

KIC 009411317

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})
009411317-01	OBS	6067.01	8.290465	132.248730	173787.8	2.638	333.8	291.3	0.57	4601	24.21	29.43
009411317-02	OBS	No	8.289916	135.486251	20009.0	3.718	38.5	41.3	0.57	4601	10.62	29.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009411317-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_FEW_DIFFS
009411317-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_FEW_DIFFS

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

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

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

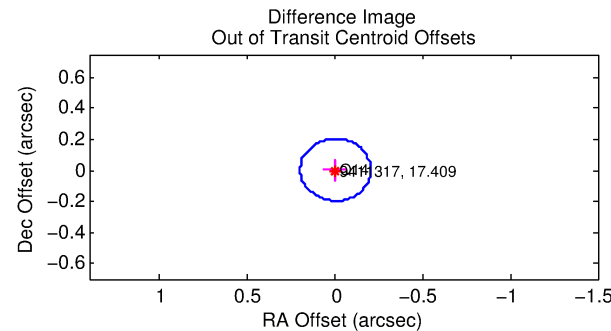
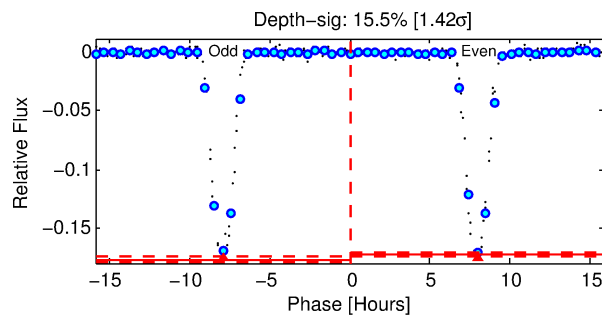
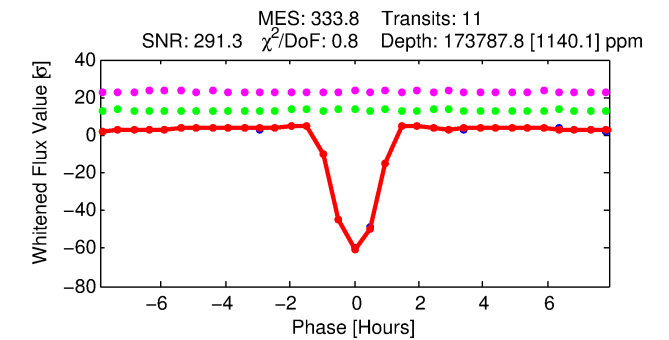
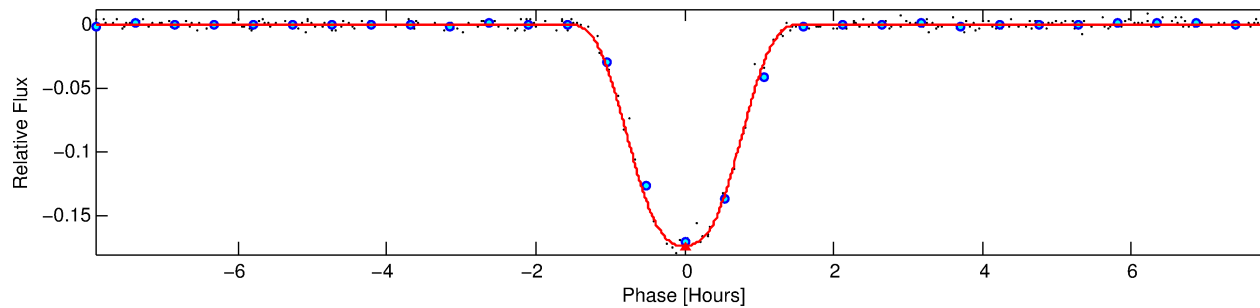
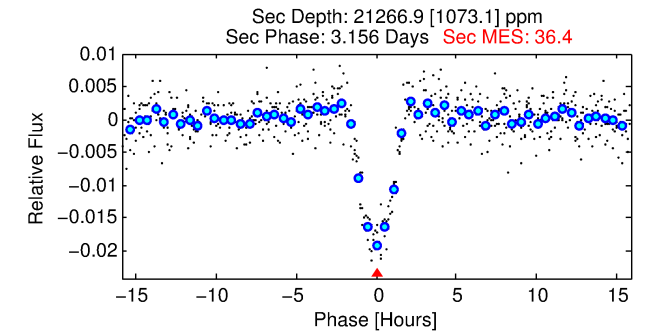
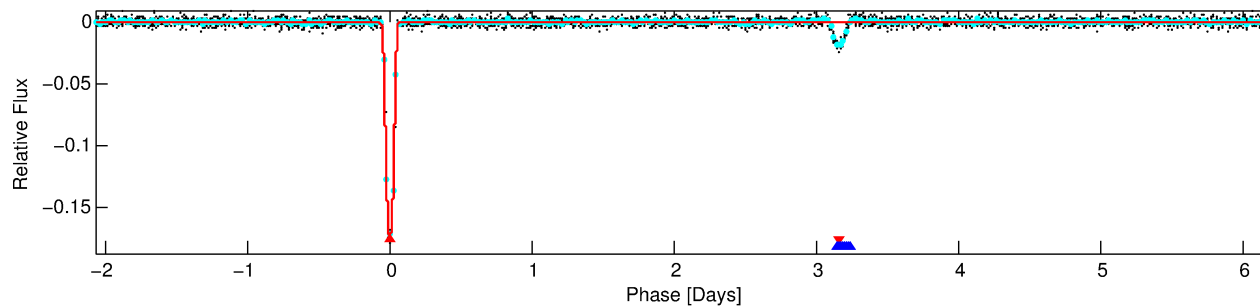
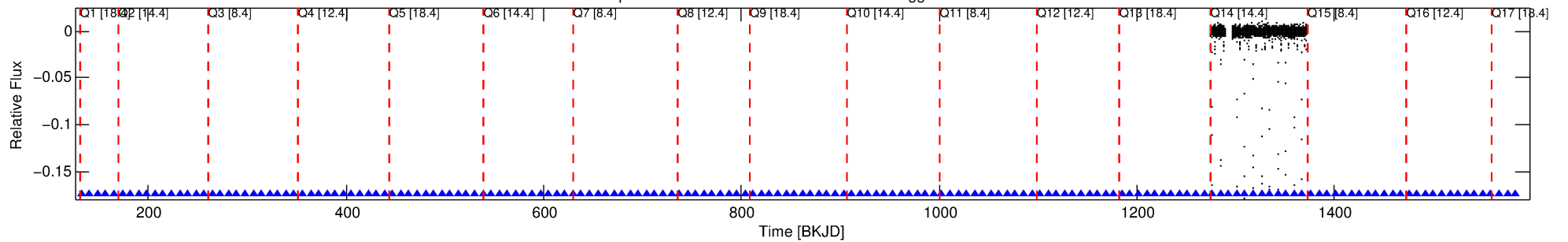
Ephemeris Match Information For 009411317-01

No Significant Match Found

DV One-Page Summary

KIC: 9411317 Candidate: 1 of 2 Period: 8.290 d
KOI: K06067.01 Corr: 0.998

Kp: 17.41 R*: 0.57 Rs Teff: 4601.0 K Logg: 4.68 Fe/H: -0.860



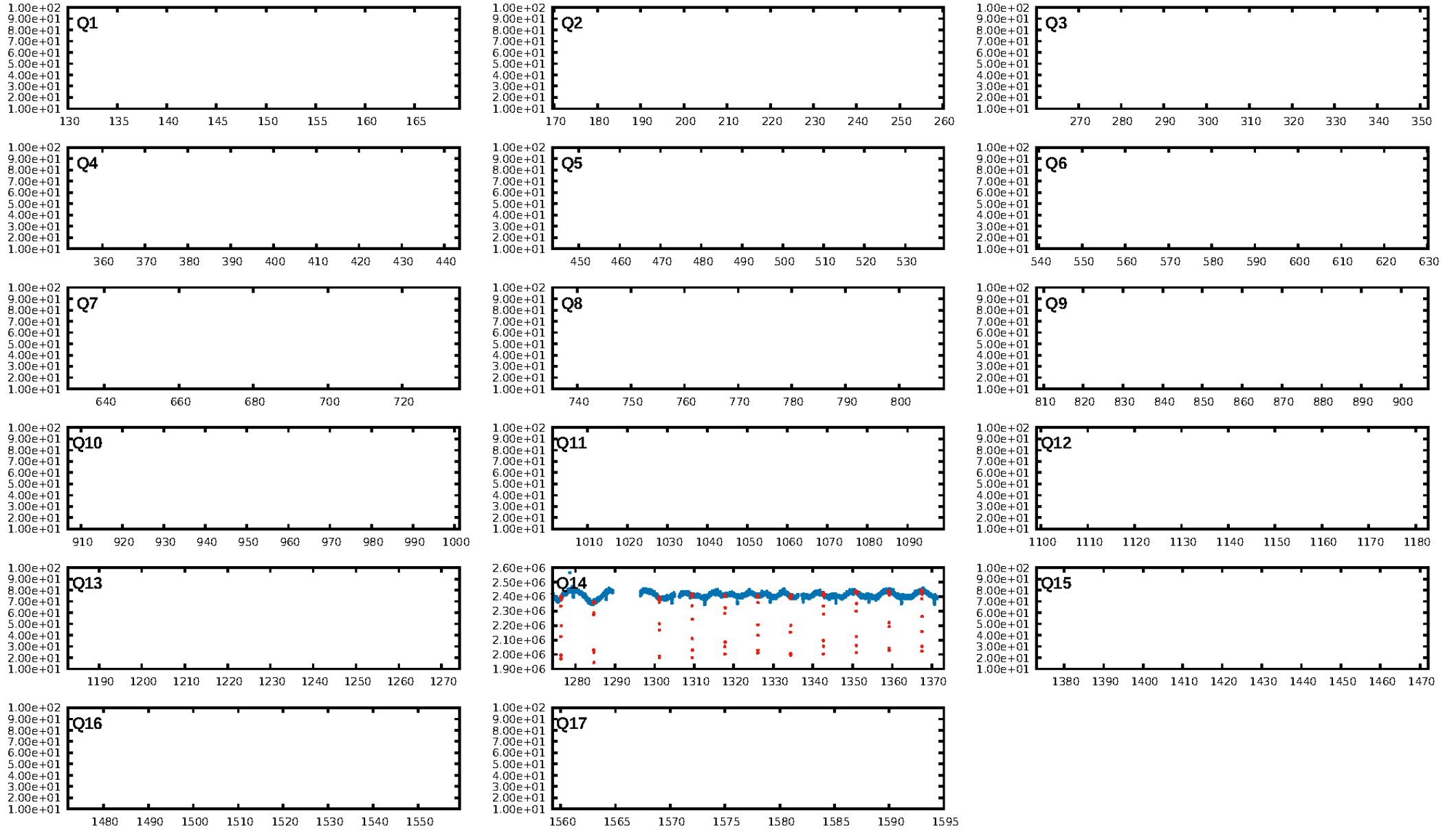
DV Fit Results:

Period = 8.29047 [0.00001] d
Epoch = 132.2487 [0.0009] BKJD
Rp/R* = 0.3920 [0.0025]
a/R* = 31.48 [0.52]
b = 0.47 [0.03]
Seff = 29.43 [5.46]
Teq = 594 [28] K
Rp = 24.21 [2.02] Re
a = 0.0661 [0.0046] AU
Ag = 87.23 [10.01] [8.61σ]
Teffp = 2806 [115] K [18.78σ]

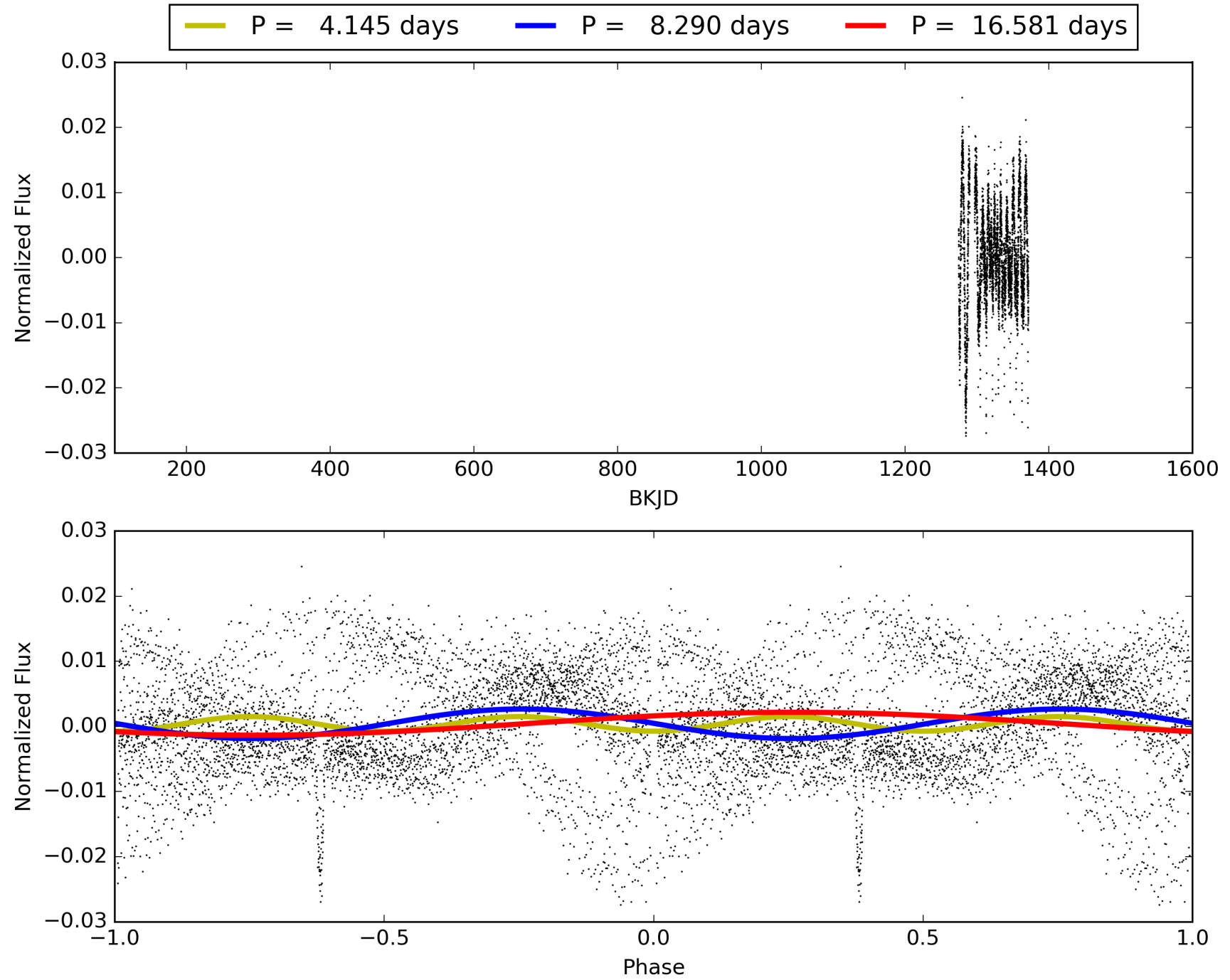
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 49.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 3.523
Centroid-sig: 0.0%
Centroid-so: 0.161 arcsec [2.77σ]
OotOffset-rm: 0.006 arcsec [0.09σ]
KicOffset-rm: 0.155 arcsec [2.32σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

TCE 009411317-01, PDC Light Curves

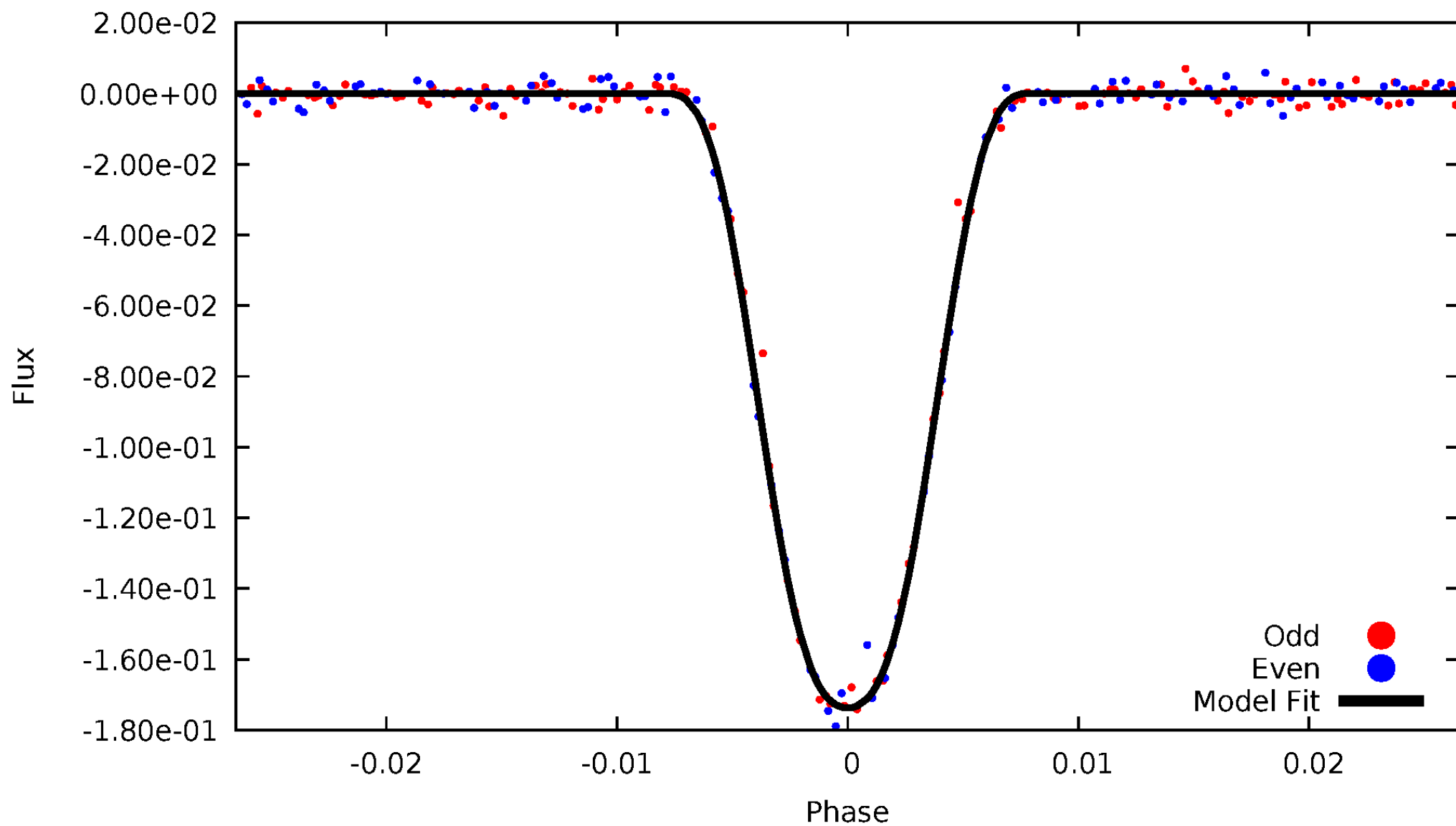


TCE 009411317-01



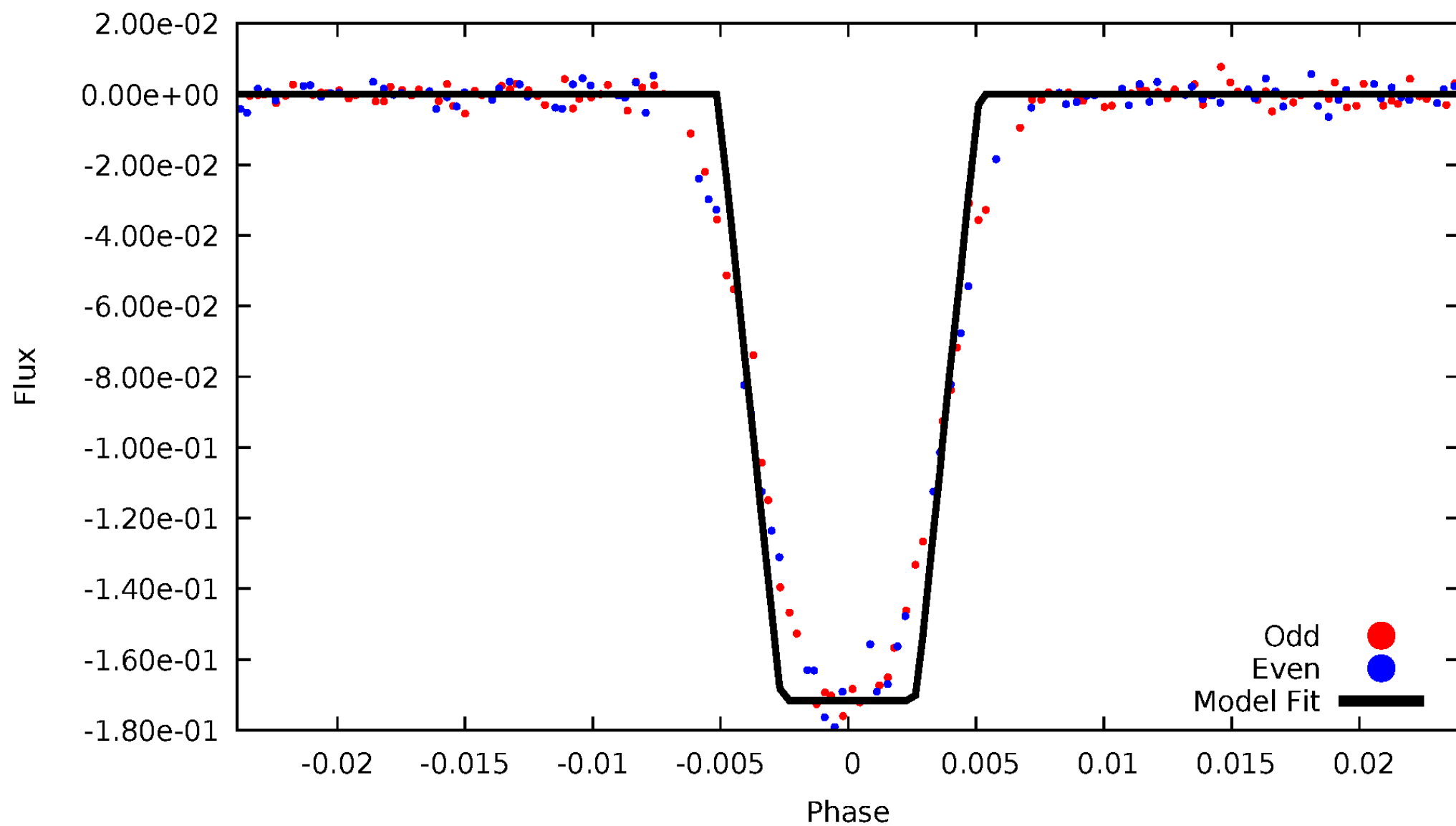
DV Odd/Even

TCE 009411317-01



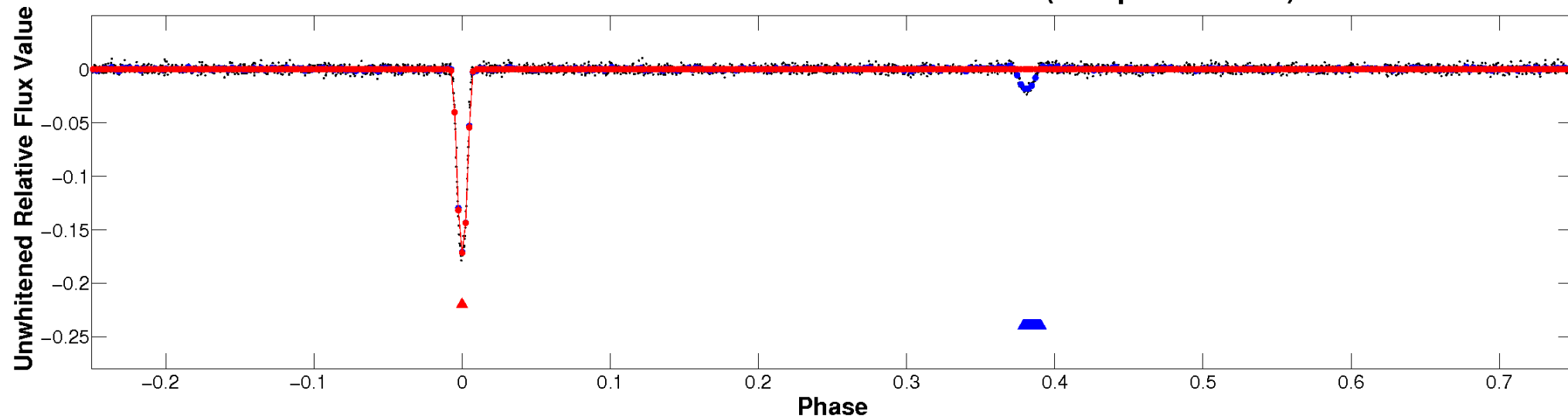
ALT Odd/Even

TCE 009411317-01

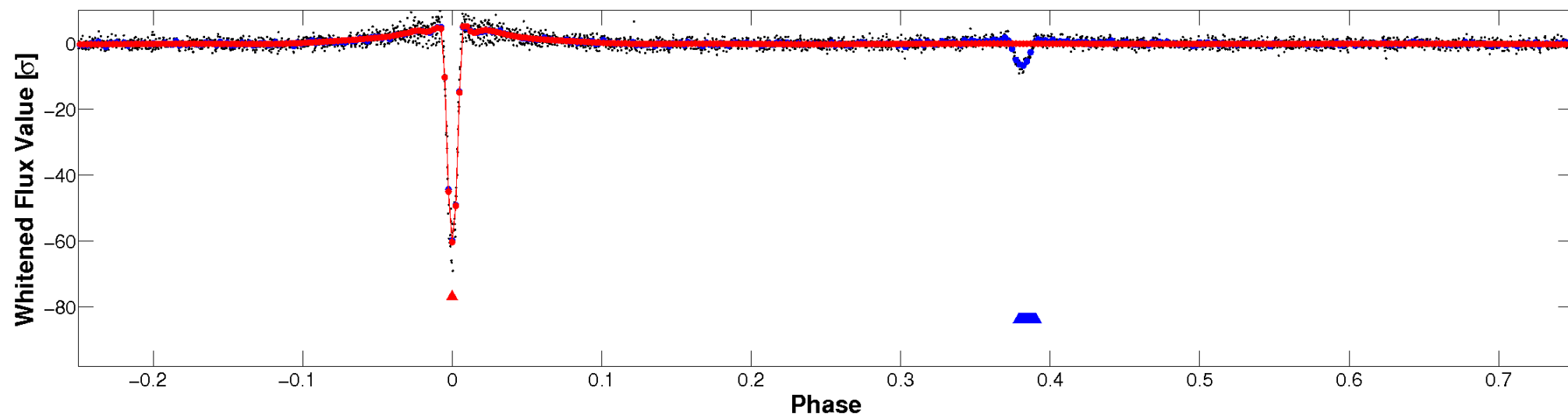


Non-Whitened Vs. Whitened Light Curve

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

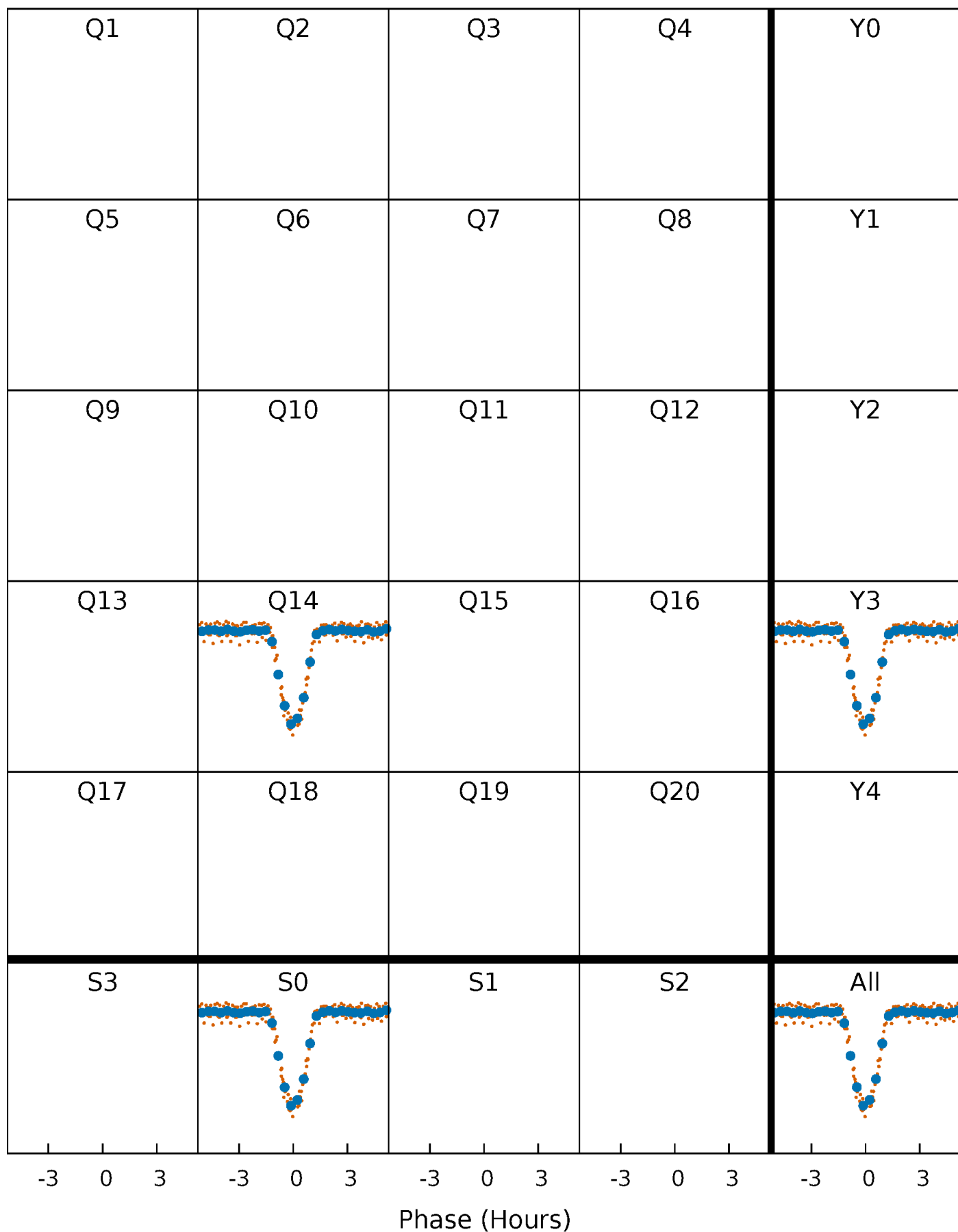


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



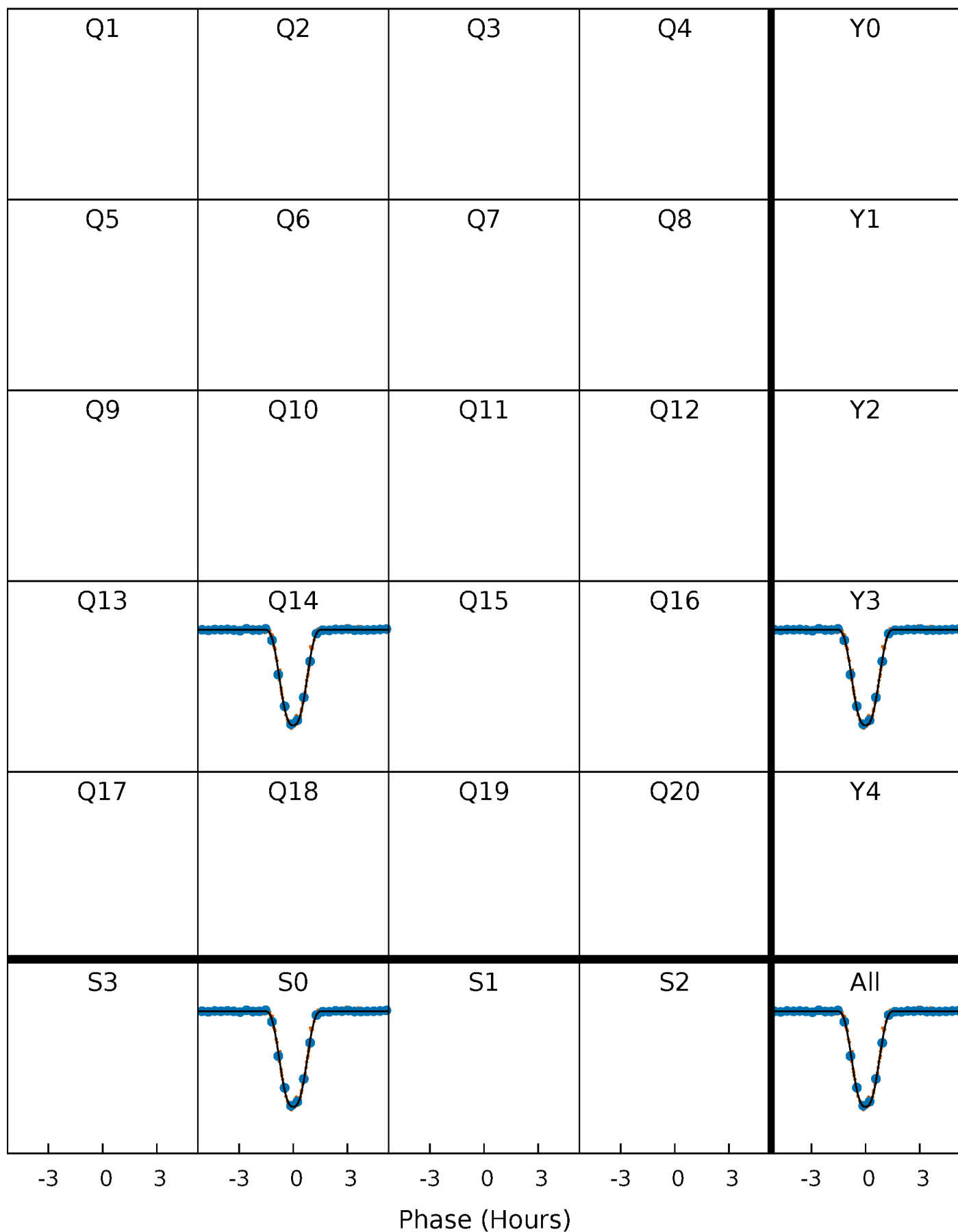
PDC Quarter-Phased Transit Curves

TCE 009411317-01 P= 8.290465 Days $T_0=132.248730$ (BKJD)



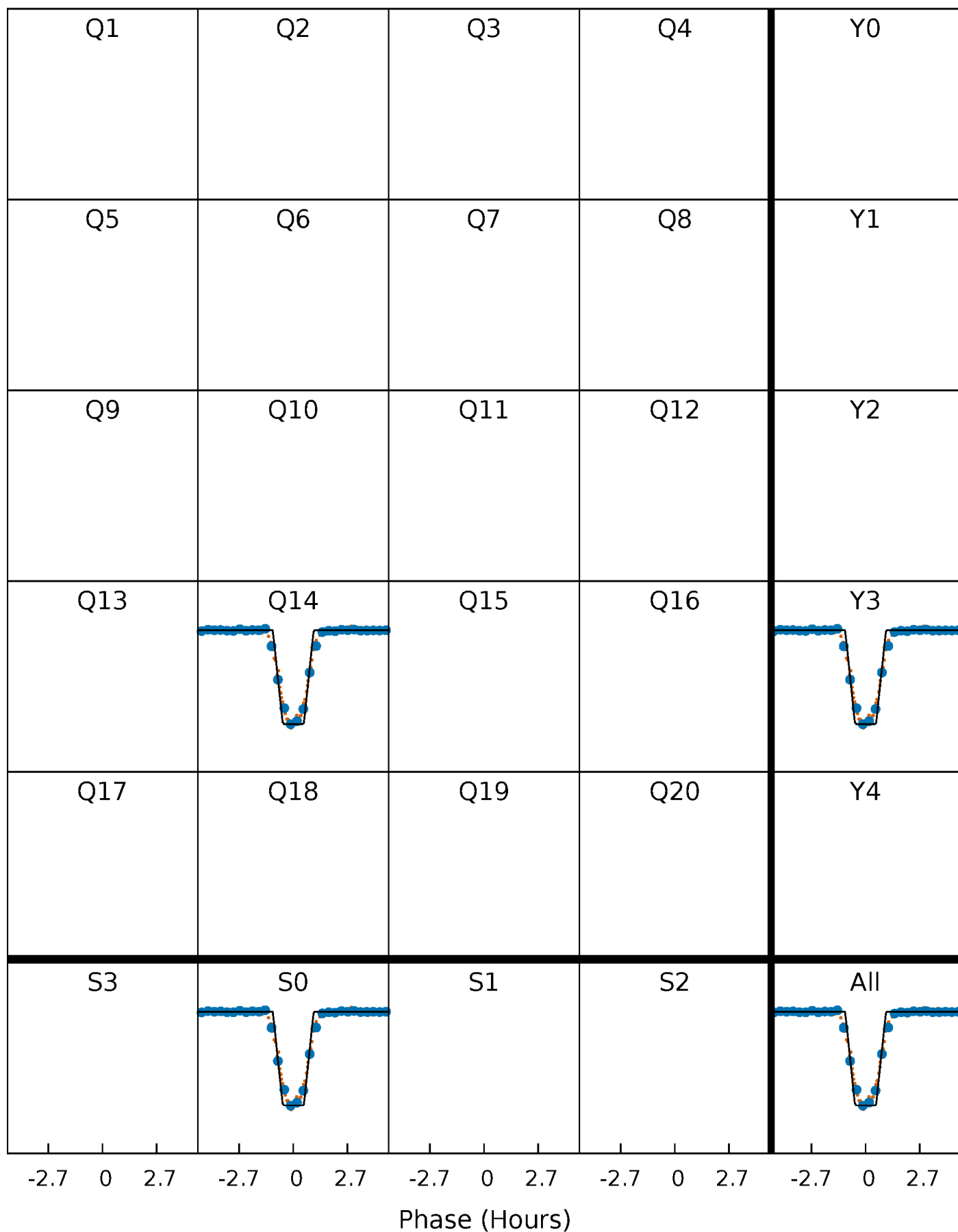
DV Quarter-Phased Transit Curves

TCE 009411317-01 P= 8.290465 Days $T_0=132.248730$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

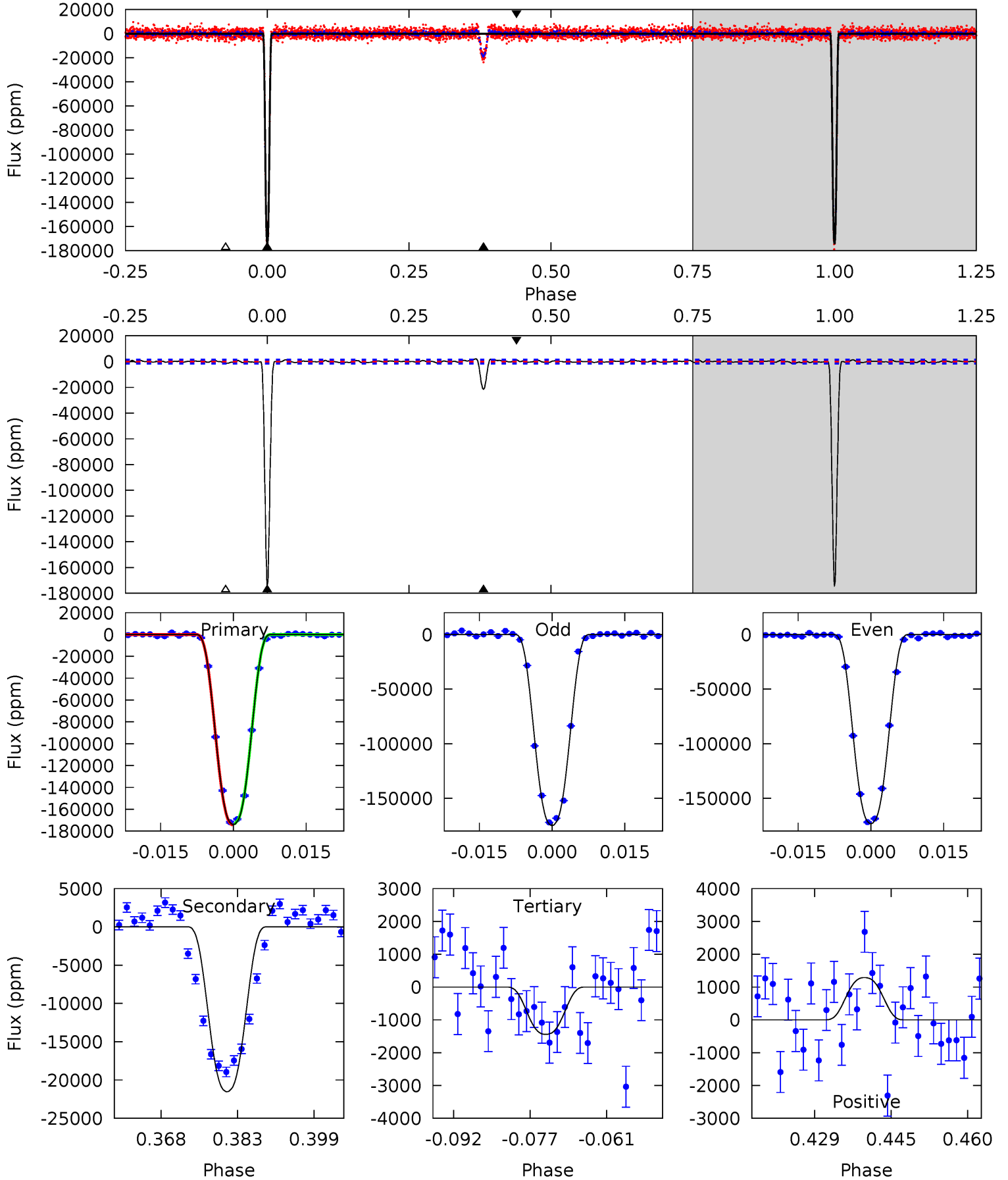
TCE 009411317-01 P= 8.290352 Days $T_0=132.265013$ (BKJD)



DV Model-Shift Uniqueness Test

009411317-01, P = 8.290465 Days, E = 132.248730 Days

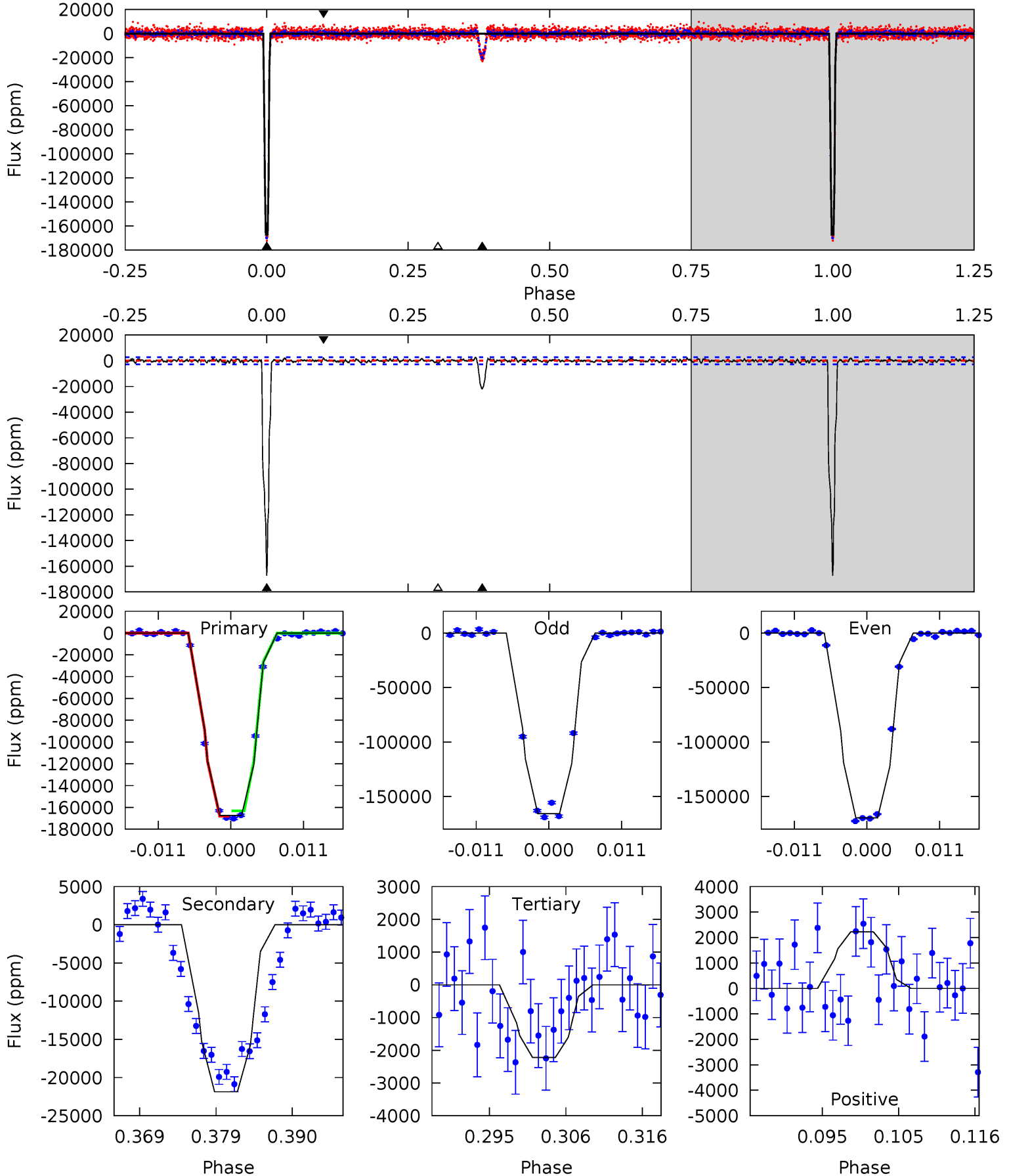
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
561.9	69.5	4.66	4.16	4.94	2.42	1.64	557.2	557.7	64.8	65.3	2.84	0.99	0.01	1.38



Alt Model-Shift Uniqueness Test

009411317-01, P = 8.290352 Days, E = 132.265013 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
298.8	39.0	3.96	3.96	5.02	2.56	1.21	294.9	294.9	35.1	35.1	3.61	1.00	0.02	3.70



Stellar Parameters For KIC 009411317

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4601^{+162}_{-178}	$4.681^{+0.056}_{-0.032}$	$-0.860^{+0.350}_{-0.300}$	$0.566^{+0.043}_{-0.047}$	$0.559^{+0.049}_{-0.031}$	$4.352^{+1.008}_{-0.565}$
	+4%/-4%	+1%/-1%	+41%/-35%	+8%/-8%	+9%/-6%	+23%/-13%
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 009411317-01 / KOI 6067.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21518 ± 310	$24.16^{+0.98}_{-0.99}$	825^{+35}_{-32}	3288^{+88}_{-95}	91^{+7}_{-6}
Alt.	-21860 ± 560	$25.52^{+1.17}_{-1.15}$	827^{+36}_{-33}	3247^{+94}_{-94}	83^{+7}_{-6}

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

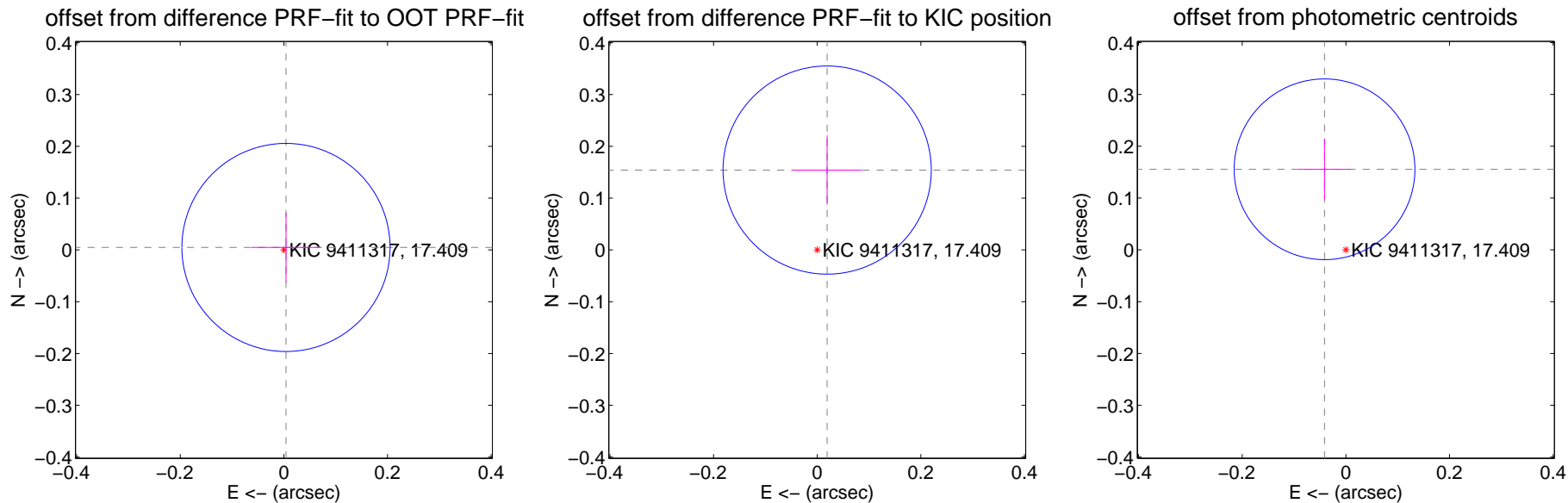
DV Centroid Data

Supplemental centroid analysis for 009411317-01. Kepler magnitude: 17.41. Transit SNR 291.31

There are 1 quarters with good PRF difference image offsets

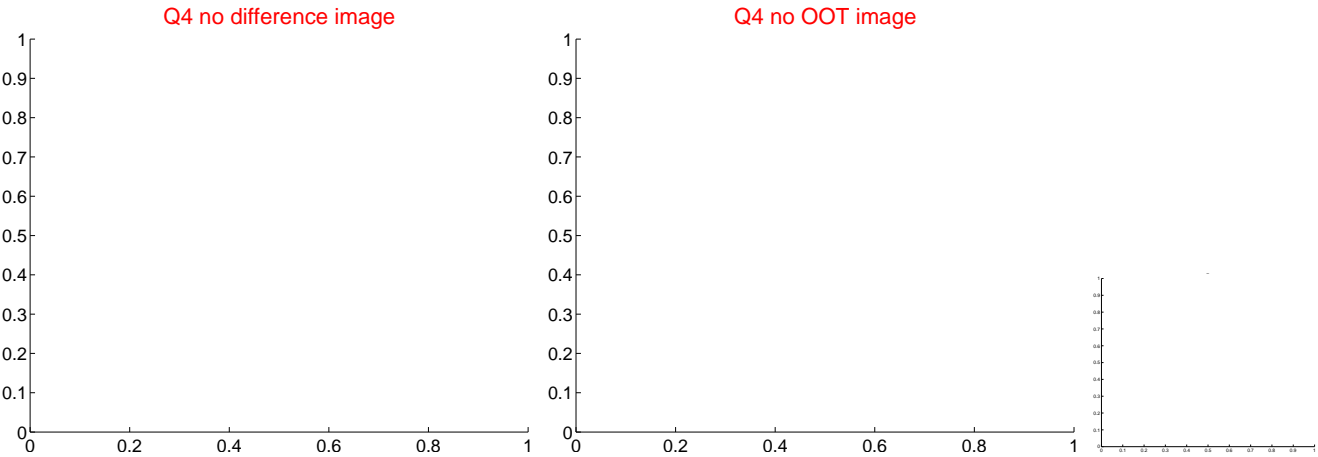
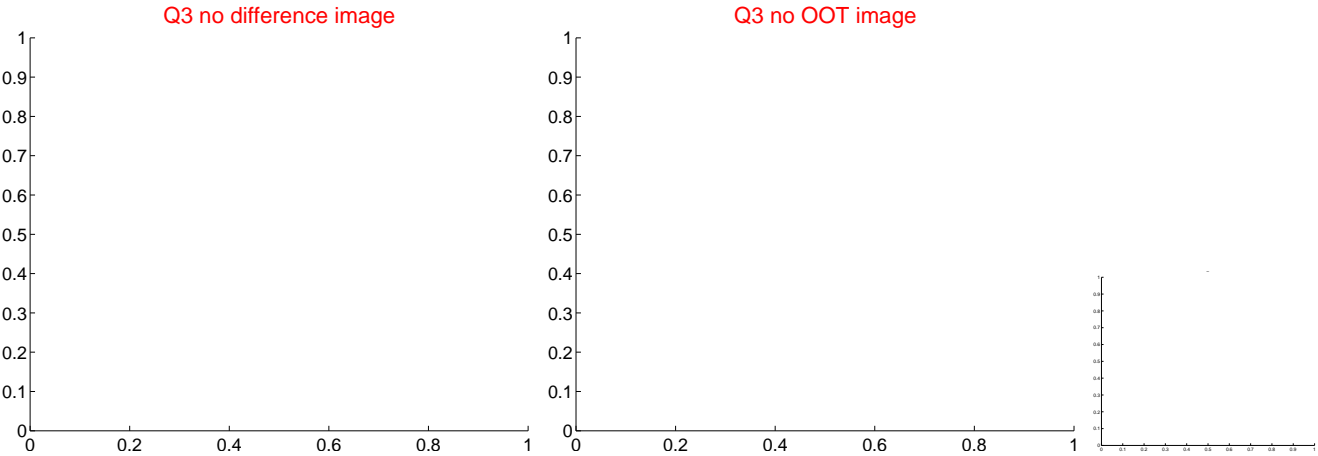
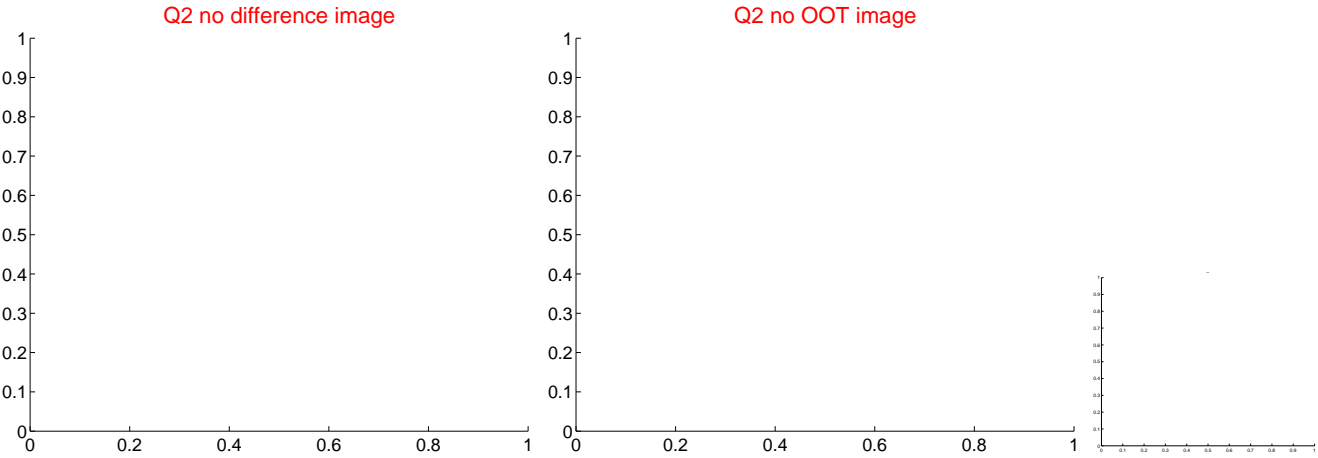
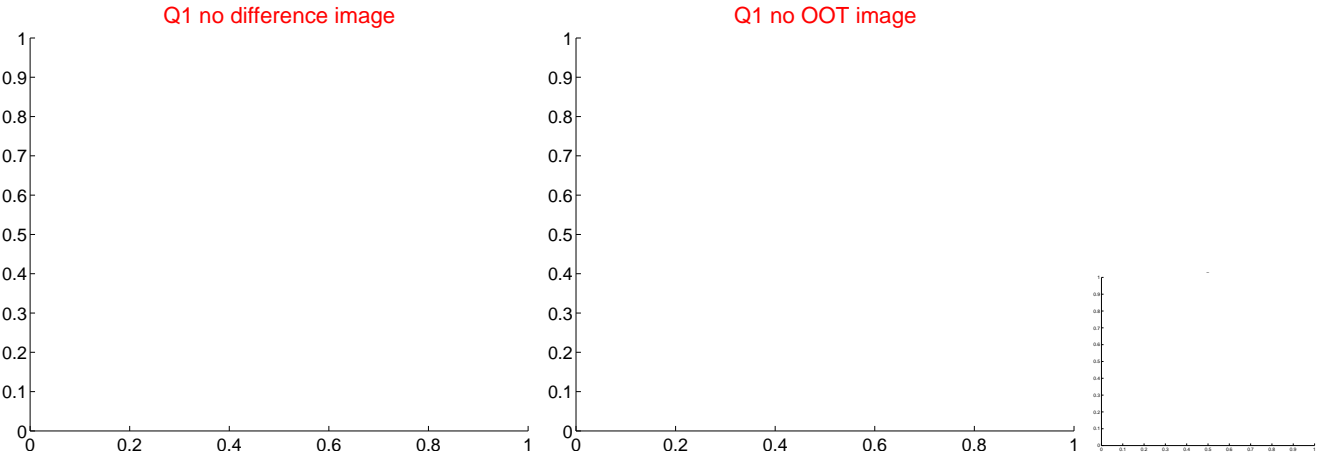
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.067	0.09	-0.004 ± 0.067	0.005 ± 0.067
PRF-fit source offset from KIC position	0.155 ± 0.067	2.32	-0.019 ± 0.067	0.154 ± 0.067
photometric centroid source offset	0.16 ± 0.06	2.77	0.04 ± 0.05	0.16 ± 0.06



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.



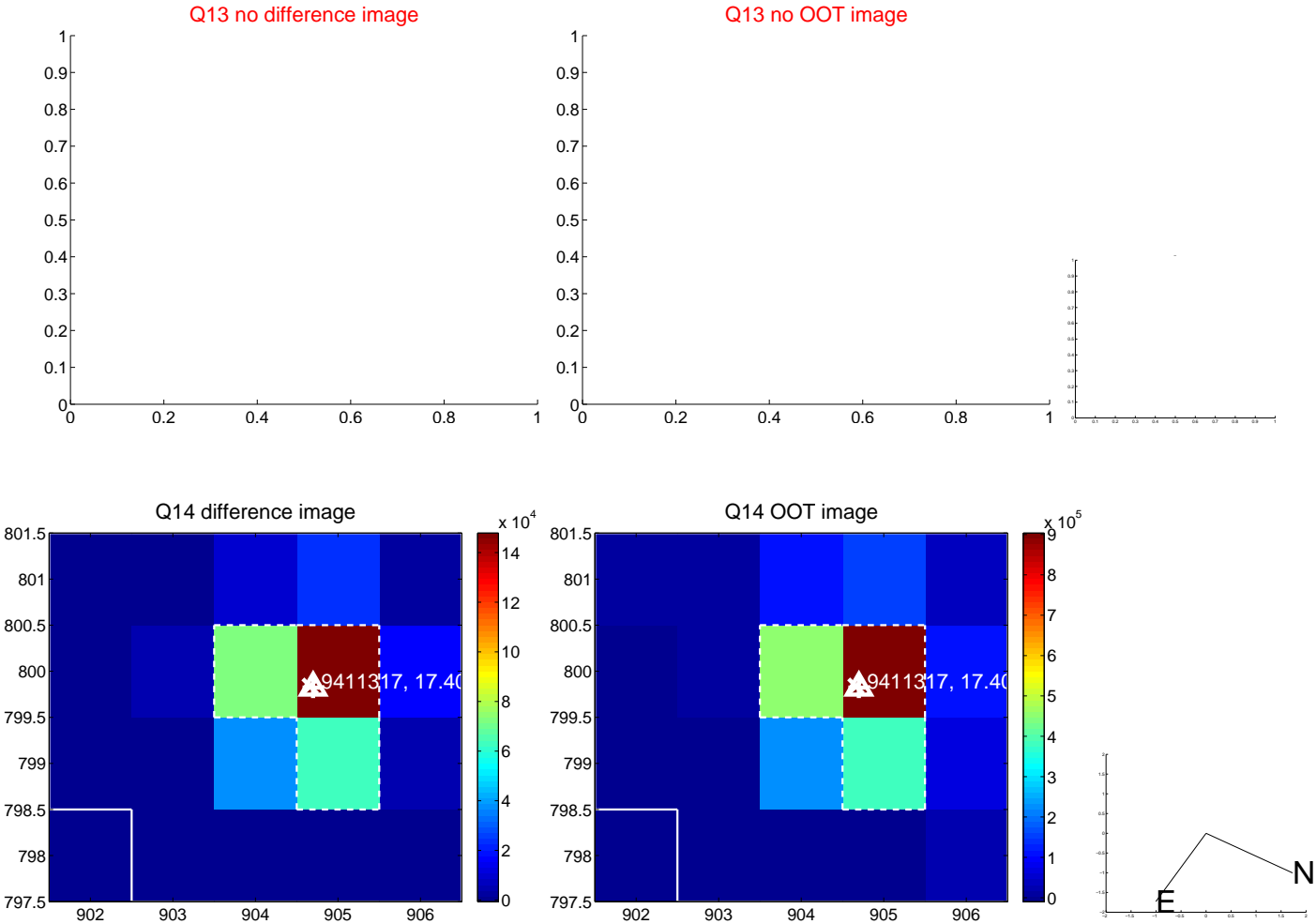
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



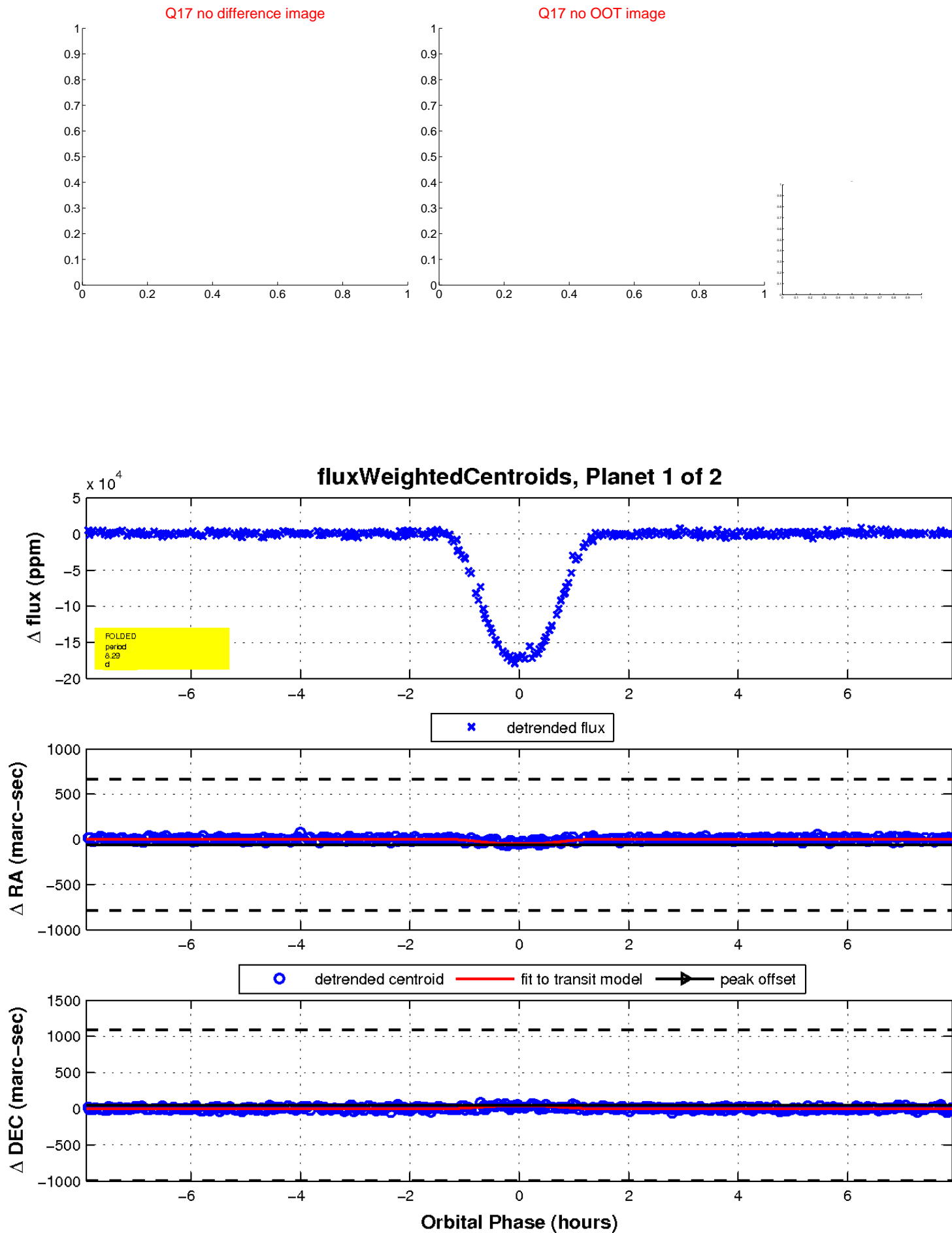
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

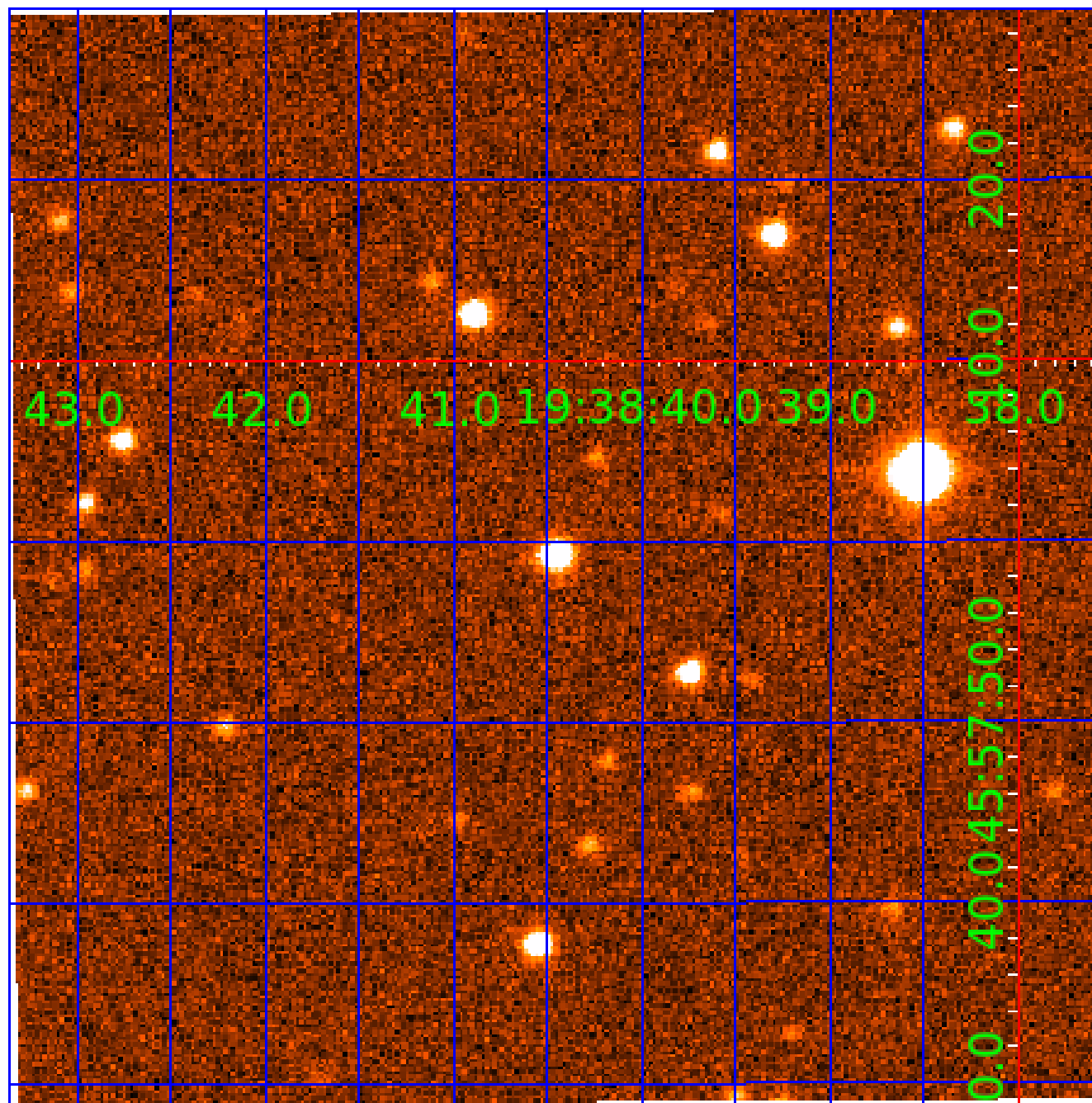


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009411317

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})
009411317-01	OBS	6067.01	8.290465	132.248730	173787.8	2.638	333.8	291.3	0.57	4601	24.21	29.43
009411317-02	OBS	No	8.289916	135.486251	20009.0	3.718	38.5	41.3	0.57	4601	10.62	29.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009411317-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_FEW_DIFFS
009411317-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 009411317-02

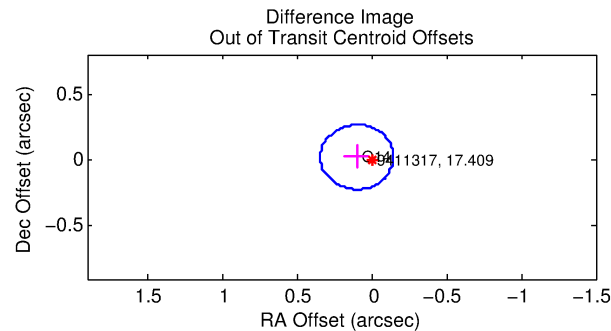
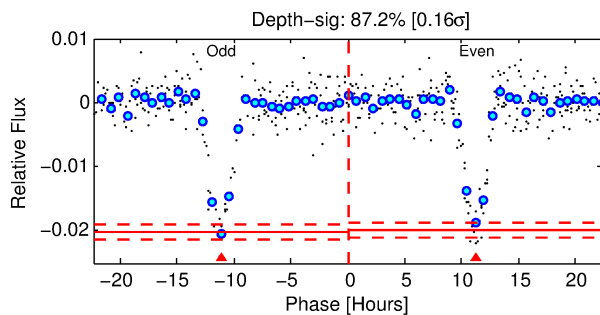
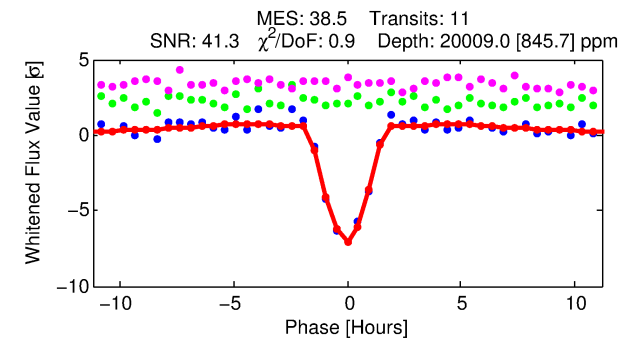
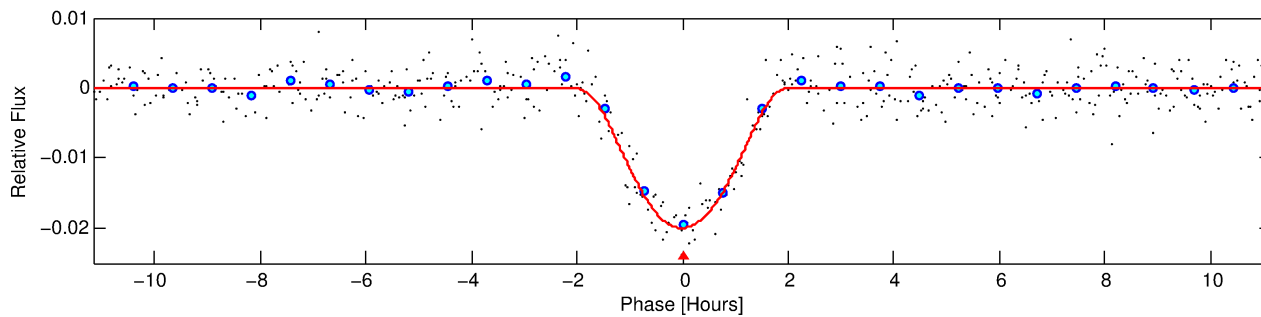
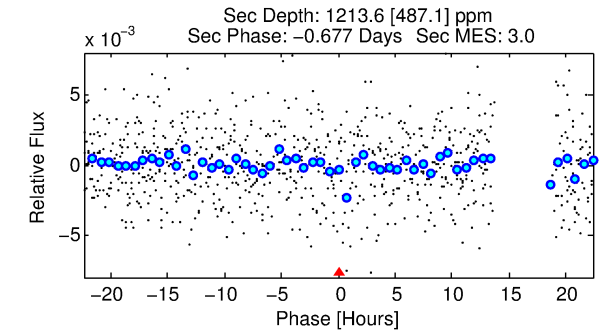
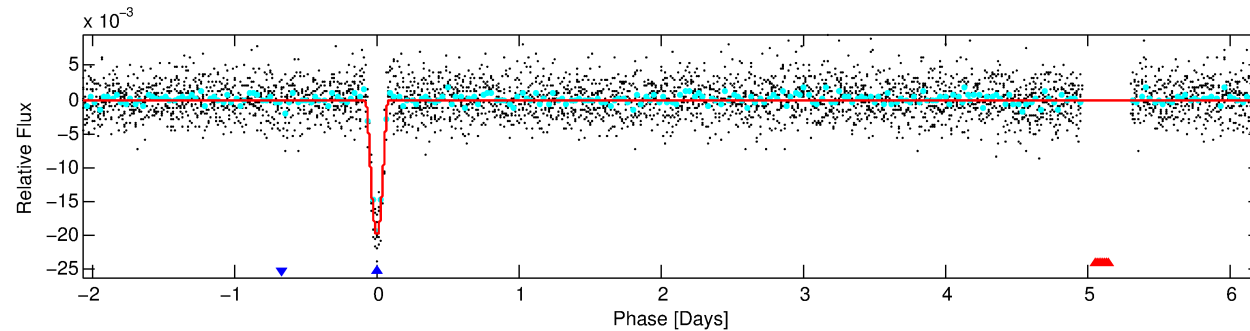
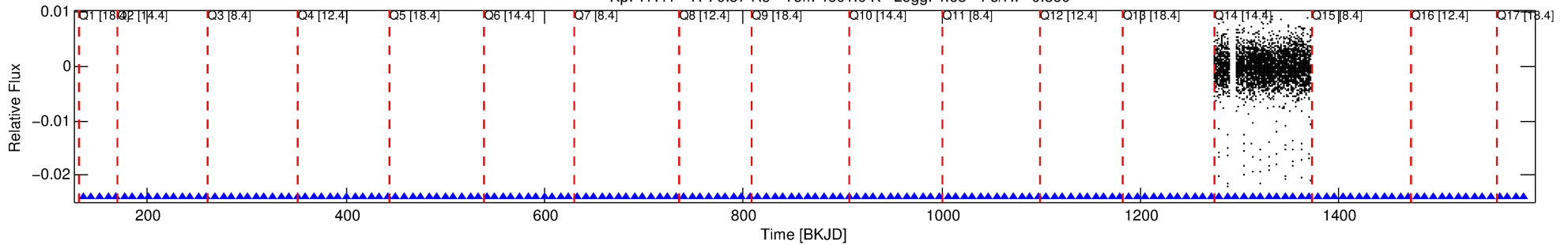
No Significant Match Found

DV One-Page Summary

KIC: 9411317 Candidate: 2 of 2 Period: 8.290 d

KOI: K06067 Corr: No Ephemeris Match

Kp: 17.41 R*: 0.57 Rs Teff: 4601.0 K Logg: 4.68 Fe/H: -0.860



DV Fit Results:

Period = 8.28992 [0.00007] d
Epoch = 135.4863 [0.0103] BKJD
Rp/R* = 0.1720 [0.0693]
a/R* = 12.86 [1.84]
b = 0.90 [0.14]
Seff = 29.43 [5.46]
Teq = 594 [28] K
Rp = 10.63 [4.37] Re
a = 0.0661 [0.0046] AU
Ag = 25.85 [23.42] [1.06σ]
Teffp = 2070 [473] K [3.12σ]

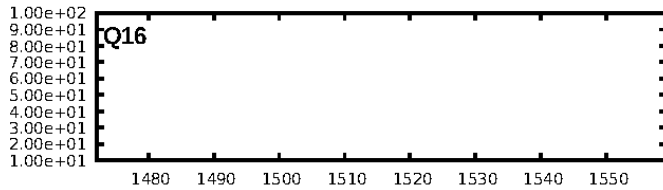
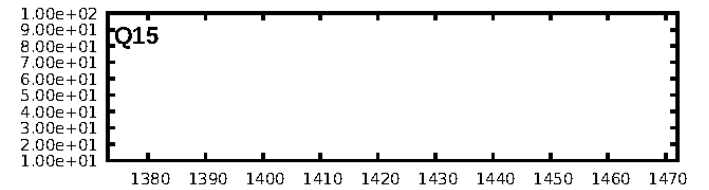
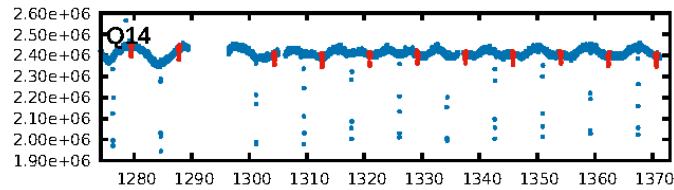
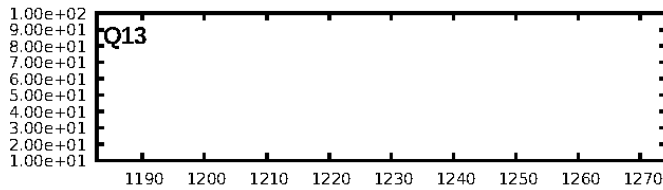
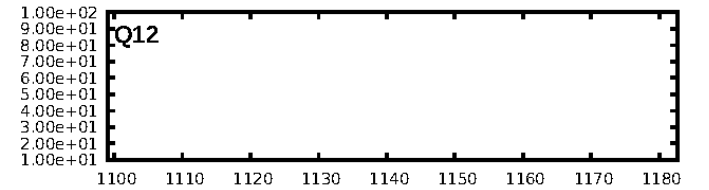
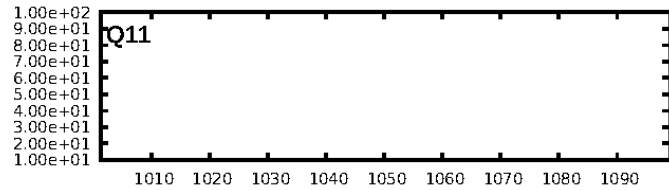
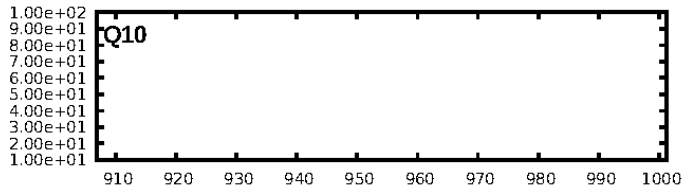
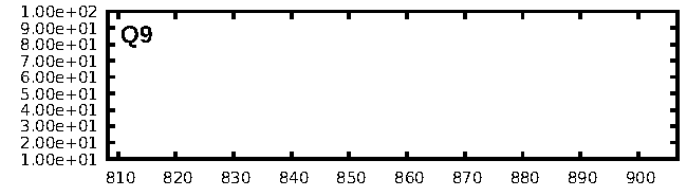
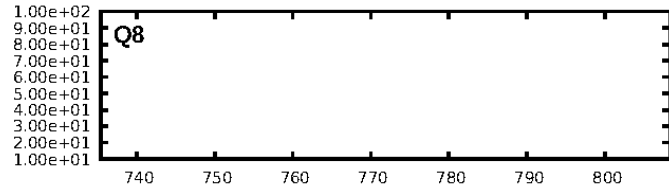
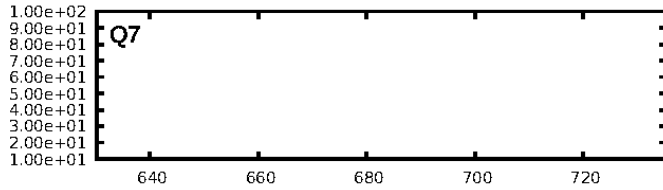
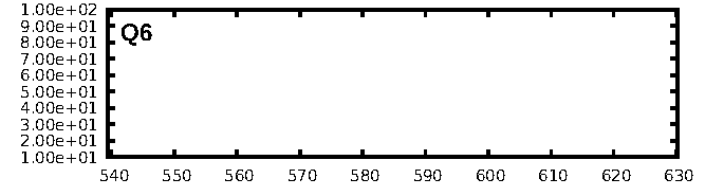
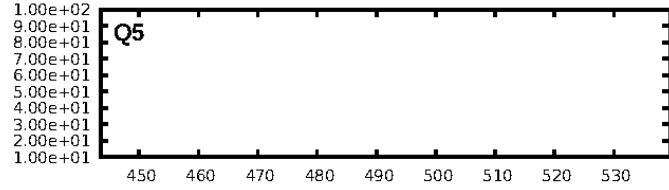
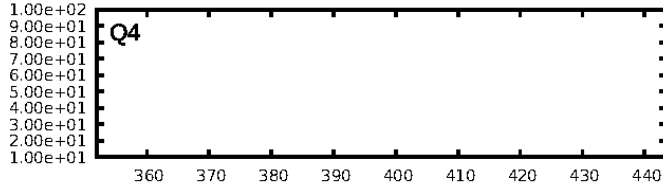
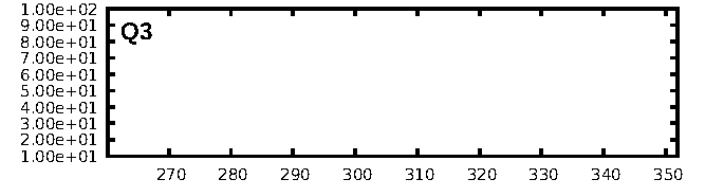
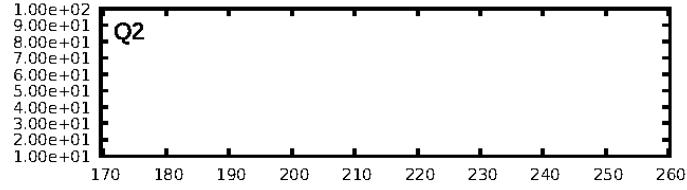
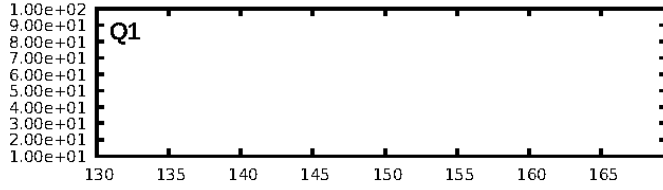
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 88.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.30e-300
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 3.514
Centroid-sig: 2.5%
Centroid-so: 0.647 arcsec [1.63σ]
OotOffset-rm: 0.100 arcsec [1.23σ]
KicOffset-rm: 0.179 arcsec [2.13σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
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DiffImageOverlap-fno: 1.00 [1/1]

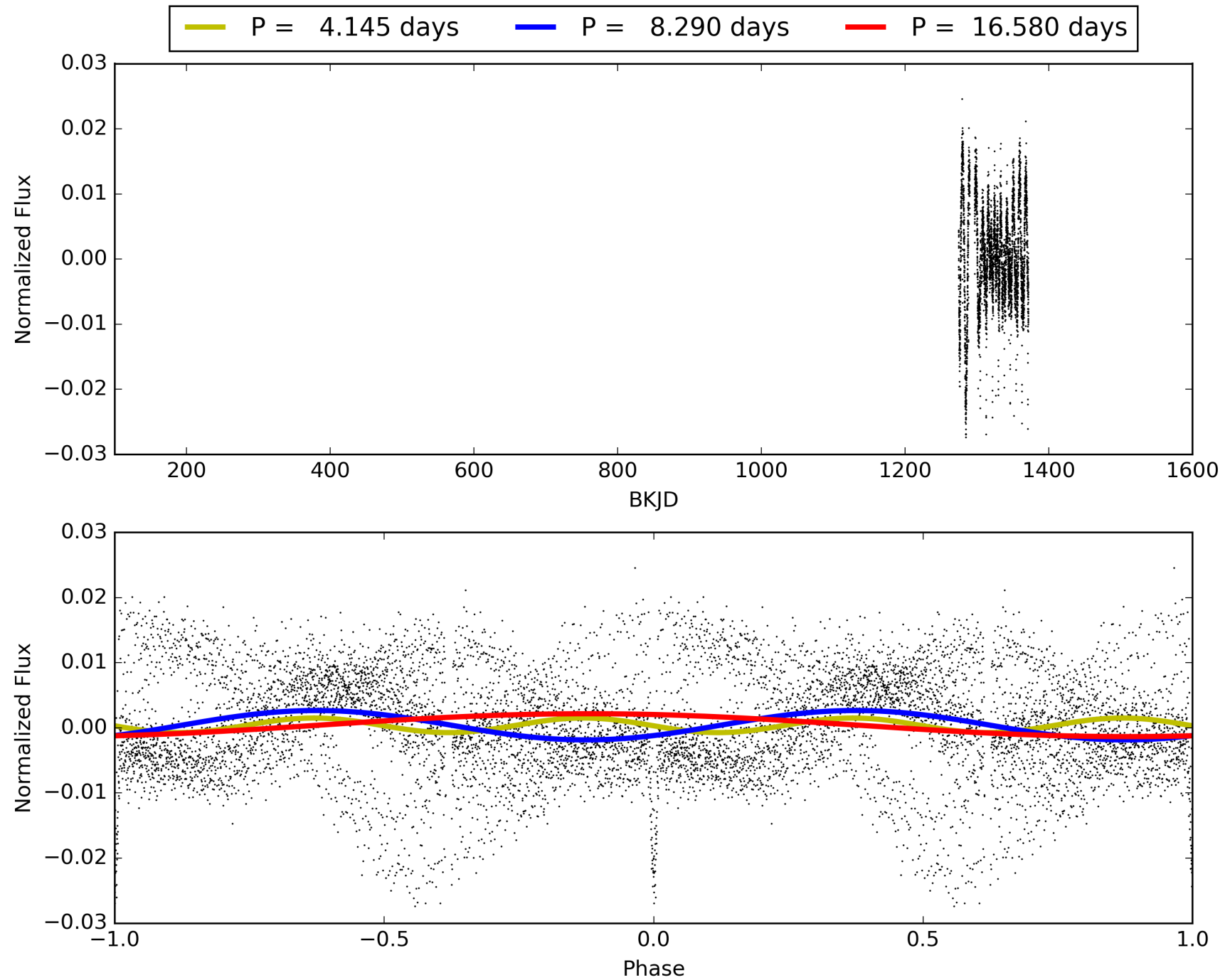
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 22:11:37 Z

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

TCE 009411317-02, PDC Light Curves

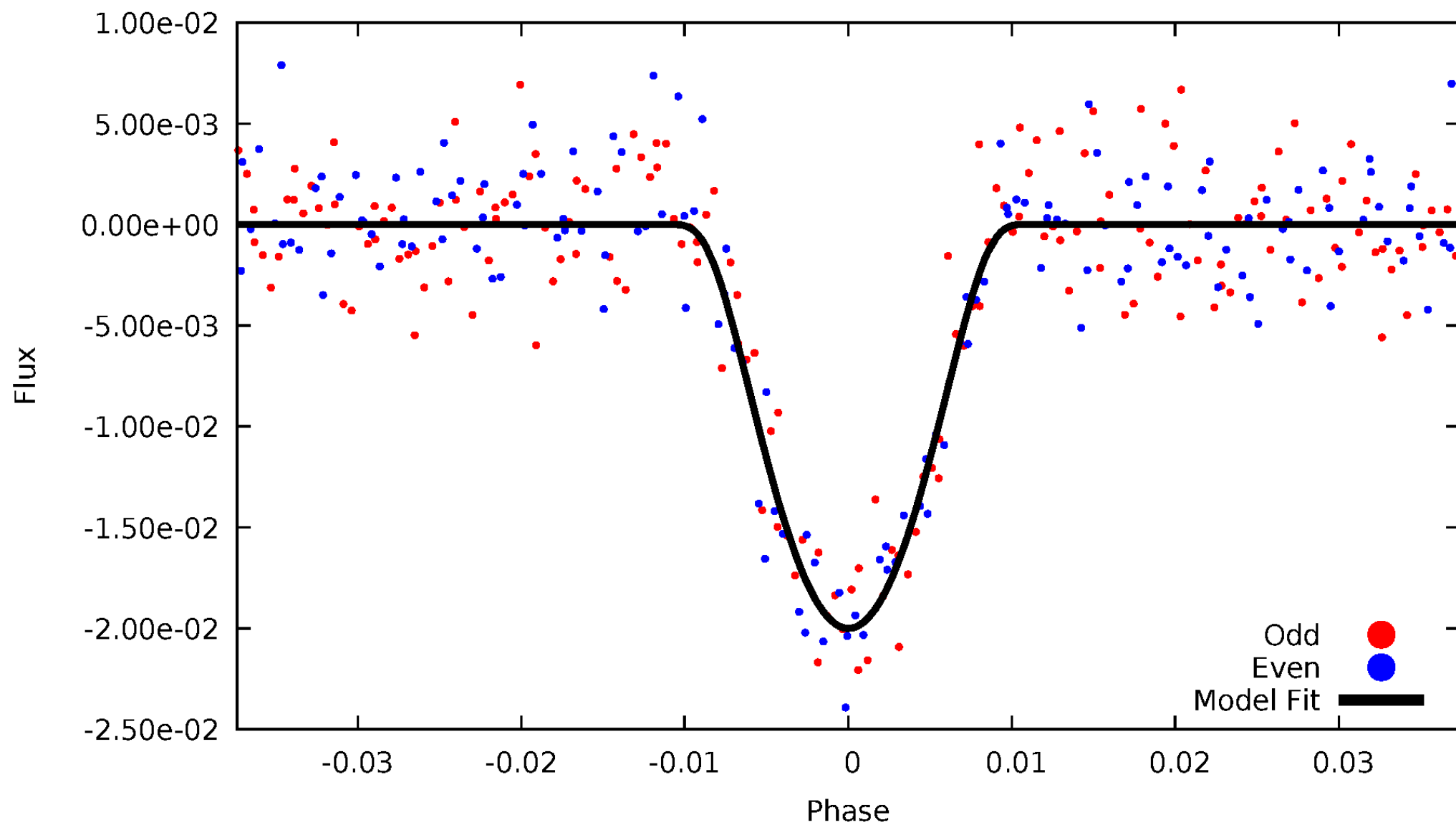


TCE 009411317-02



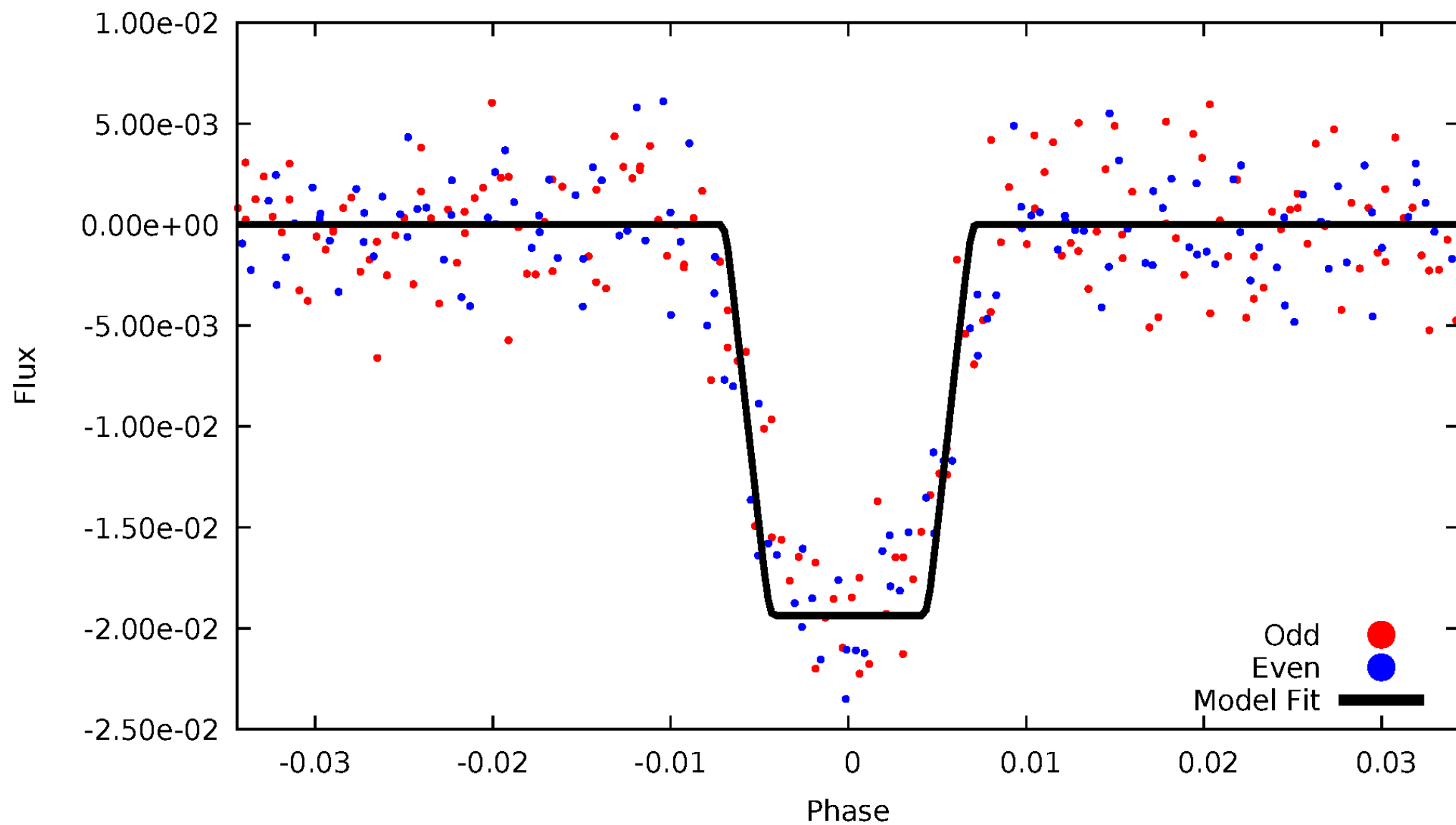
DV Odd/Even

TCE 009411317-02



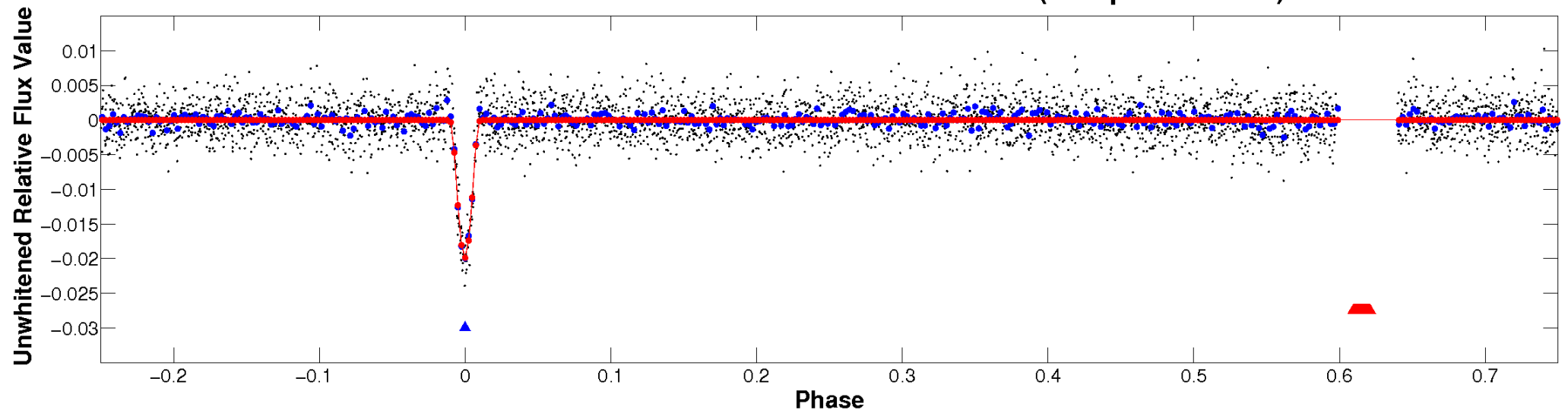
ALT Odd/Even

TCE 009411317-02

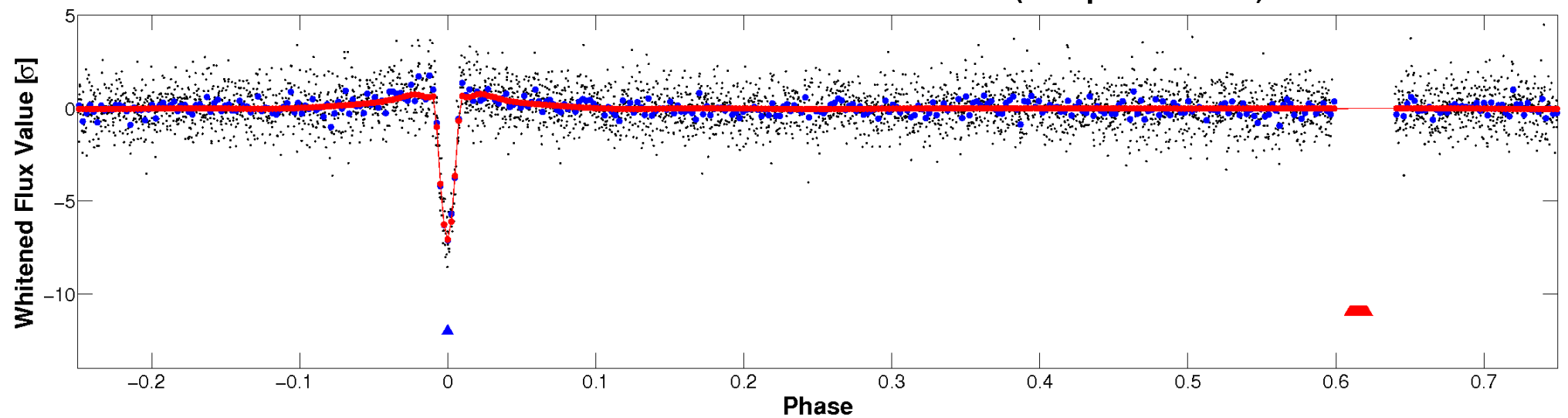


Non-Whitened Vs. Whitened Light Curve

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

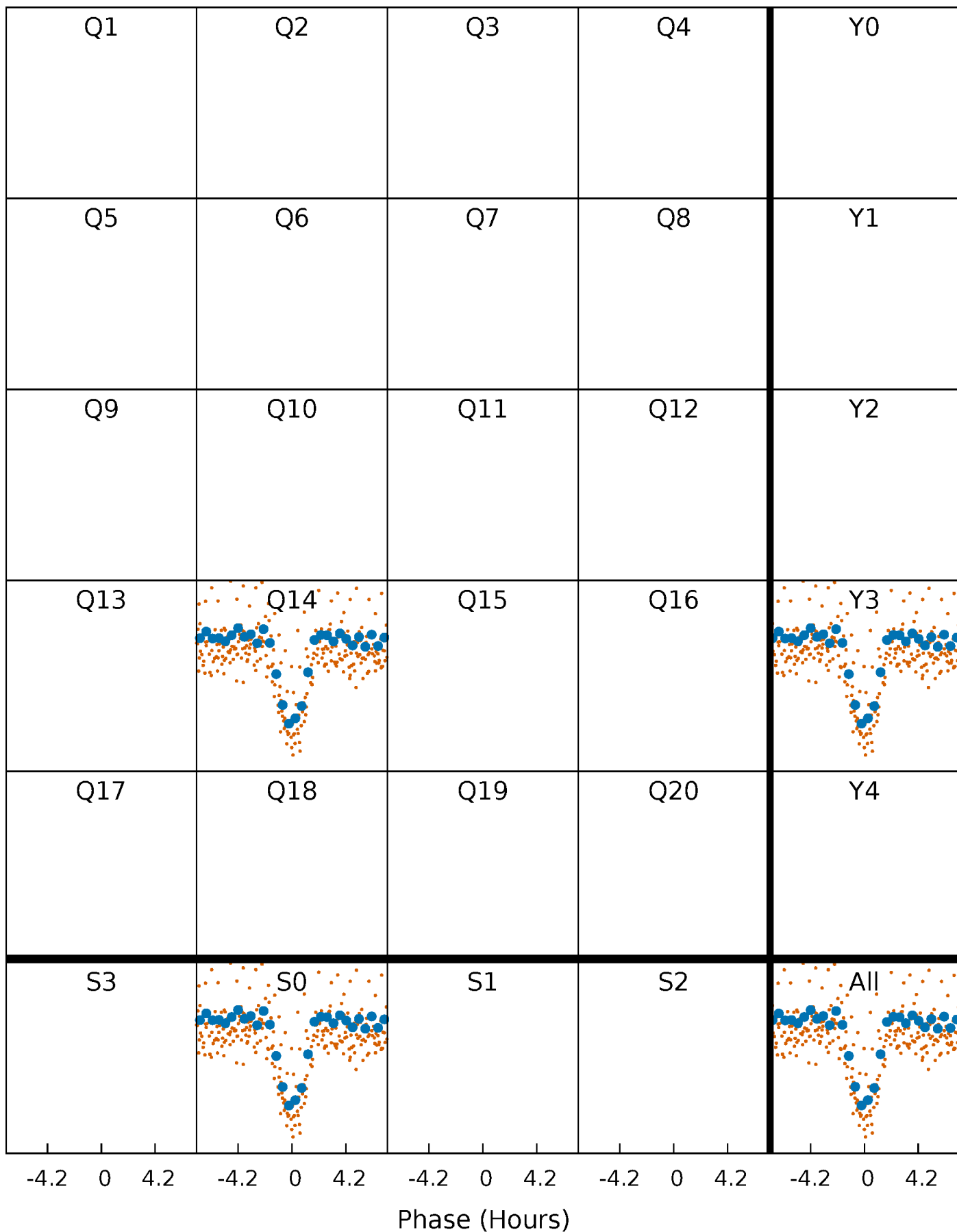


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



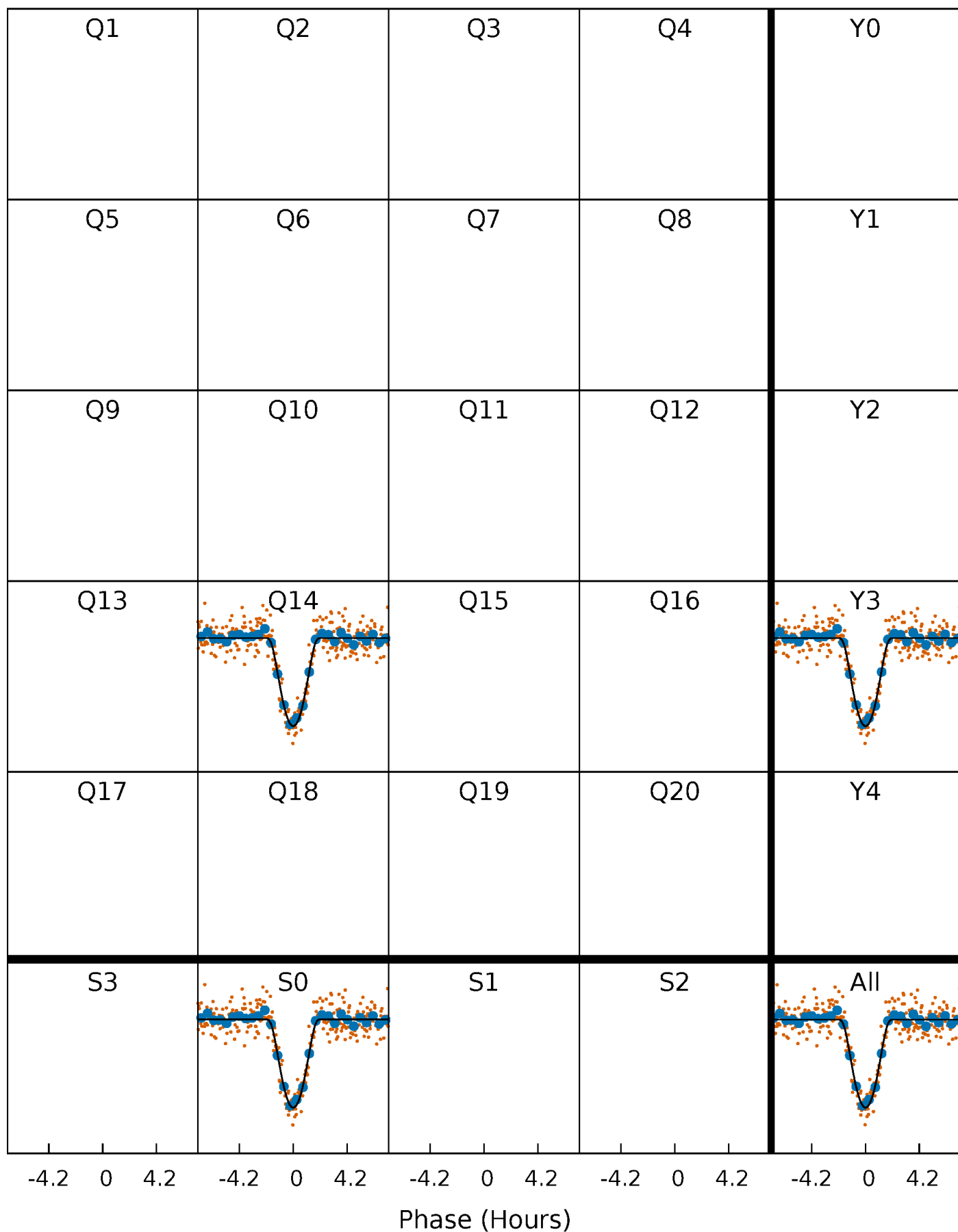
PDC Quarter-Phased Transit Curves

TCE 009411317-02 $P = 8.289916$ Days $T_0 = 135.486251$ (BKJD)



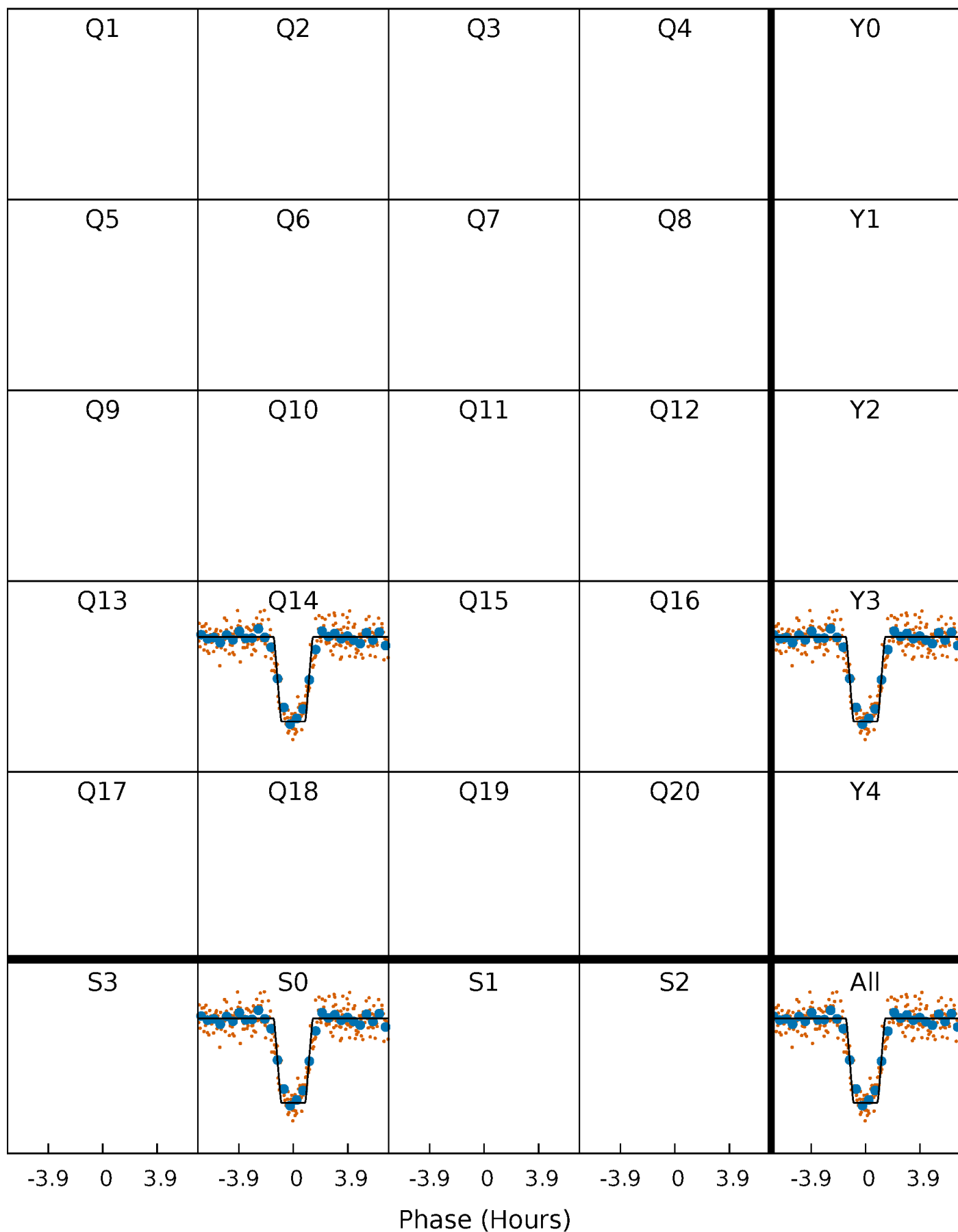
DV Quarter-Phased Transit Curves

TCE 009411317-02 P= 8.289916 Days $T_0=135.486251$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

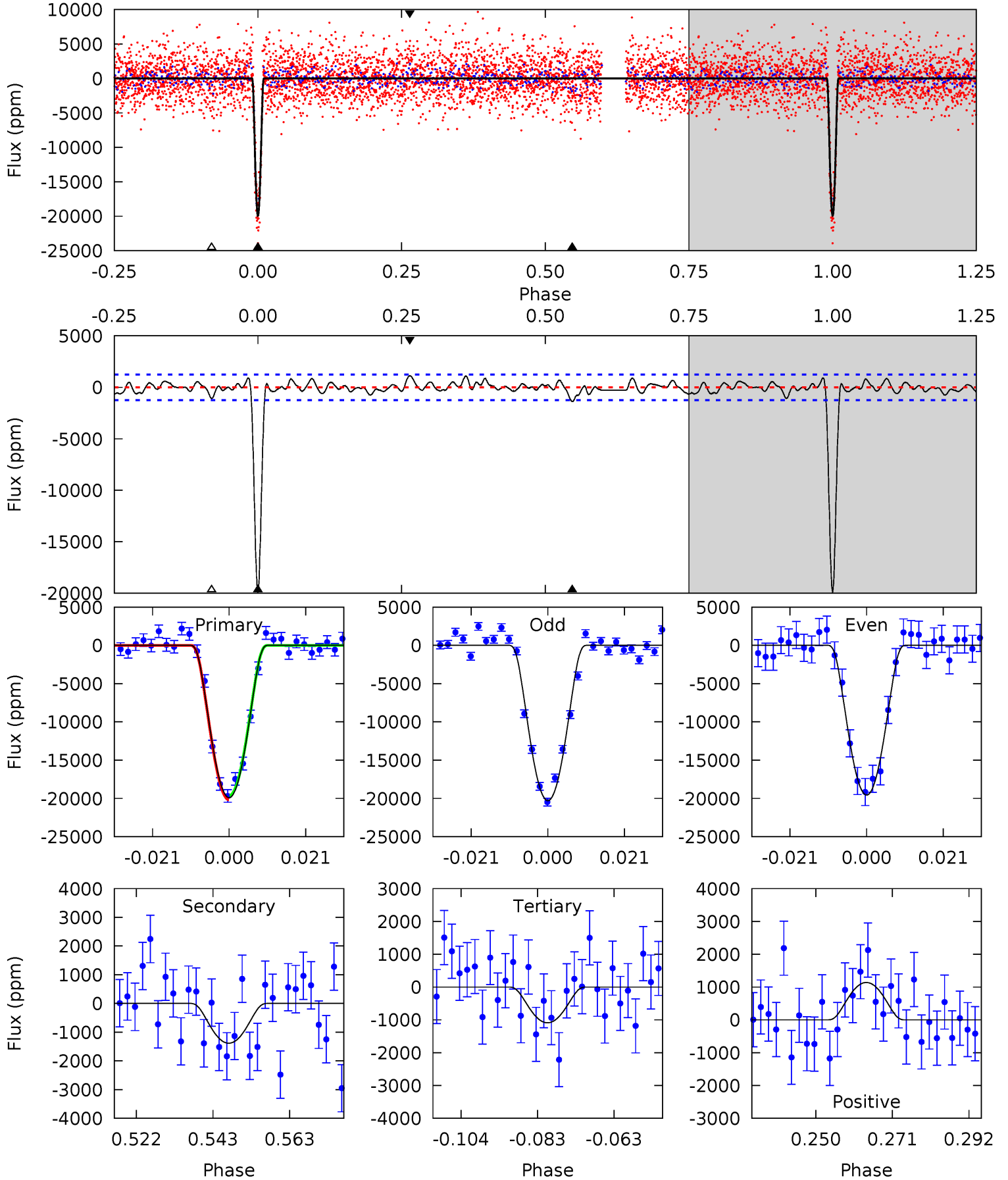
TCE 009411317-02 $P = 8.289960$ Days $T_0 = 135.479979$ (BKJD)



DV Model-Shift Uniqueness Test

009411317-02, P = 8.289916 Days, E = 135.486251 Days

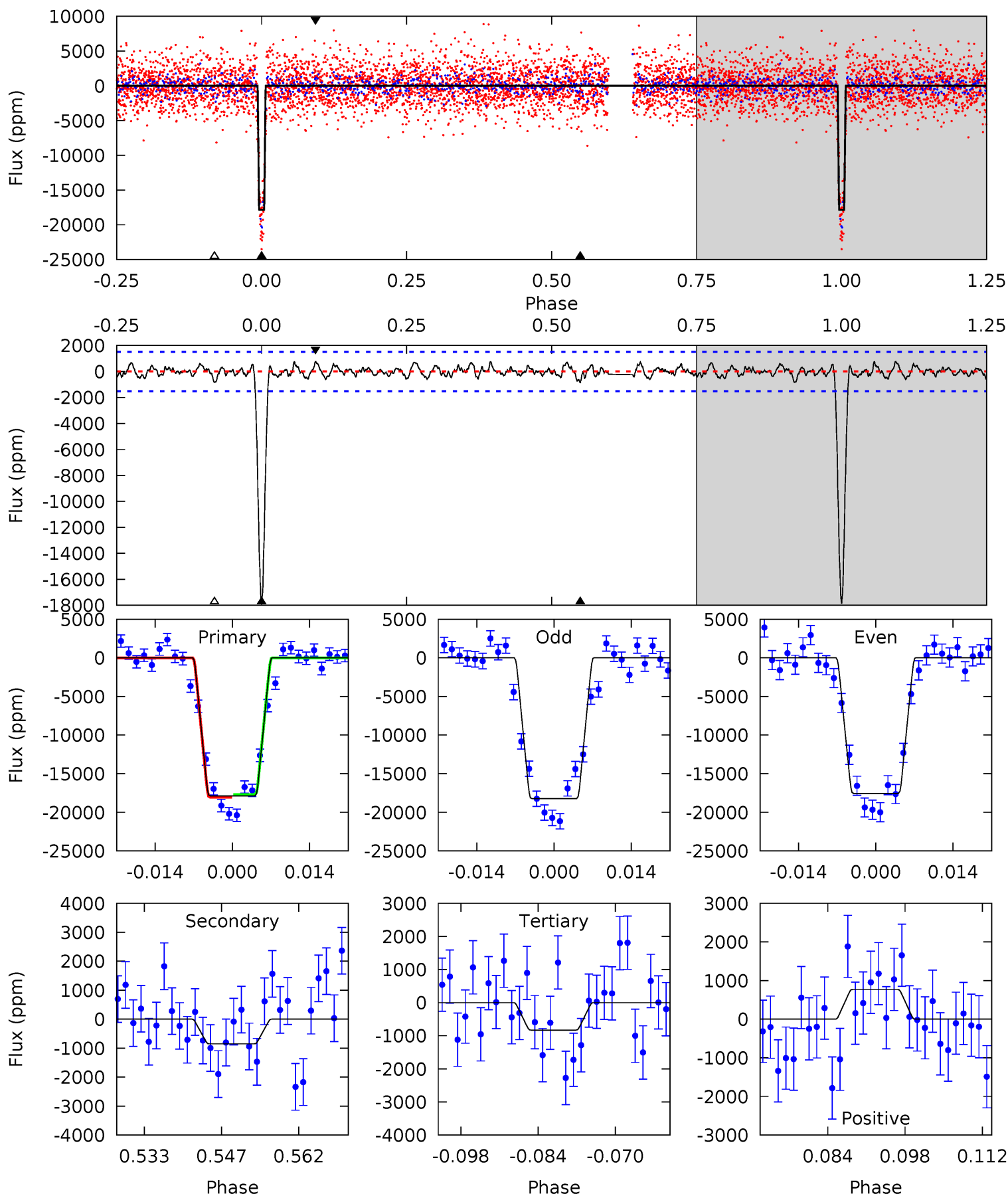
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.1	5.43	4.27	4.47	4.88	2.31	1.48	73.8	73.6	1.16	0.96	1.44	0.98	0.05	1.05



Alt Model-Shift Uniqueness Test

009411317-02, P = 8.289960 Days, E = 135.479979 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.6	2.80	2.73	2.53	4.96	2.46	0.96	55.9	56.1	0.07	0.27	1.10	0.97	0.04	0.57



Stellar Parameters For KIC 009411317

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4601^{+162}_{-178}	$4.681^{+0.056}_{-0.032}$	$-0.860^{+0.350}_{-0.300}$	$0.566^{+0.043}_{-0.047}$	$0.559^{+0.049}_{-0.031}$	$4.352^{+1.008}_{-0.565}$
	+4%/-4%	+1%/-1%	+41%/-35%	+8%/-8%	+9%/-6%	+23%/-13%
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 009411317-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1385 ± 255	$10.72^{+3.96}_{-4.39}$	825^{+33}_{-33}	2790^{+450}_{-244}	29^{+54}_{-14}
Alt.	-853 ± 305	$8.54^{+4.06}_{-4.18}$	826^{+32}_{-36}	2764^{+593}_{-293}	28^{+76}_{-16}

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

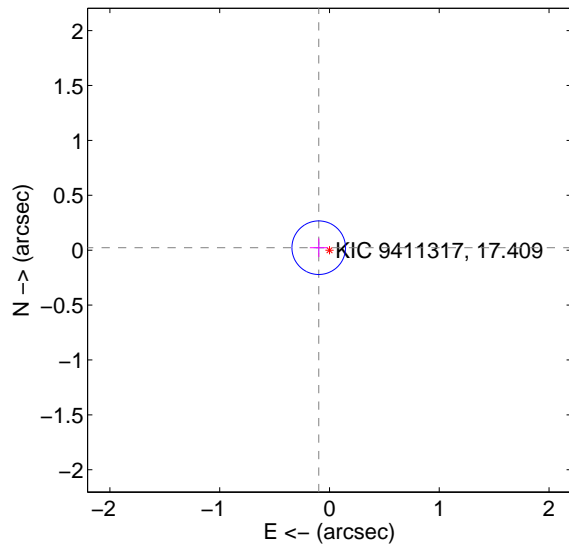
Supplemental centroid analysis for 009411317-02. Kepler magnitude: 17.41. Transit SNR 41.28

There are 1 quarters with good PRF difference image offsets

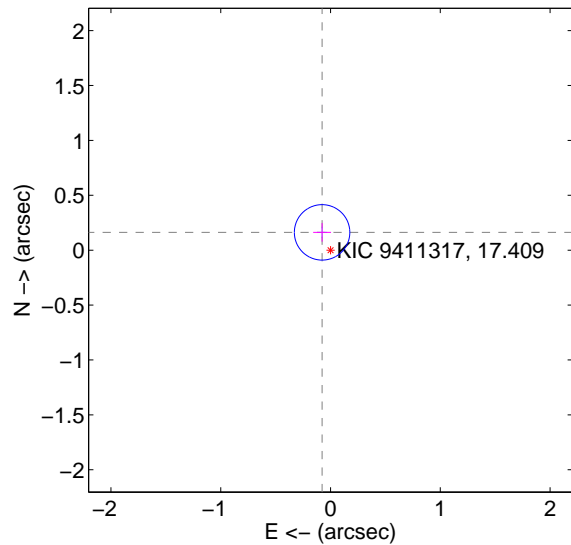
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.100 ± 0.081	1.23	0.098 ± 0.081	0.022 ± 0.085
PRF-fit source offset from KIC position	0.179 ± 0.084	2.13	0.077 ± 0.081	0.162 ± 0.085
photometric centroid source offset	0.65 ± 0.40	1.63	0.57 ± 0.38	0.30 ± 0.44

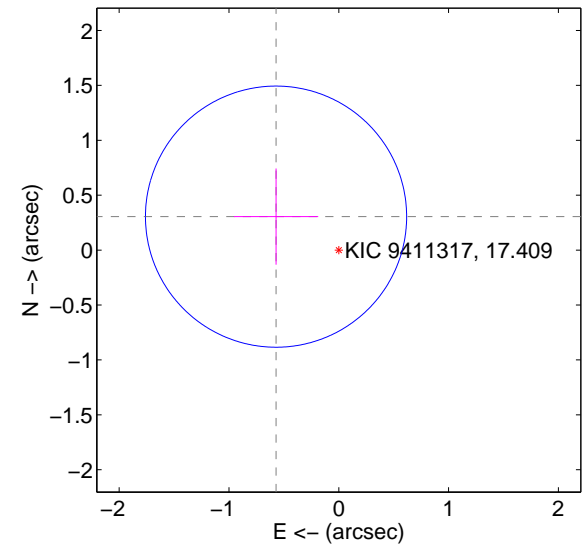
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

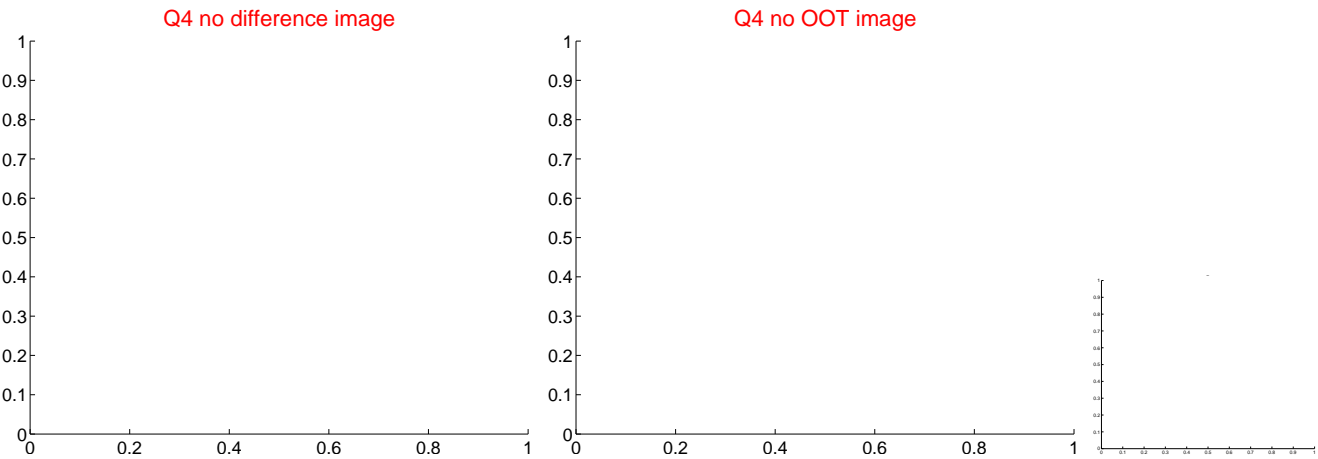
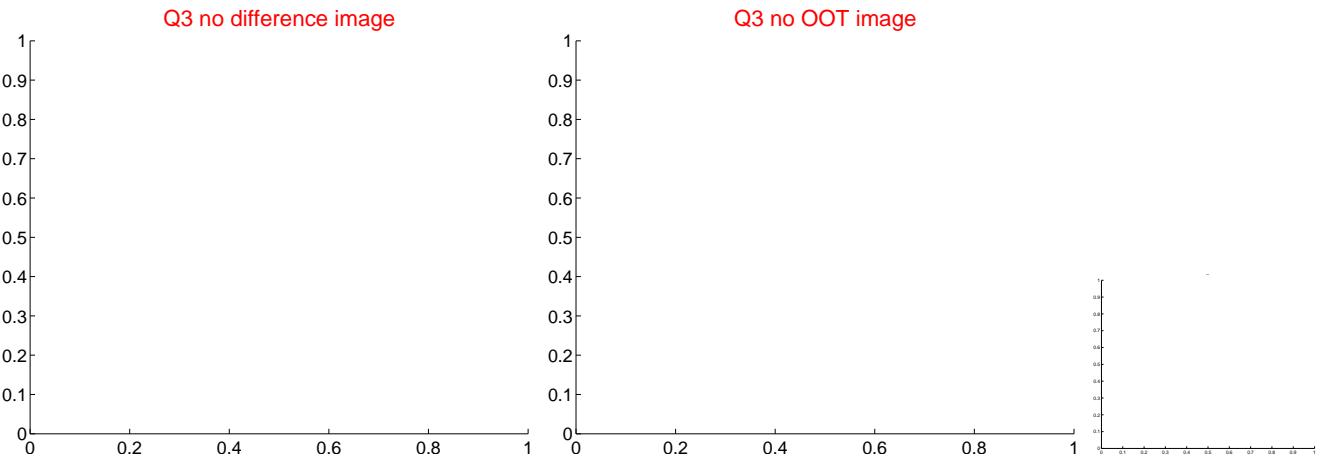
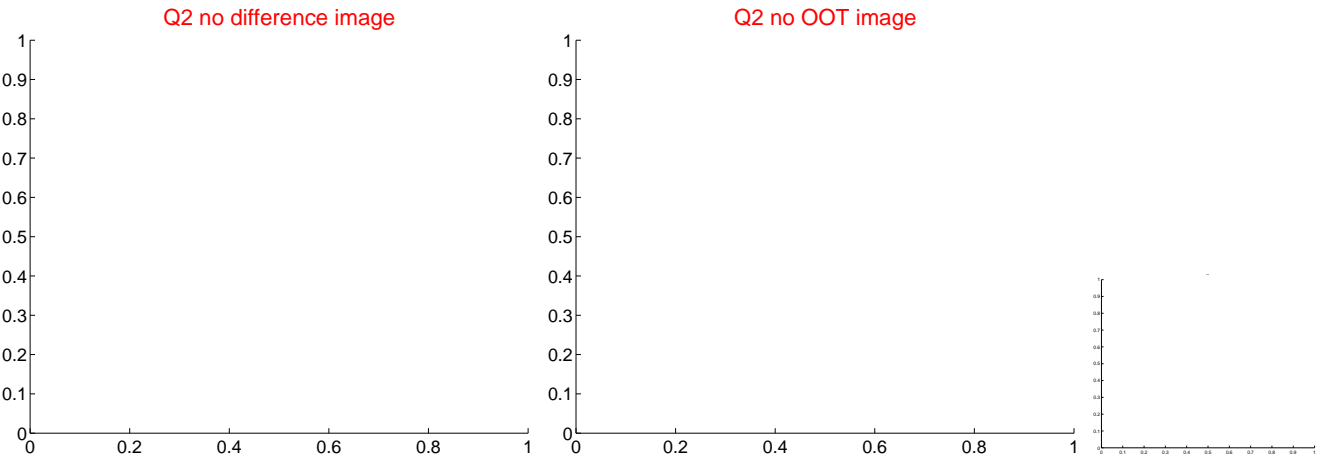
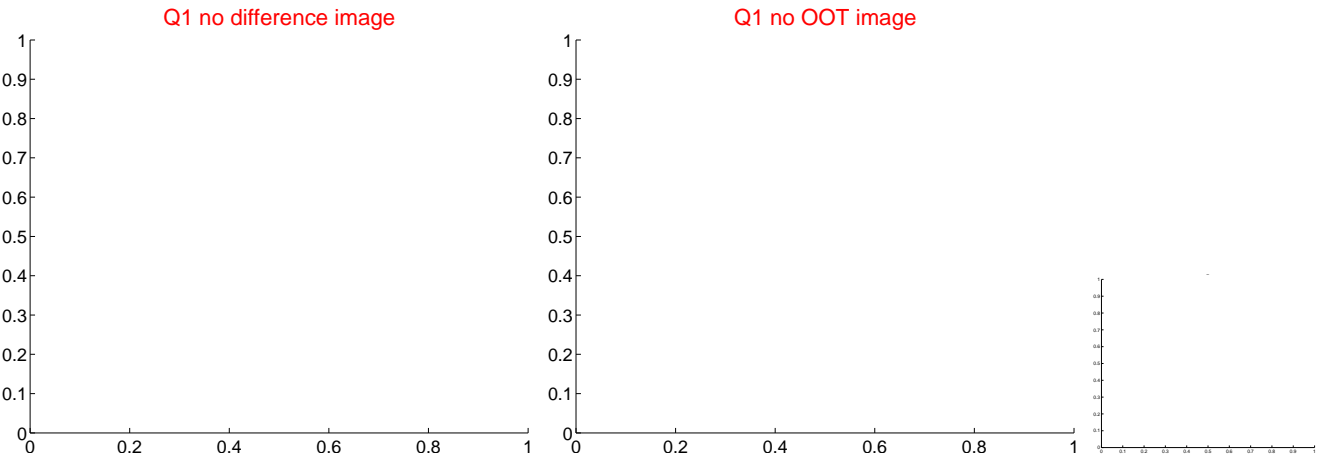


offset from photometric centroids

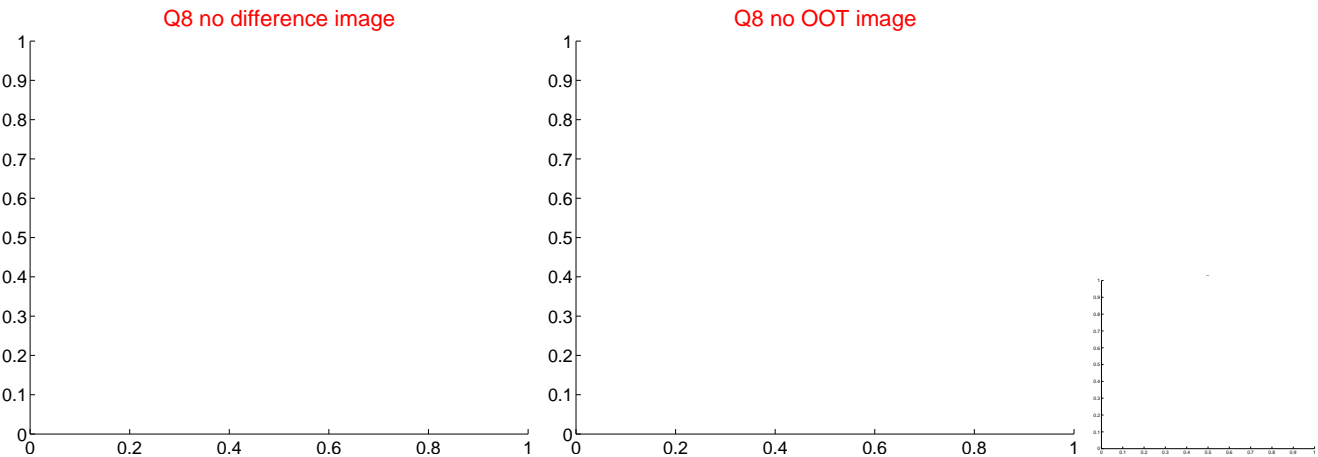
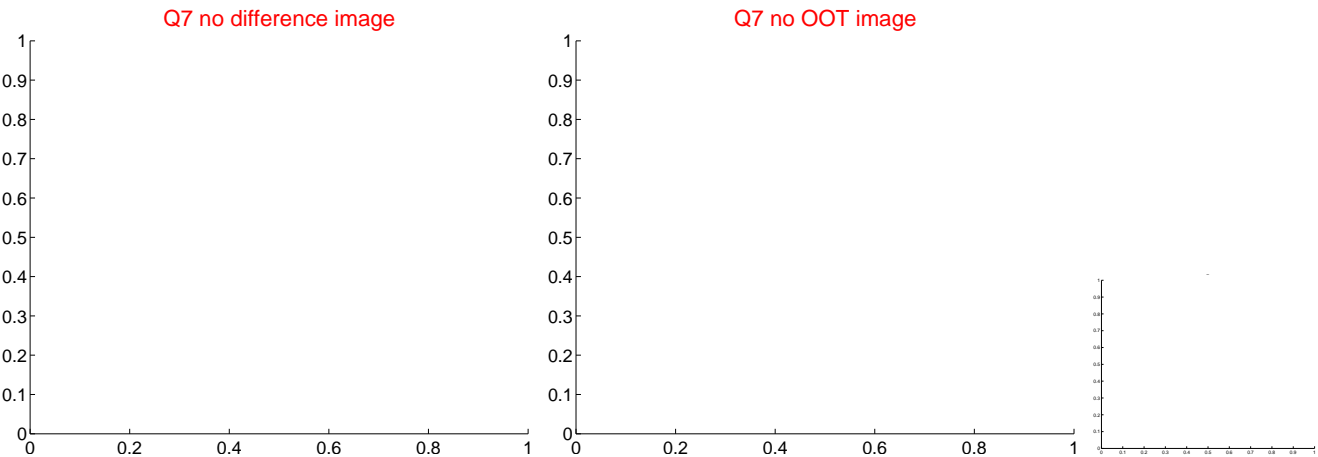
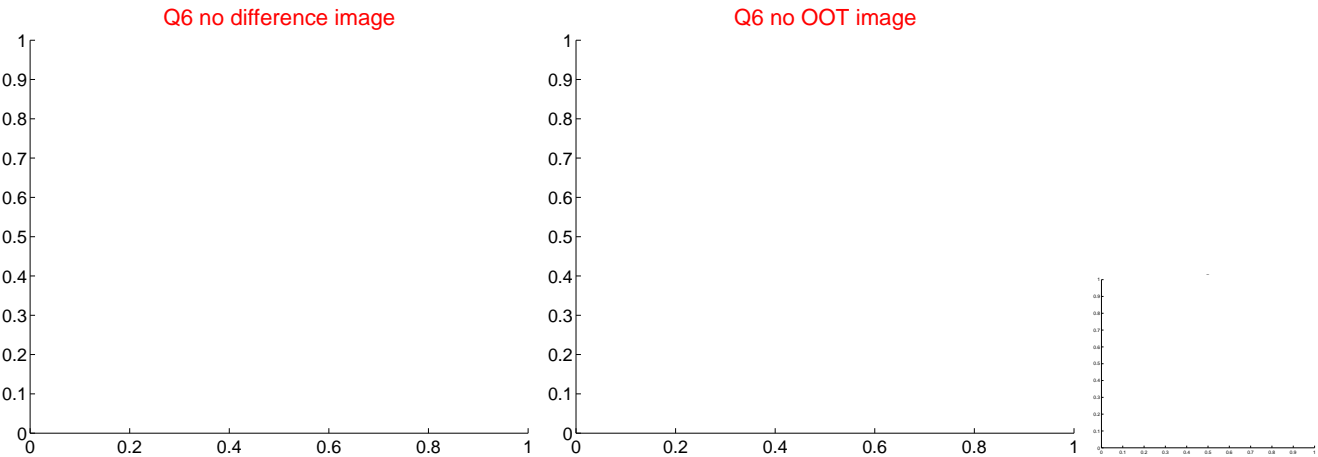
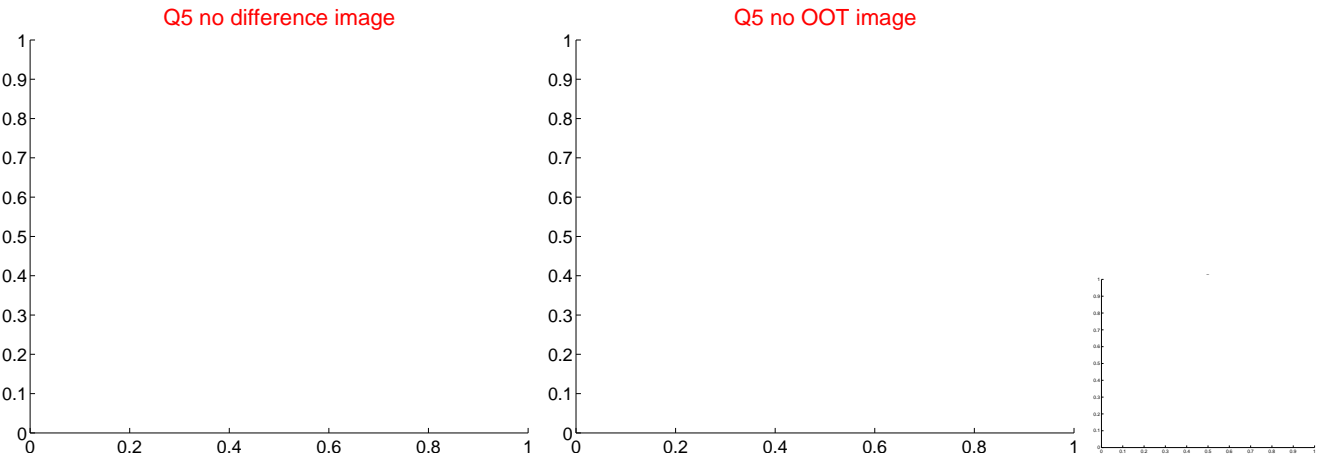


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

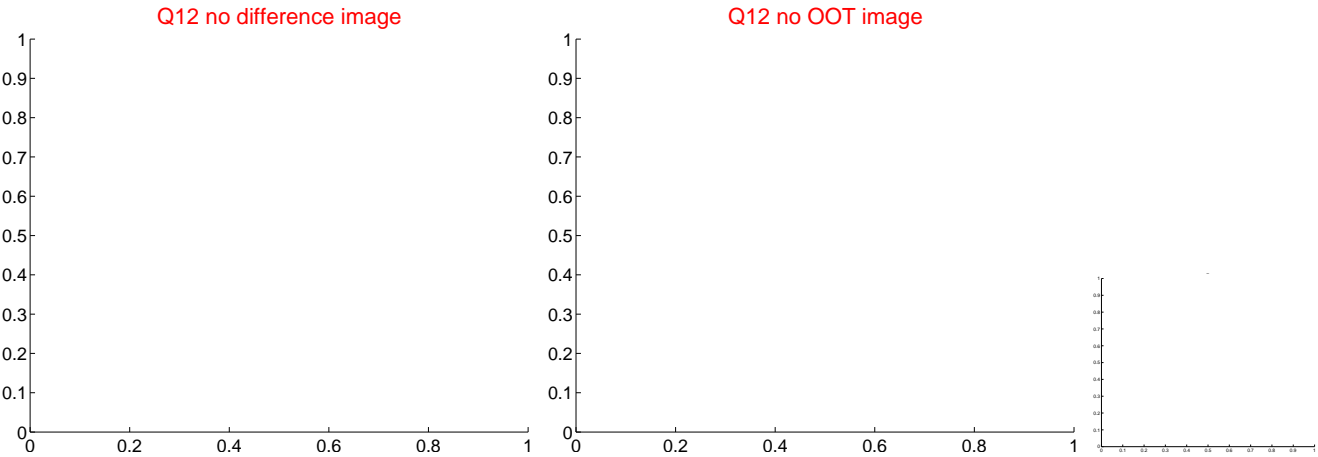
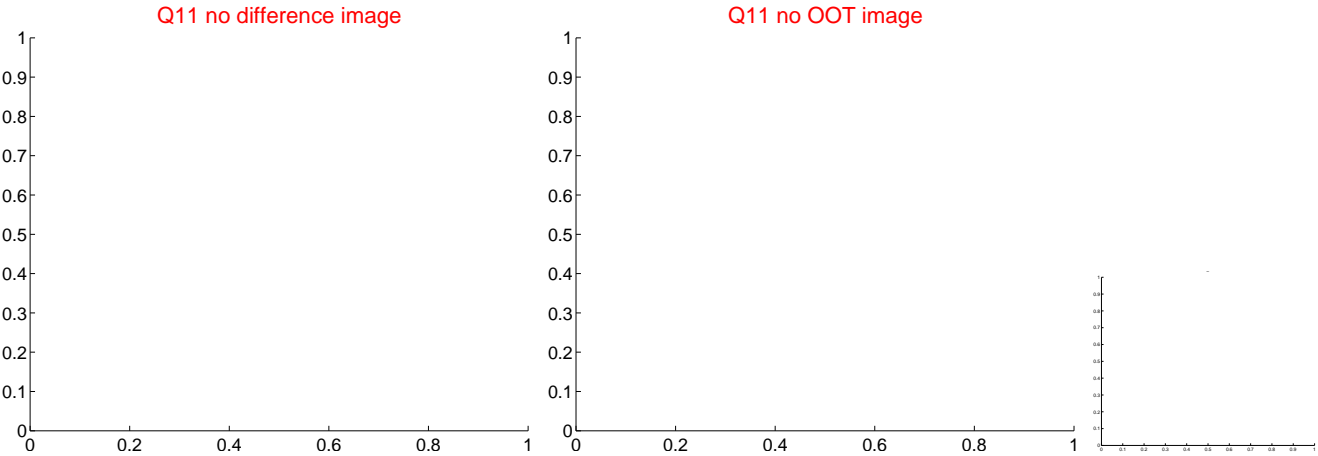
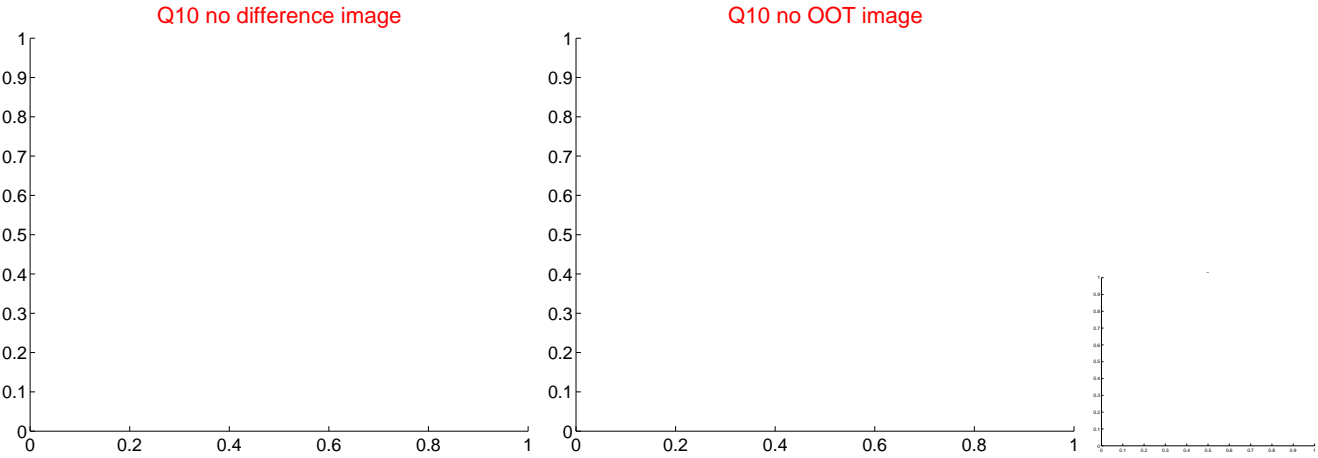
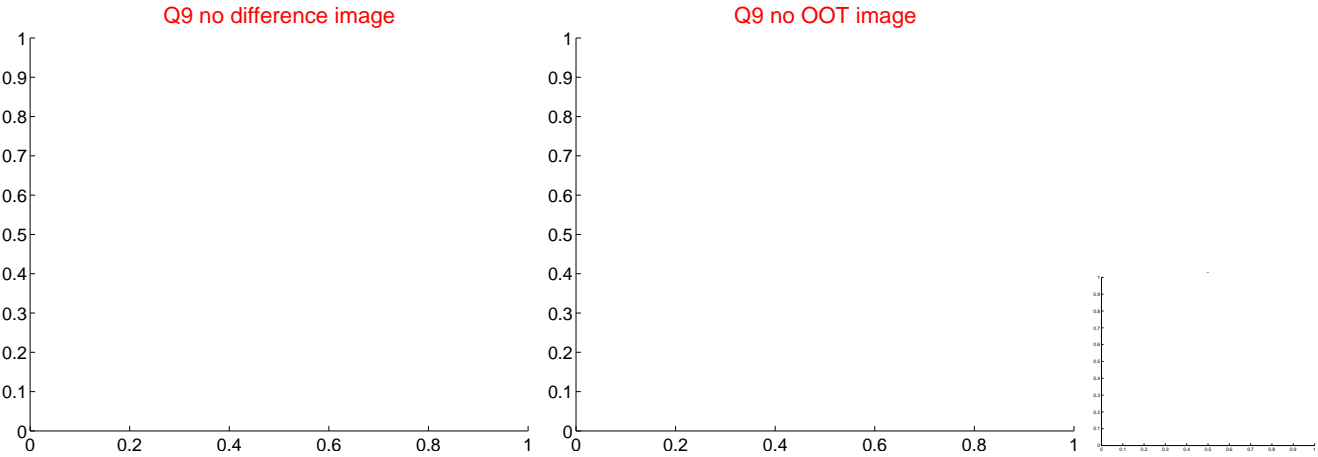
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

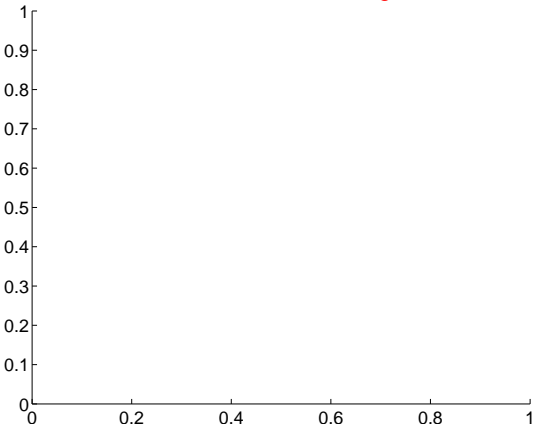


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

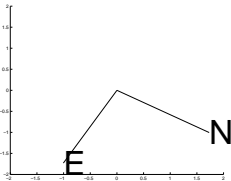
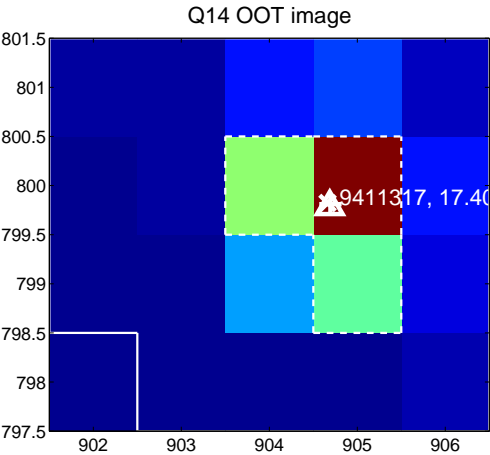
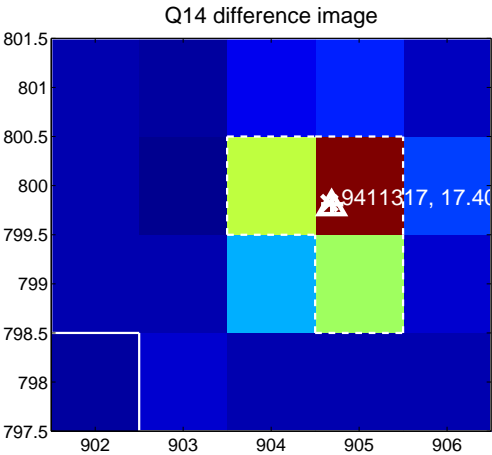
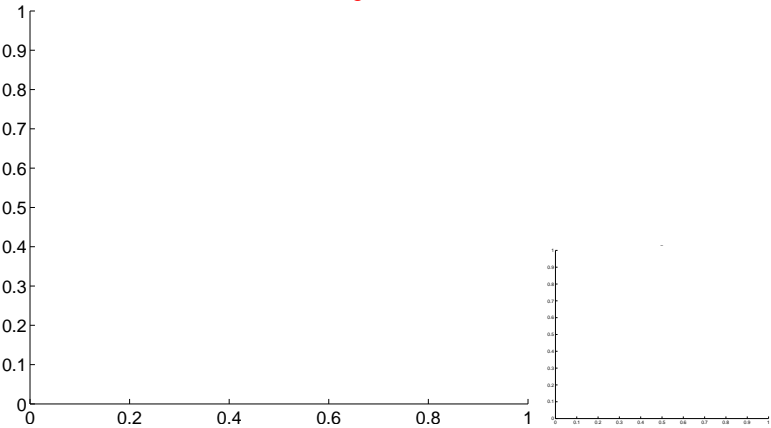


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

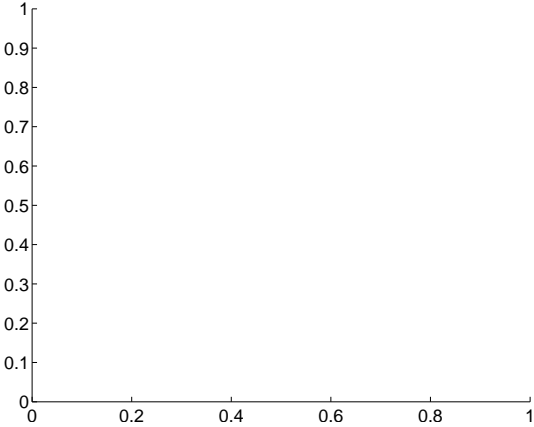
Q13 no difference image



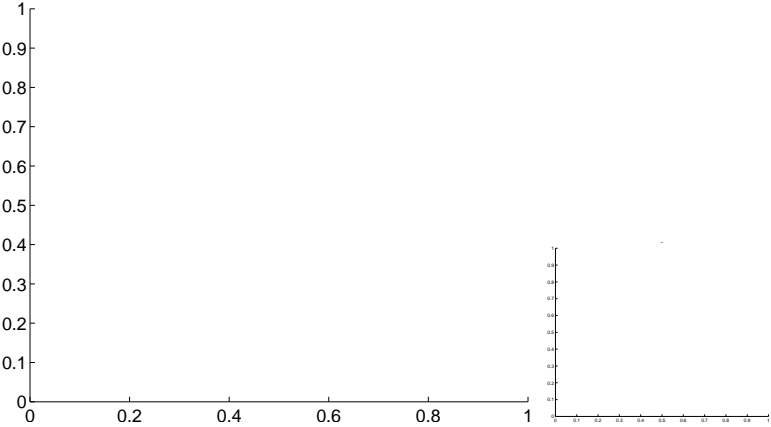
Q13 no OOT image



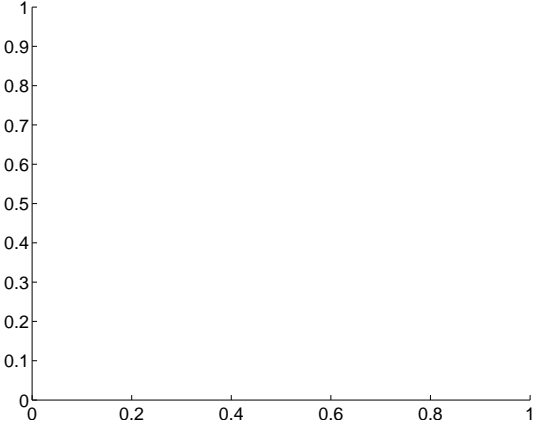
Q15 no difference image



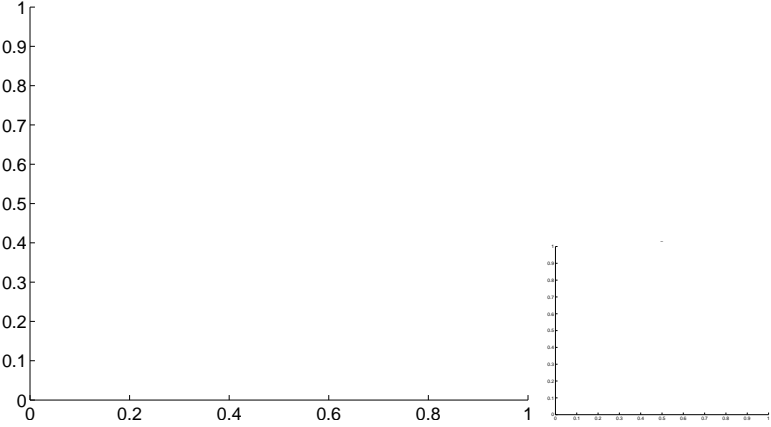
Q15 no OOT image



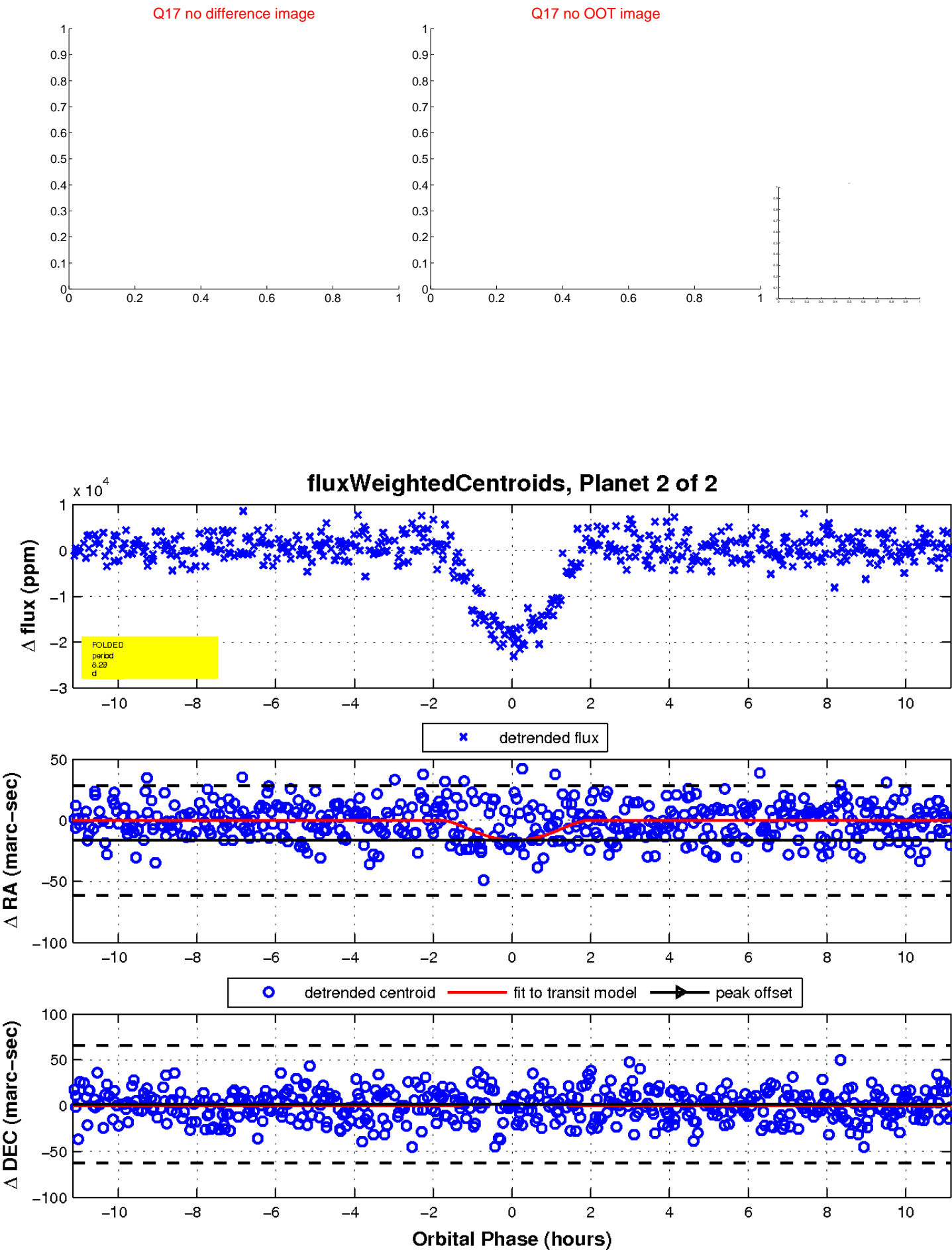
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

