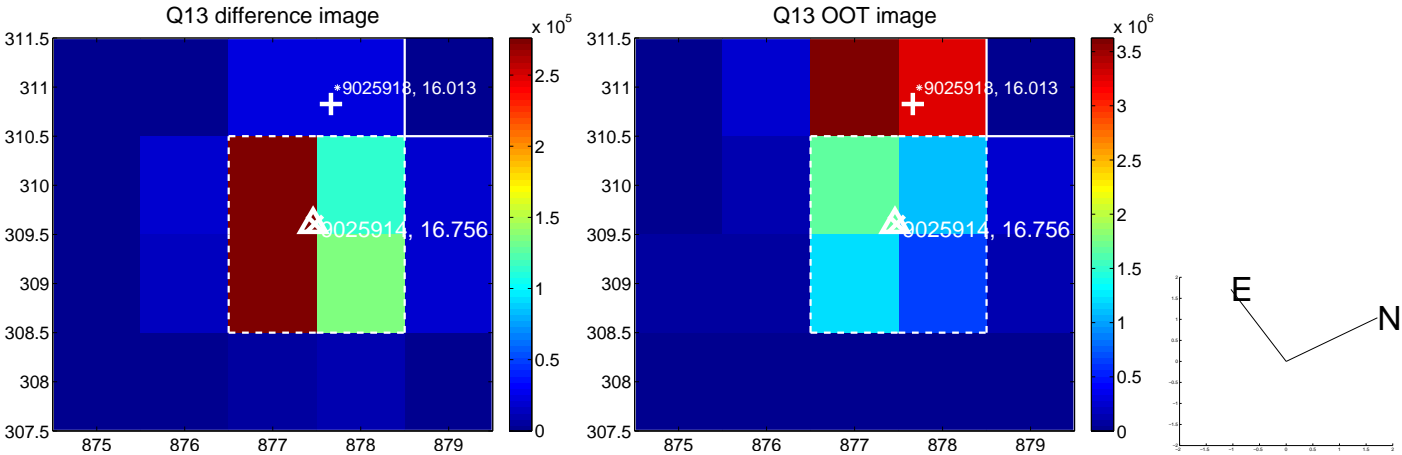
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



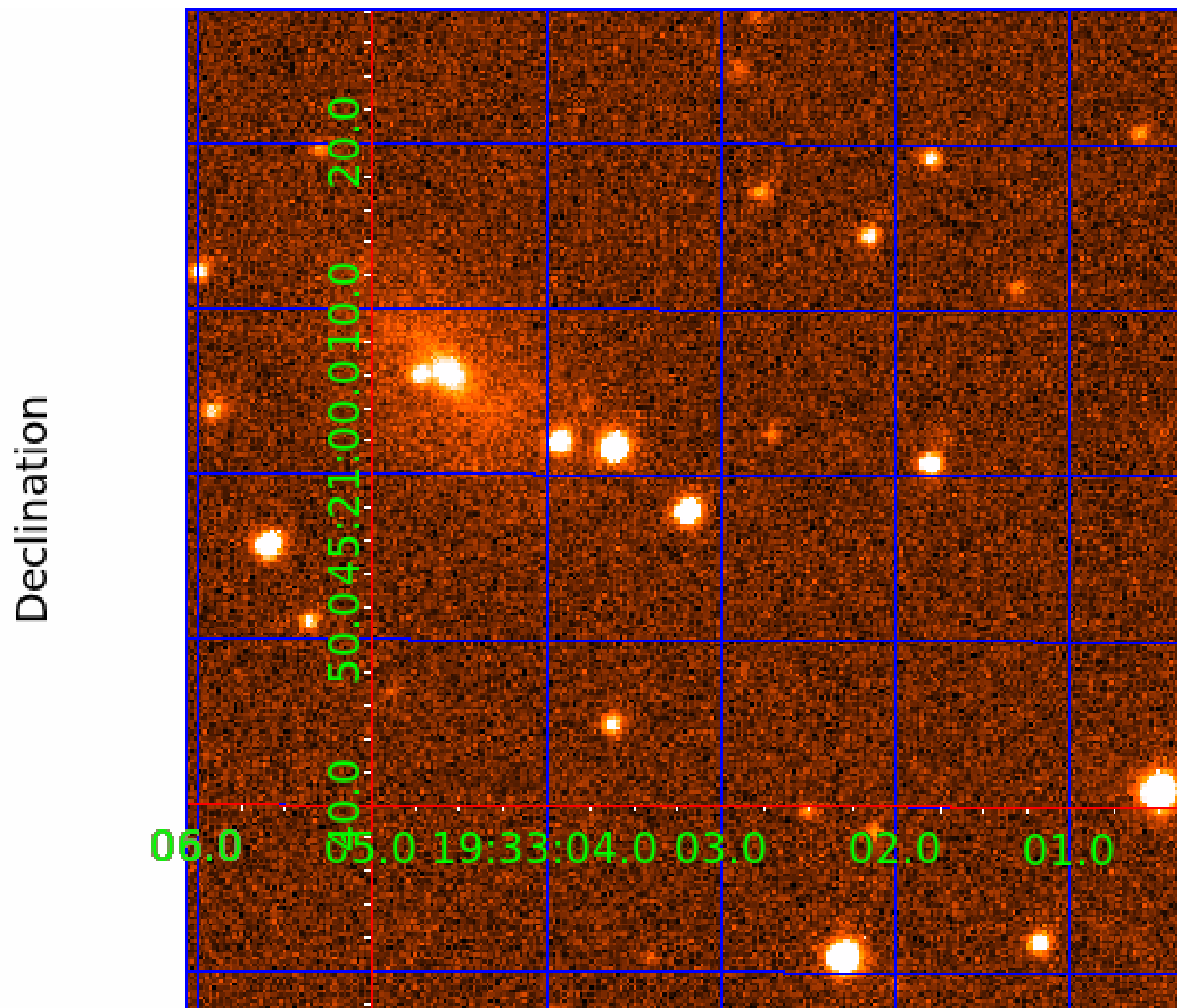
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009025914

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})
009025914-01	OBS	3596.01	11.320289	131.802866	244839.9	4.832	2326.2	1647.9	1.13	6153	86.67	175.95
009025914-02	OBS	No	11.320288	140.134131	37411.5	5.806	385.9	369.8	1.13	6153	31.30	175.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009025914-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
009025914-02	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.

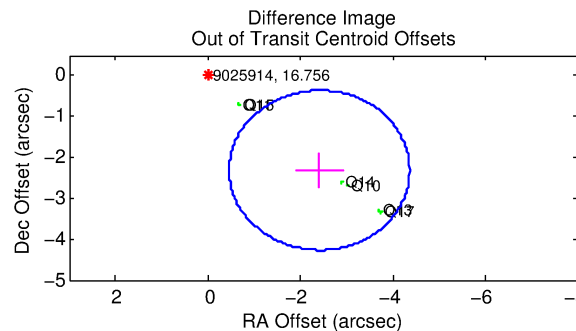
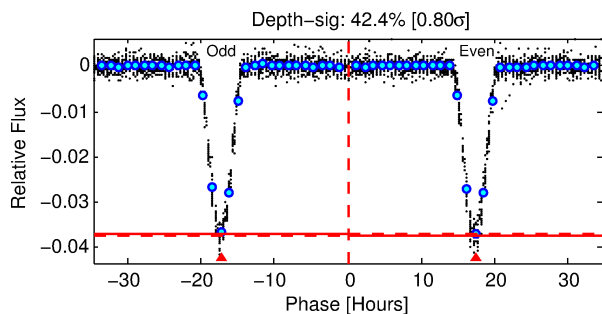
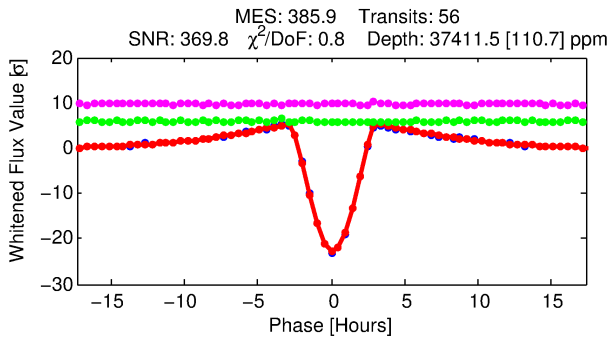
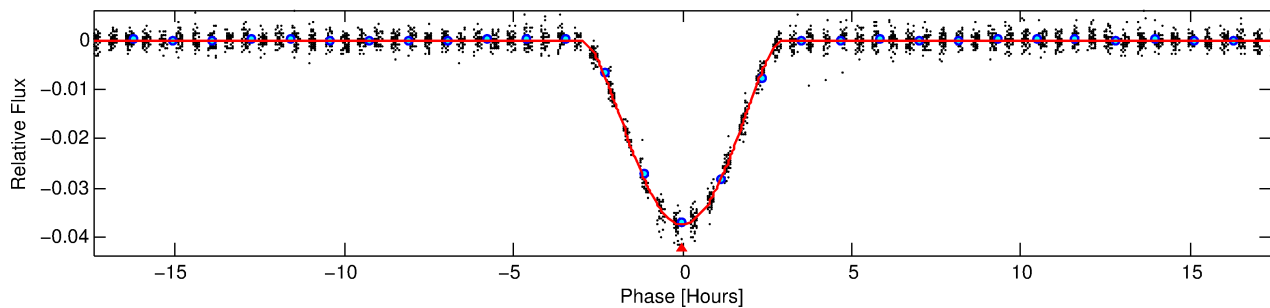
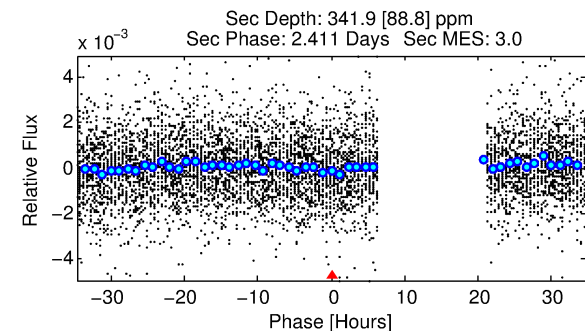
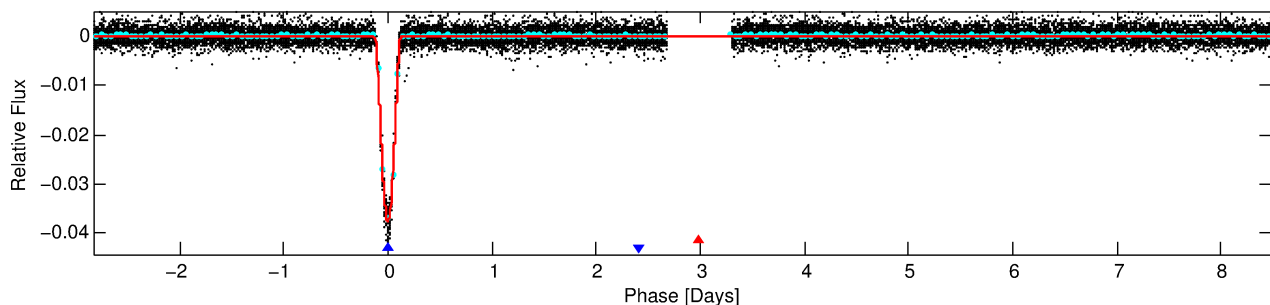
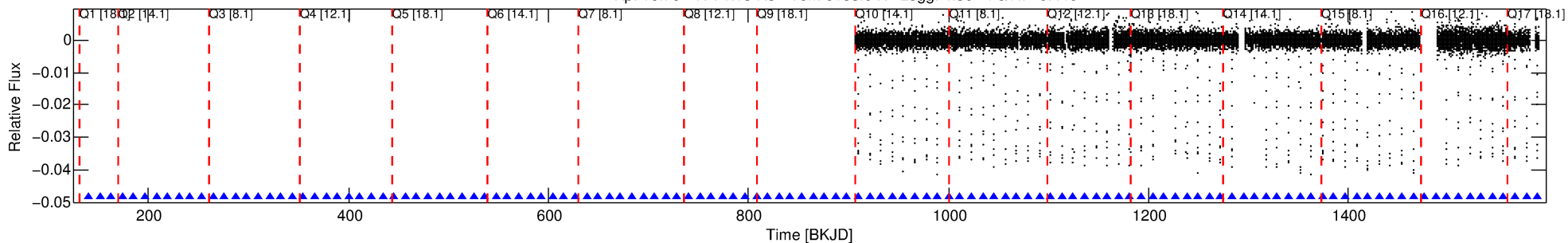
Ephemeris Match Information For 009025914-02

No Significant Match Found

DV One-Page Summary

KIC: 9025914 Candidate: 2 of 2 Period: 11.320 d
KOI: K03596 Corr: No Ephemeris Match

Kp: 16.76 R*: 1.13 Rs Teff: 6153.0 K Logg: 4.30 Fe/H: -0.440



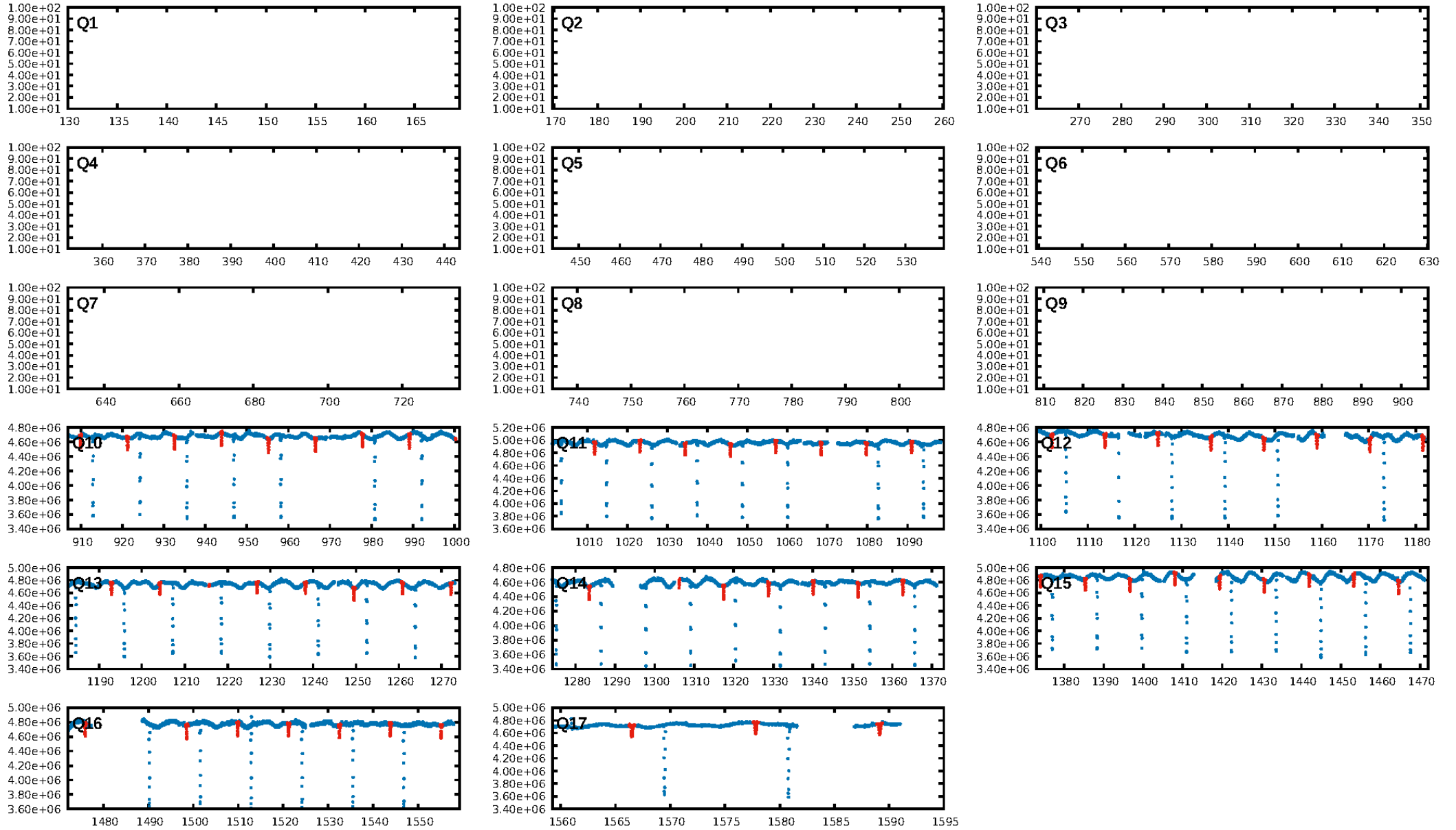
DV Fit Results:

Period = 11.32029 [0.00001] d
Epoch = 140.1341 [0.0008] BKJD
Rp/R* = 0.2545 [0.0187]
a/R* = 12.65 [0.12]
b = 0.93 [0.03]
Seff = 175.95 [64.13]
Teq = 929 [85] K
Rp = 31.30 [8.81] Re
a = 0.0963 [0.0219] AU
Ag = 1.78 [0.79] [0.98σ]
Teffp = 1658 [139] K [4.48σ]

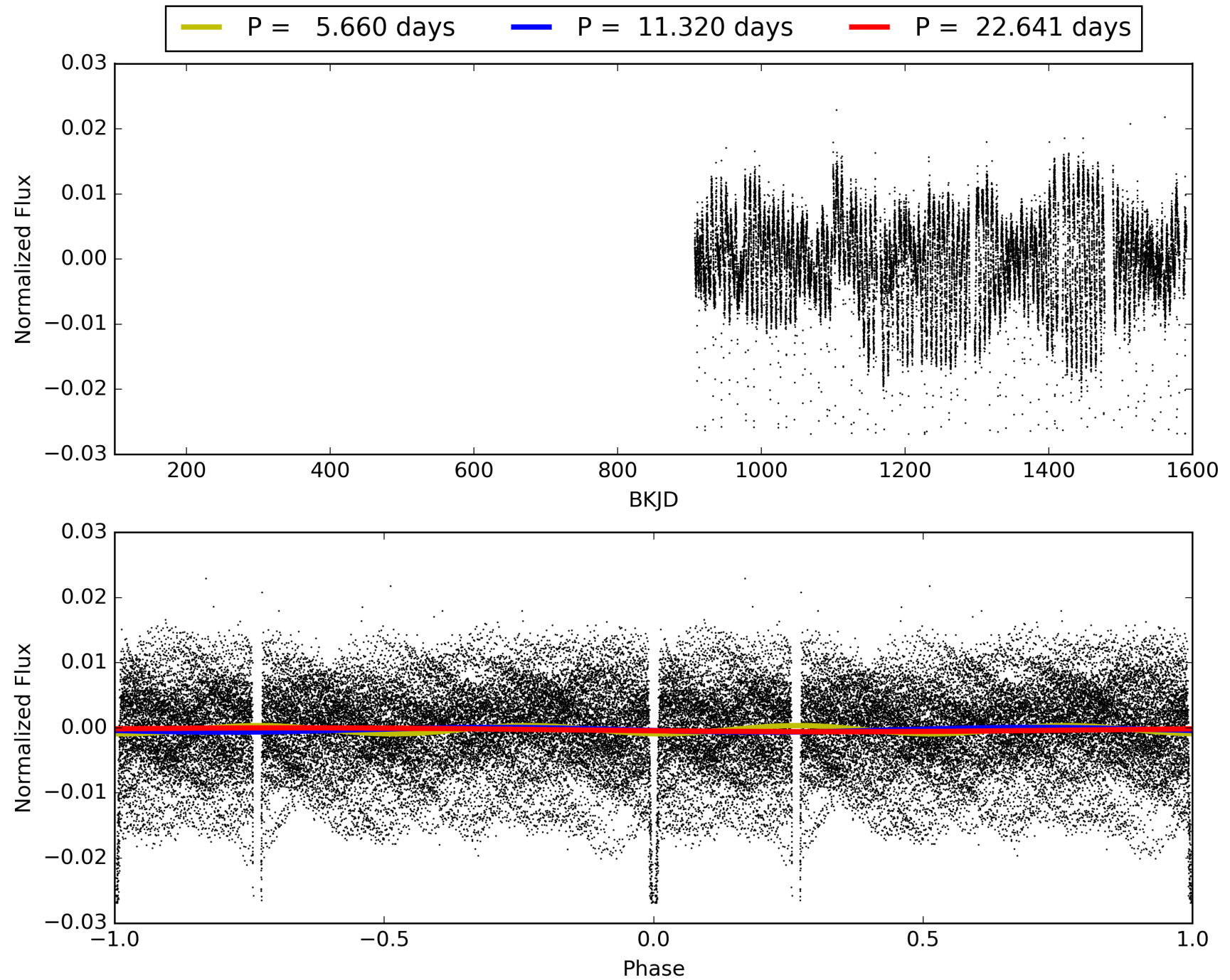
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 4.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [53/53]
GhostDiagnostic-chr: 1.898
Centroid-sig: 0.0%
Centroid-so: 1.270 arcsec [73.29σ]
OotOffset-rm: 3.342 arcsec [5.13σ]
KicOffset-rm: 0.092 arcsec [1.33σ]
OotOffset-st: 2/2/0/2 [6]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 009025914-02, PDC Light Curves

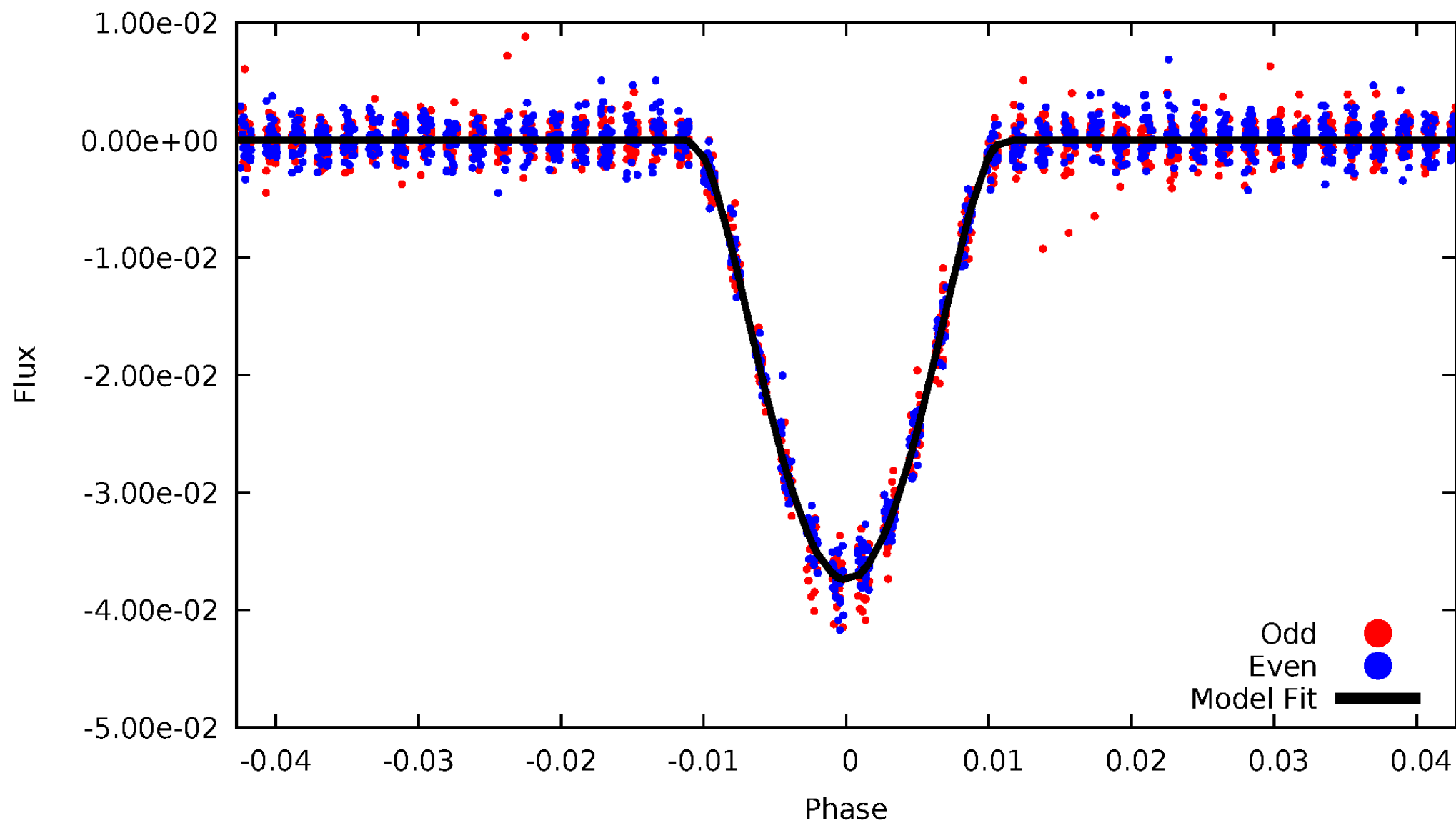


TCE 009025914-02



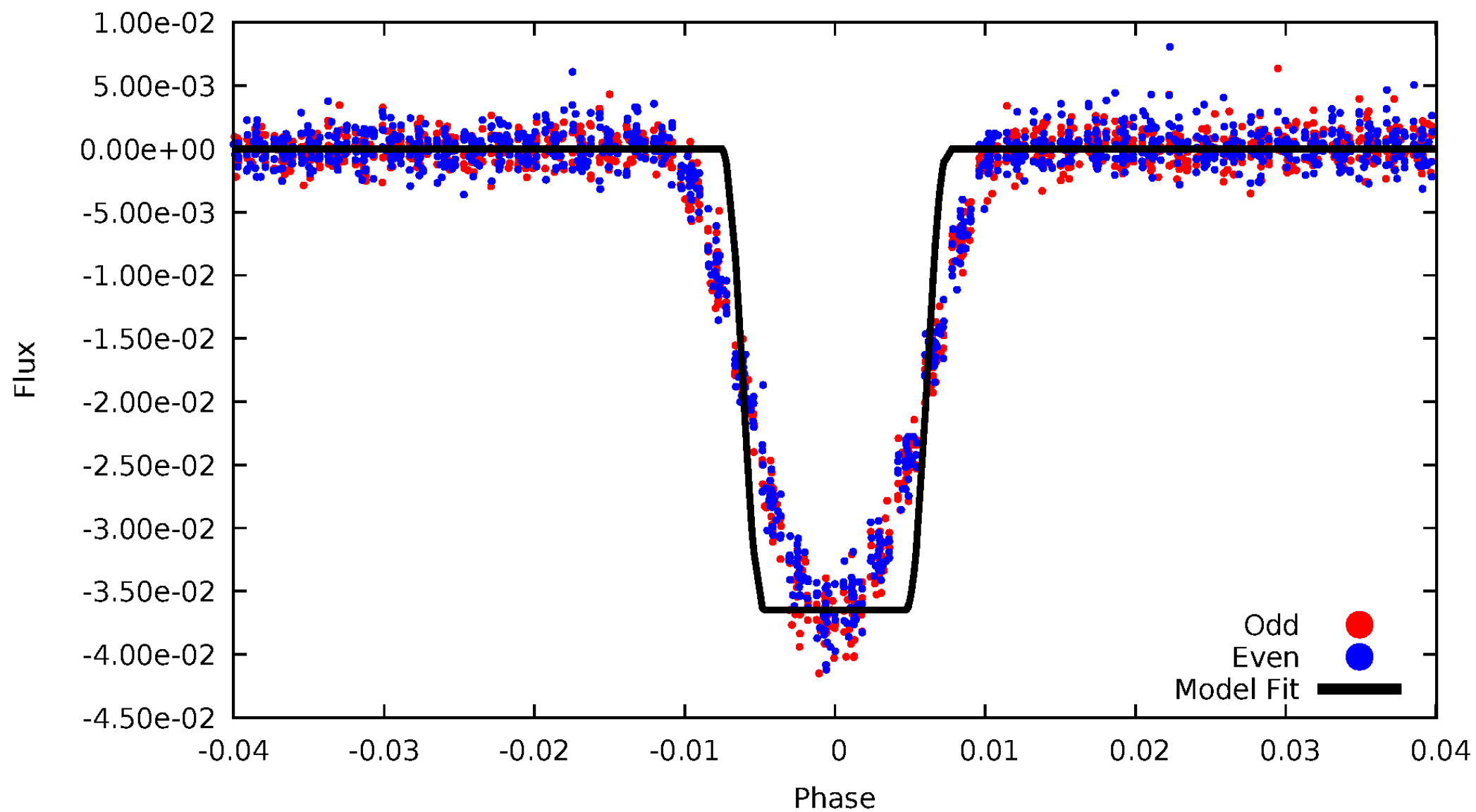
DV Odd/Even

TCE 009025914-02



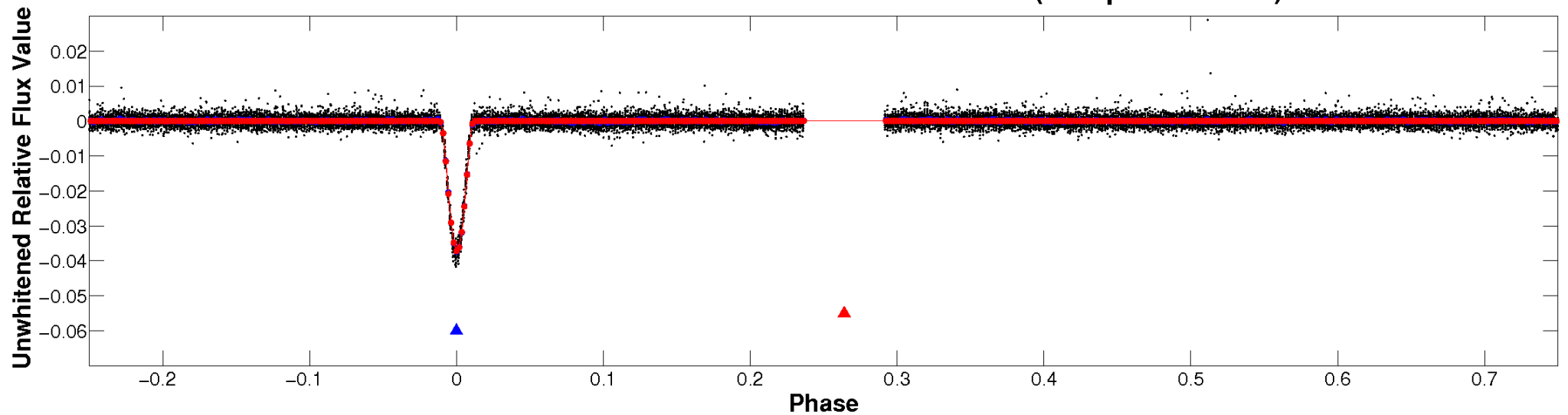
ALT Odd/Even

TCE 009025914-02

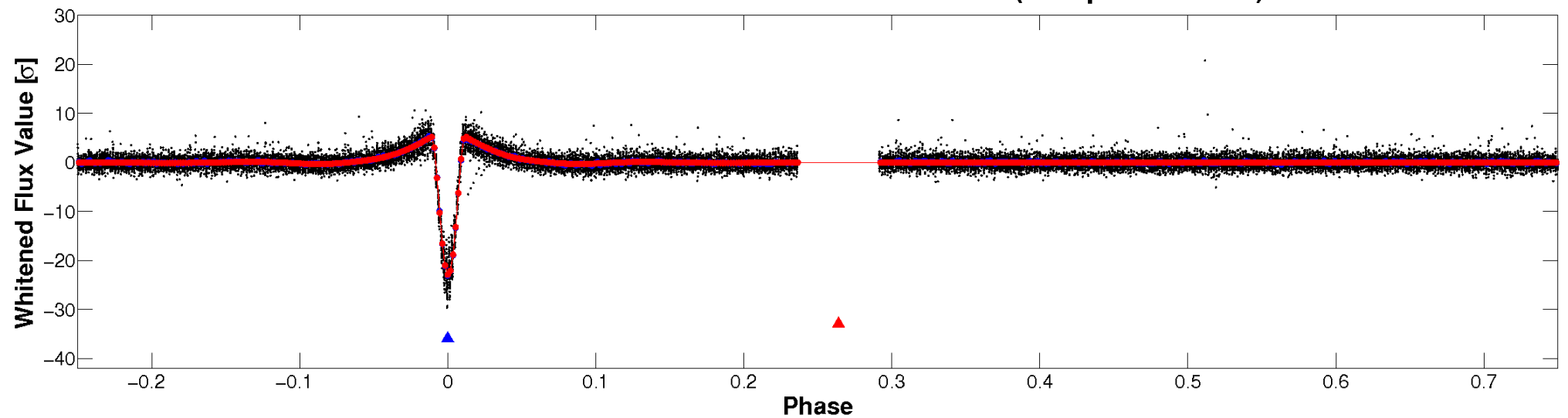


Non-Whitened Vs. Whitened Light Curve

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

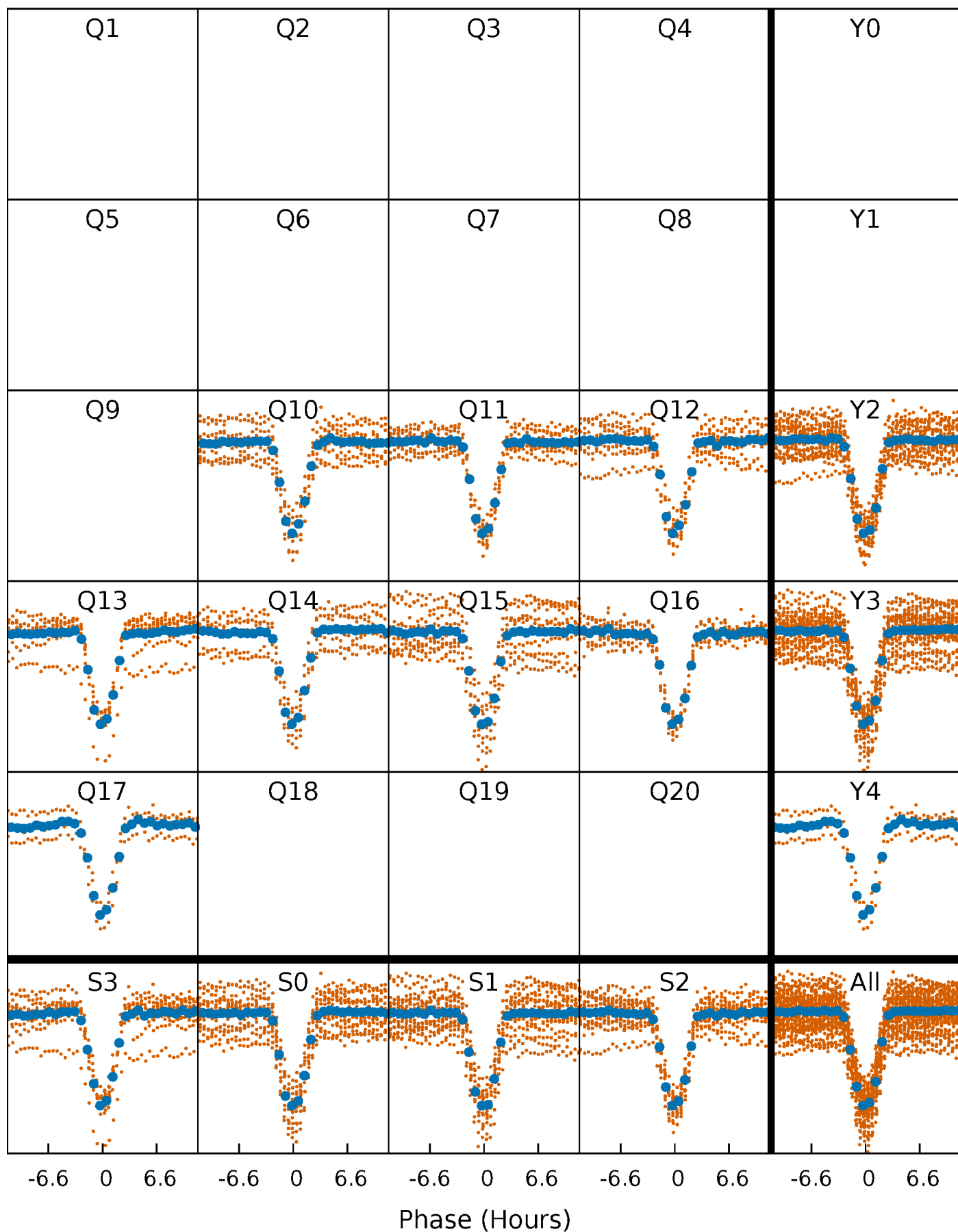


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



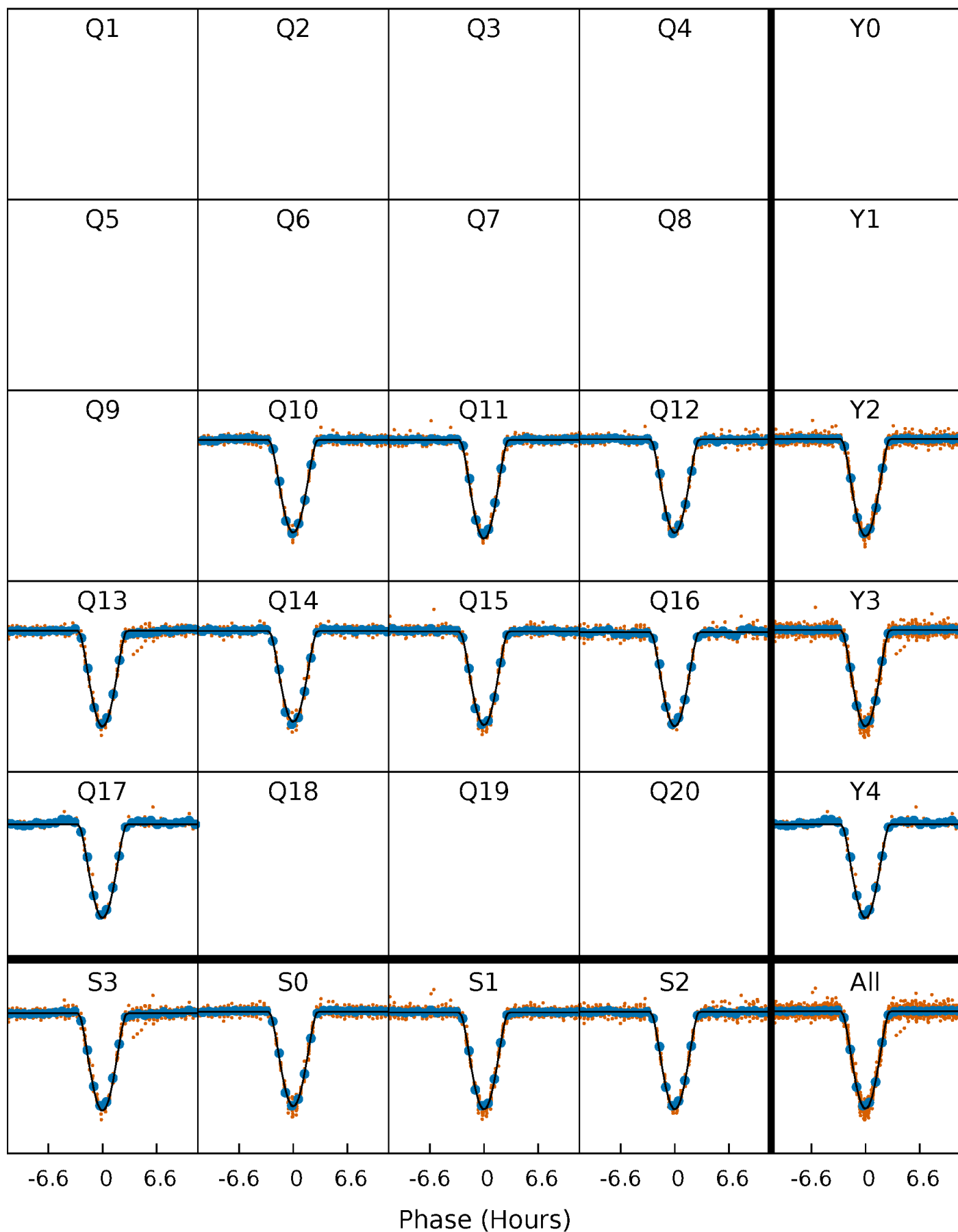
PDC Quarter-Phased Transit Curves

TCE 009025914-02 P= 11.320288 Days $T_0=140.134131$ (BKJD)



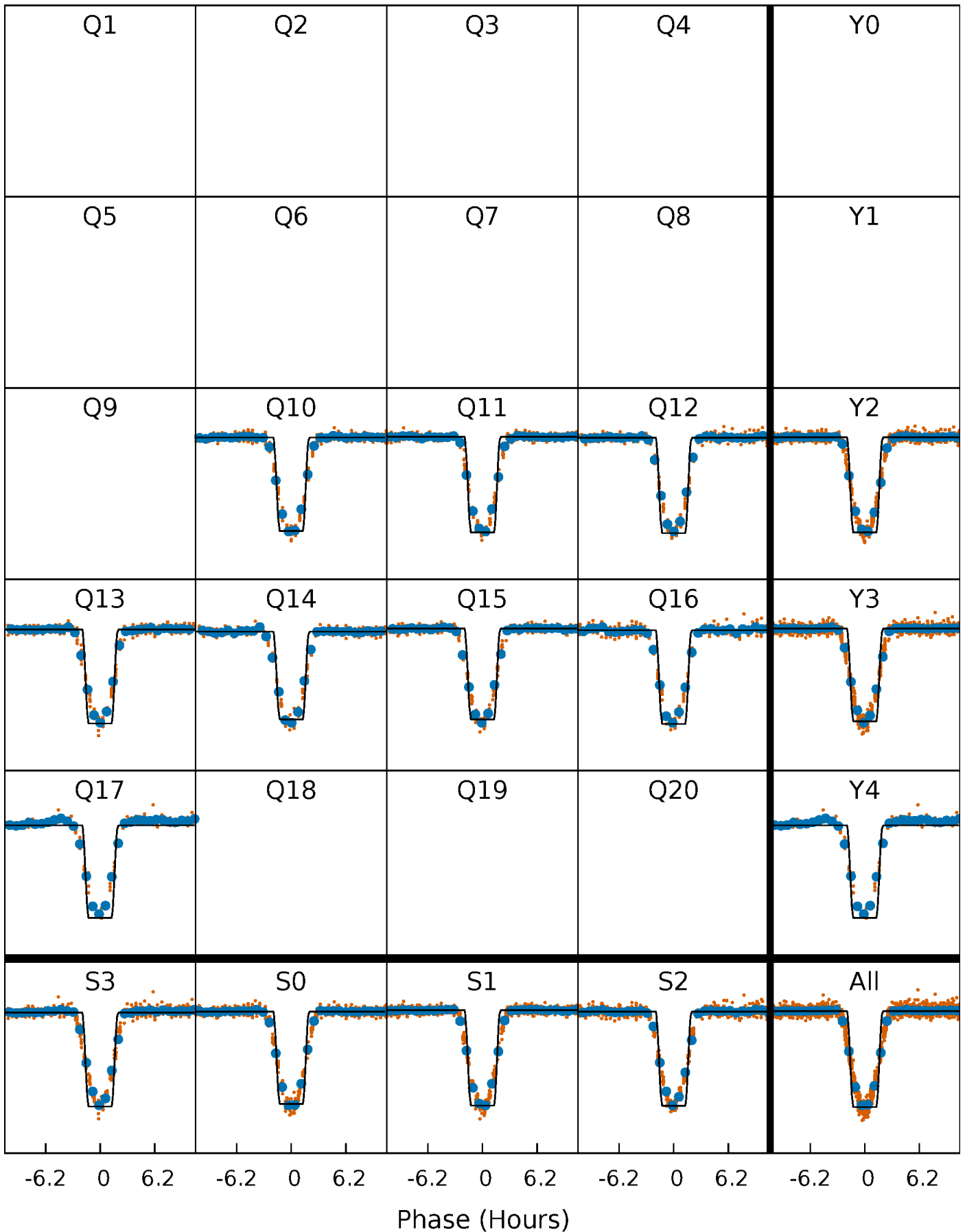
DV Quarter-Phased Transit Curves

TCE 009025914-02 P= 11.320288 Days $T_0=140.134131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

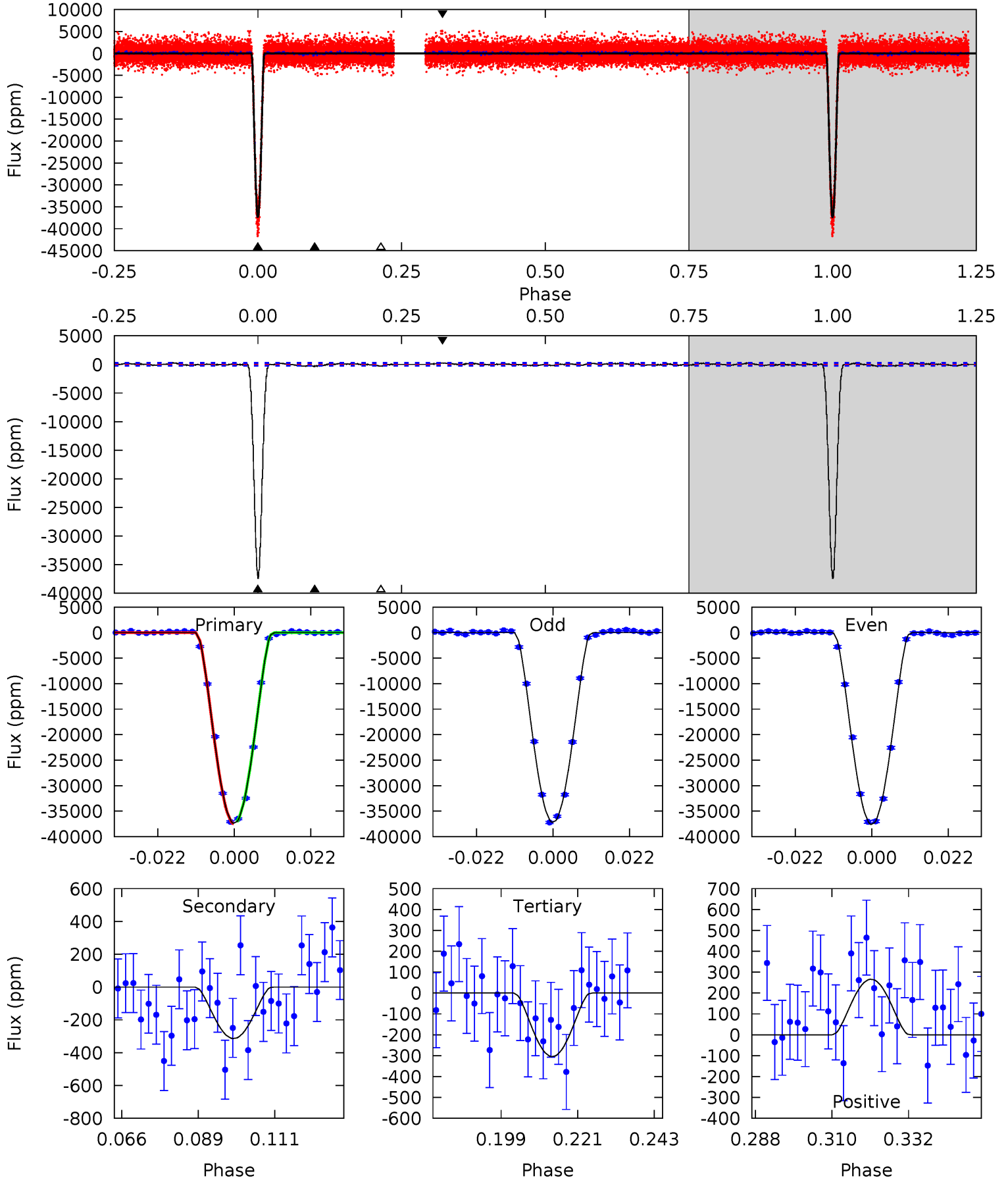
TCE 009025914-02 P= 11.320394 Days $T_0=140.124146$ (BKJD)



DV Model-Shift Uniqueness Test

009025914-02, P = 11.320288 Days, E = 140.134131 Days

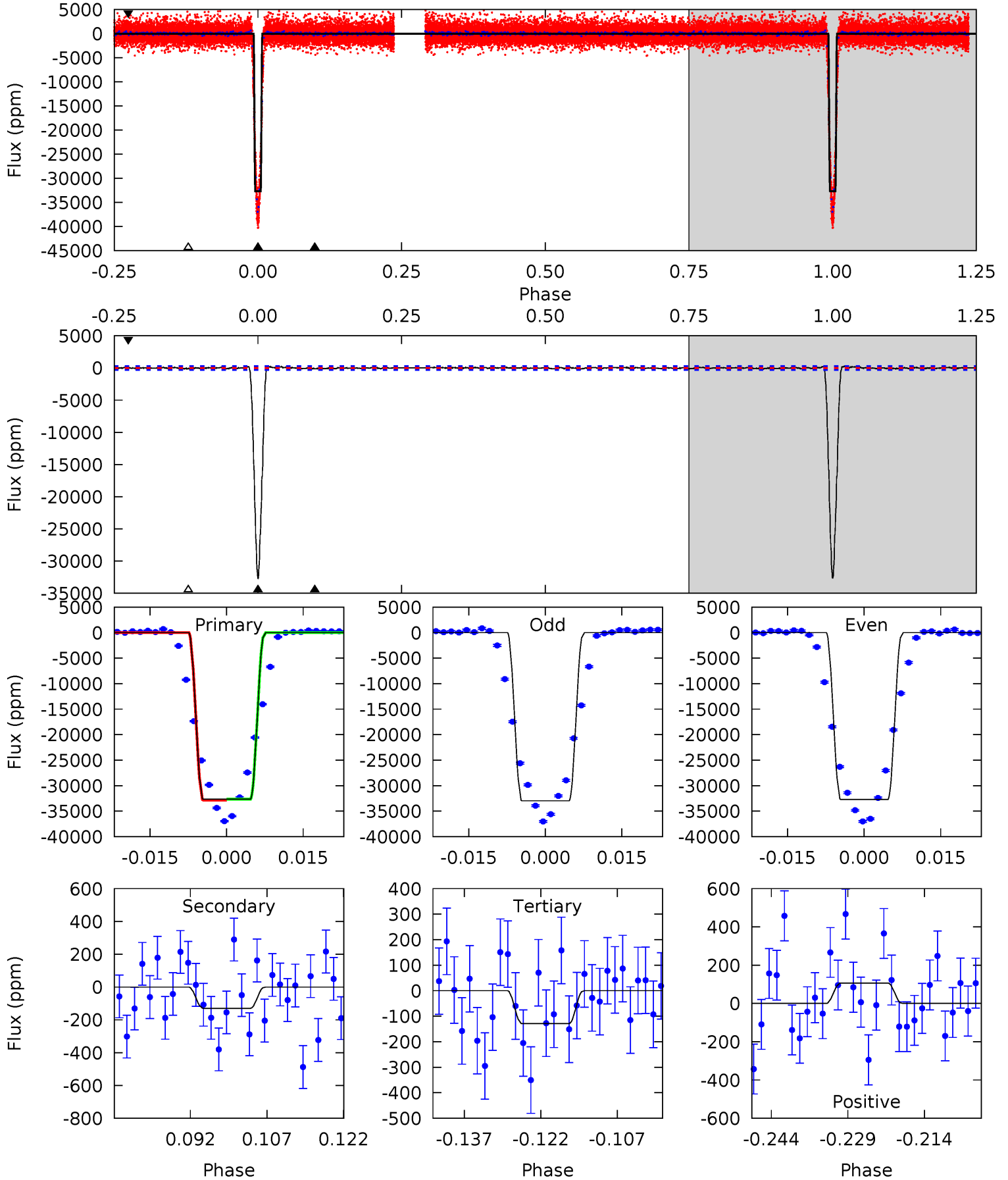
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
753.9	6.33	6.14	5.36	4.87	2.29	2.04	747.7	748.5	0.19	0.97	4.03	1.00	0.01	5.32



Alt Model-Shift Uniqueness Test

009025914-02, P = 11.320394 Days, E = 140.124146 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
550.1	2.18	2.17	1.79	4.94	2.43	0.94	547.9	548.3	0.01	0.39	2.18	1.00	0.01	1.44



Stellar Parameters For KIC 009025914

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6153^{+194}_{-237}	$4.302^{+0.180}_{-0.180}$	$-0.440^{+0.300}_{-0.300}$	$1.127^{+0.306}_{-0.250}$	$0.928^{+0.139}_{-0.104}$	$0.913^{+0.853}_{-0.438}$
	+3%/-4%	+4%/-4%	+68%/-68%	+27%/-22%	+15%/-11%	+93%/-48%
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 009025914-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-314 ± 50	$31.66^{+5.43}_{-4.49}$	1305^{+93}_{-98}	2414^{+86}_{-97}	$1.580^{+0.658}_{-0.459}$
Alt.	-130 ± 59	$24.08^{+4.16}_{-3.39}$	1300^{+104}_{-95}	2295^{+174}_{-245}	$1.134^{+0.779}_{-0.584}$

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

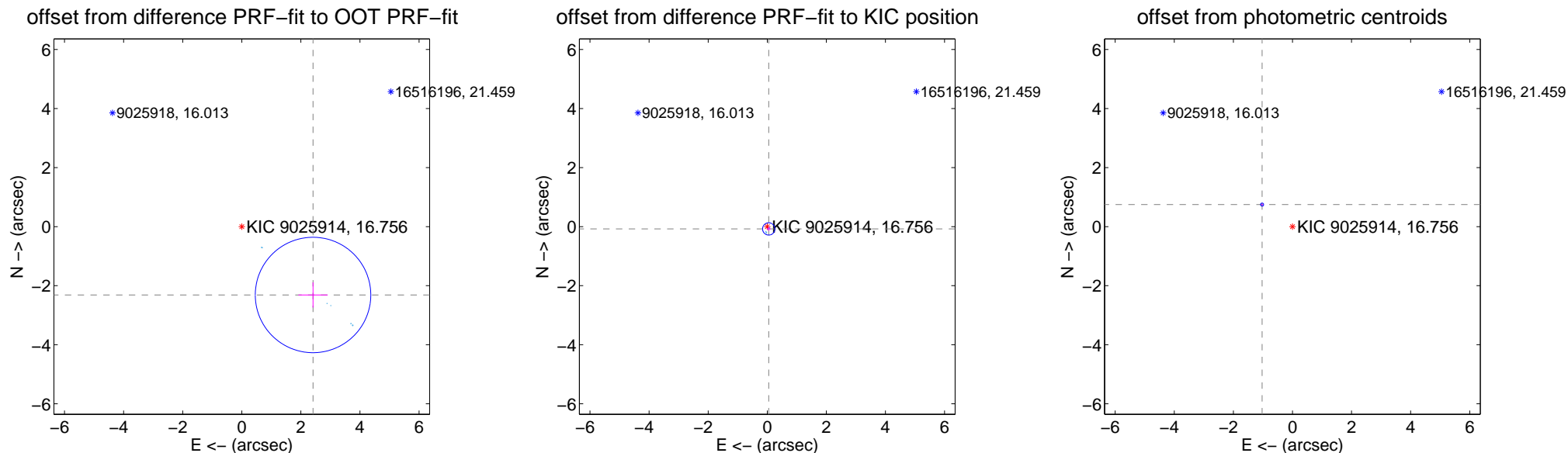
DV Centroid Data

Supplemental centroid analysis for 009025914-02. Kepler magnitude: 16.76. Transit SNR 369.78

There are 8 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.91 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	3.342 ± 0.651	5.13	-2.411 ± 0.498	-2.315 ± 0.428
PRF-fit source offset from KIC position	0.092 ± 0.069	1.33	-0.050 ± 0.071	-0.078 ± 0.069
photometric centroid source offset	1.27 ± 0.02	73.29	1.03 ± 0.02	0.75 ± 0.02



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.

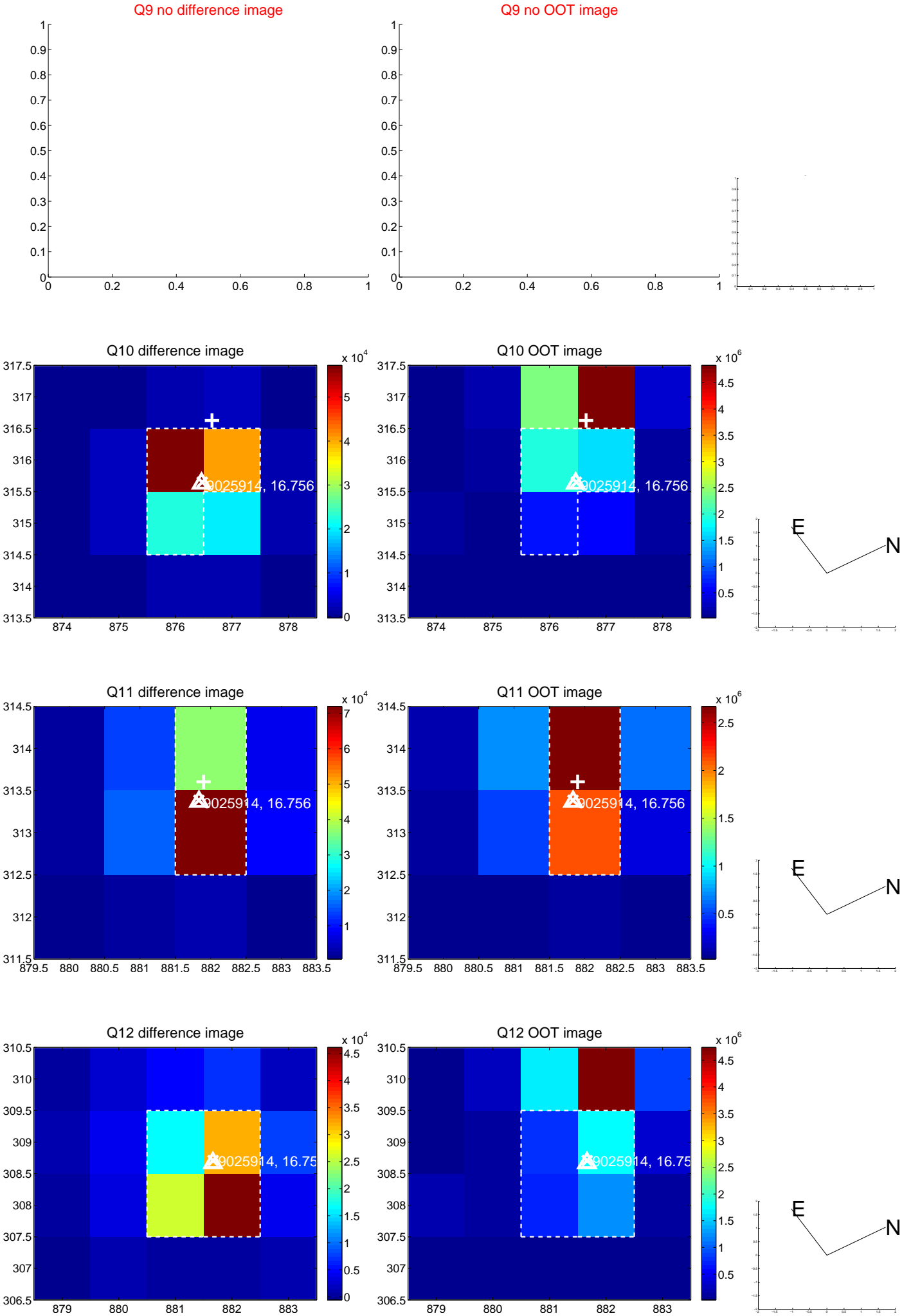
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



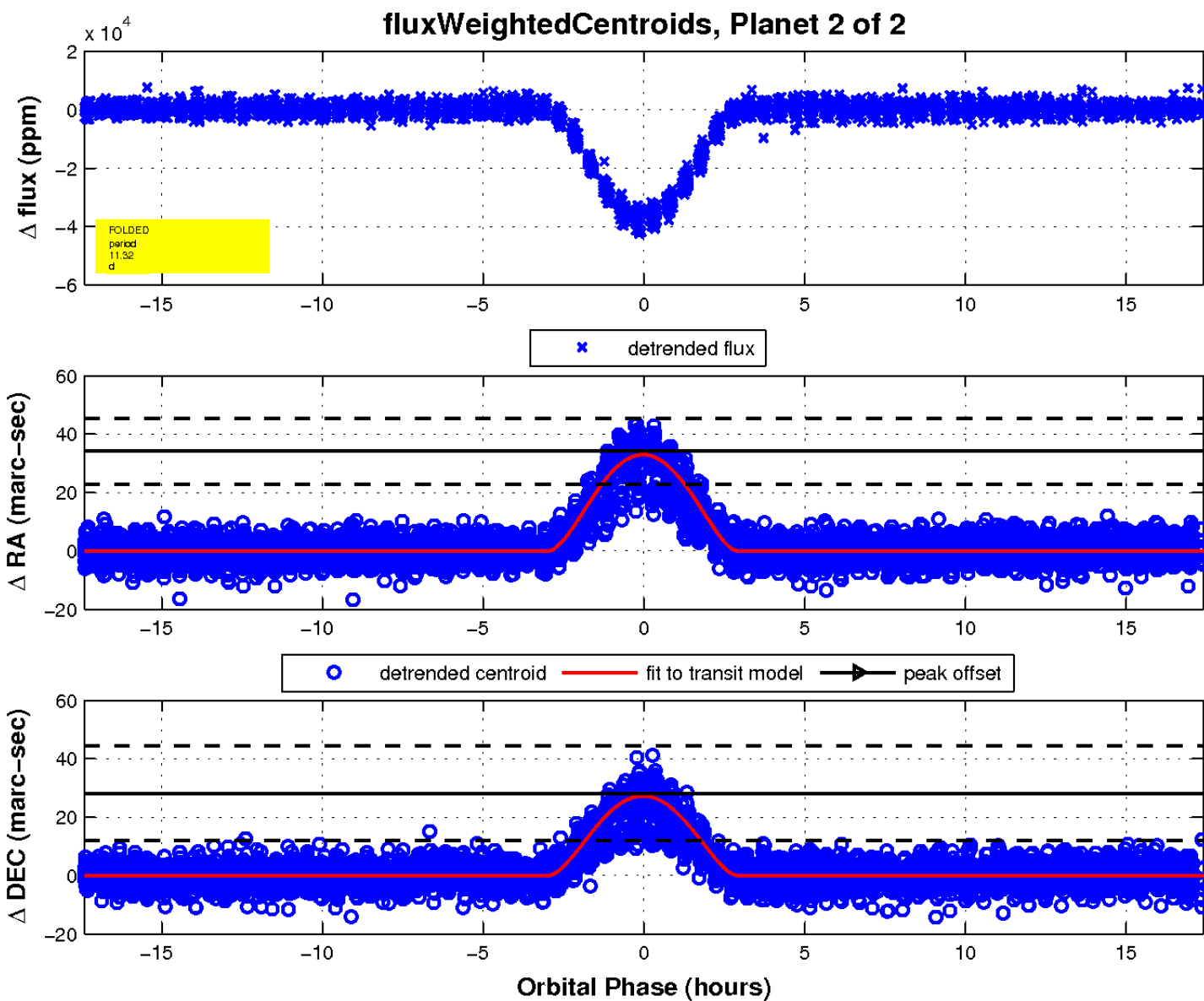
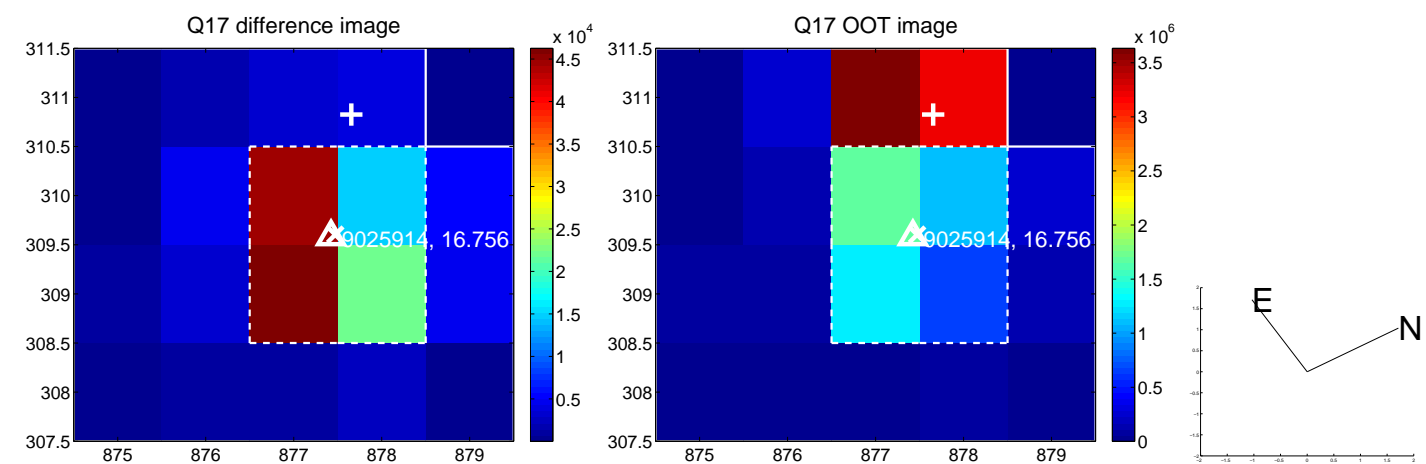
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

