

KIC 009341241

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})
009341241-01	OBS	No	39.585625	165.660399	13.2	7.175	8.5	1.1	155.72	3260	73.78	0.00
009341241-02	OBS	No	59.612594	172.129987	849.5	3.043	10.3	7.7	155.72	3260	854.30	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009341241-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_TER_DV—CENT_FEW_DIFFS
009341241-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—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.

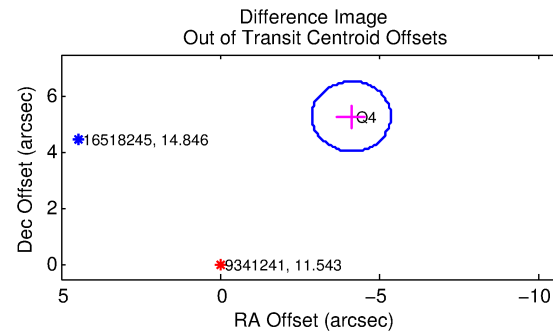
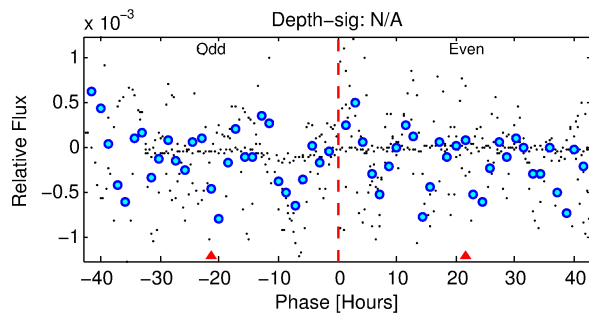
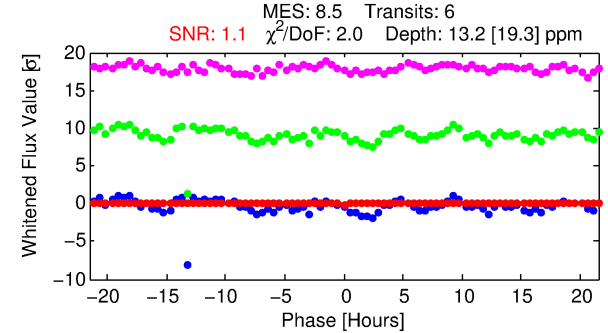
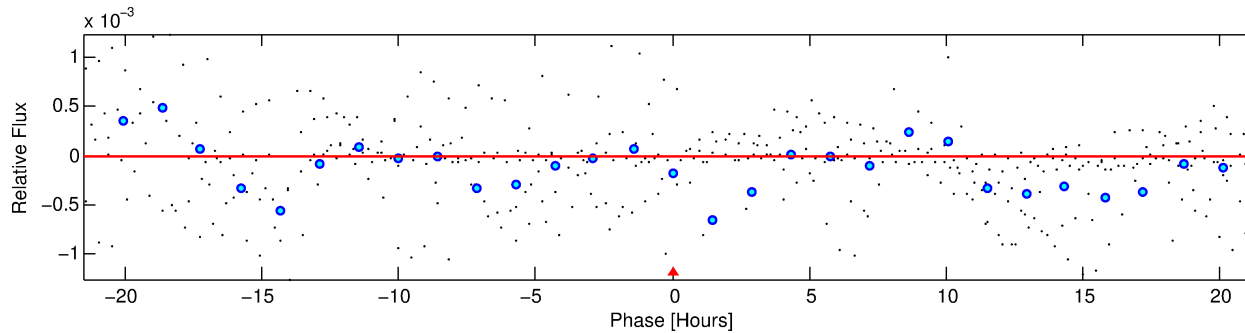
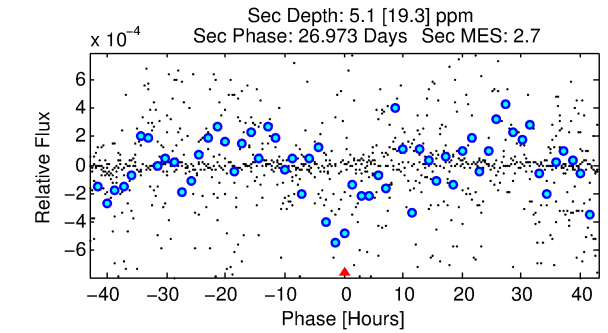
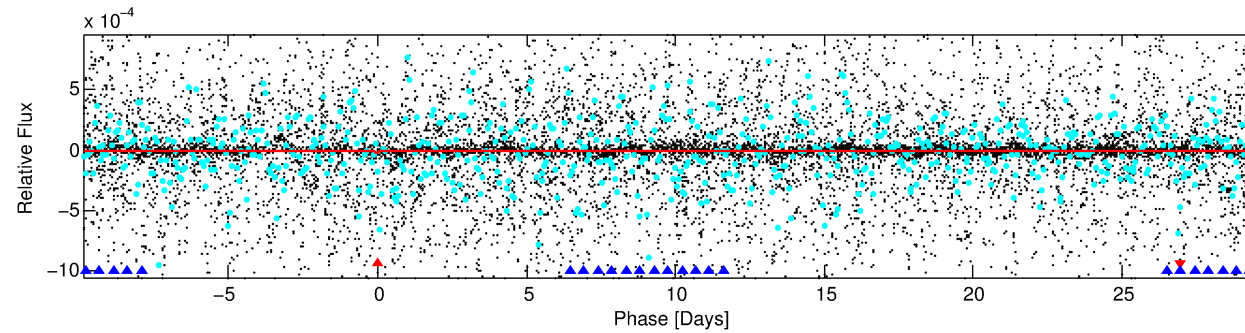
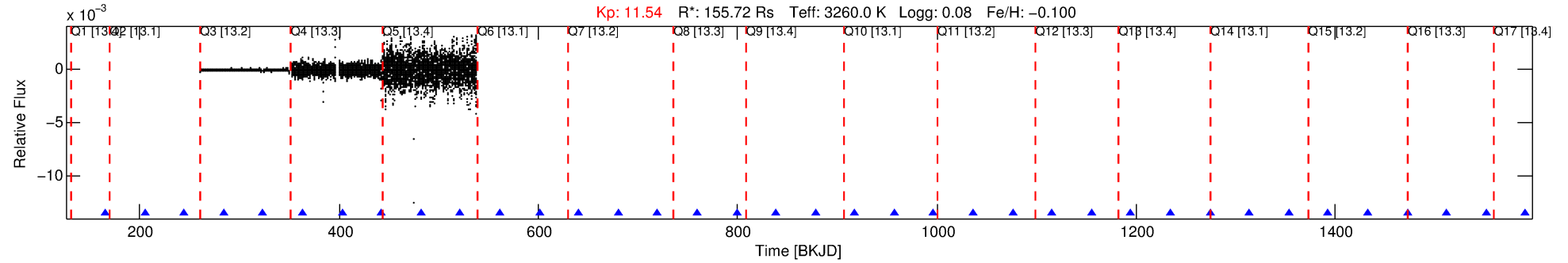
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009341241-01

No Significant Match Found

DV One-Page Summary

KIC: 9341241 Candidate: 1 of 2 Period: 39.586 d



DV Fit Results:

Period = 39.58562 [0.04394] d
Epoch = 165.6604 [0.1818] BKJD
Rp/R* = 0.0043 [0.0184]
a/R* = 17.89 [248.22]
b = 0.91 [2.66]
Seff = N/A
Teq = N/A
Rp = 73.78 [313.03] Re
a = N/A
Ag = N/A
Teffp = N/A

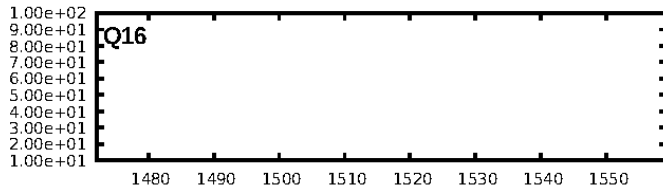
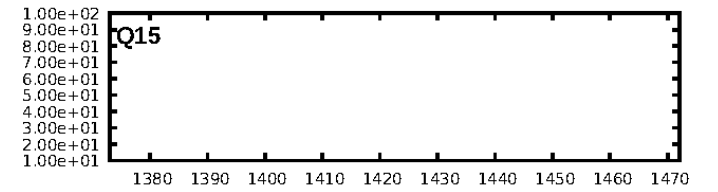
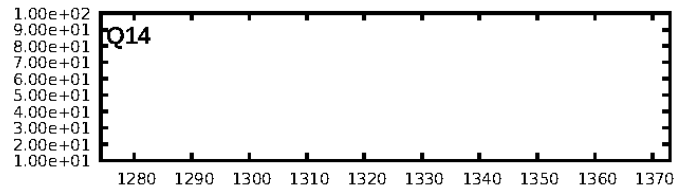
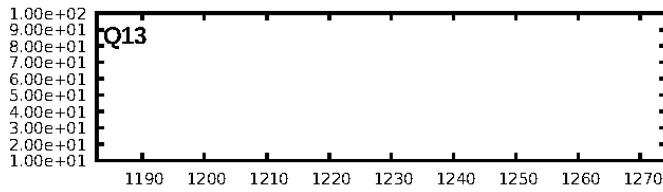
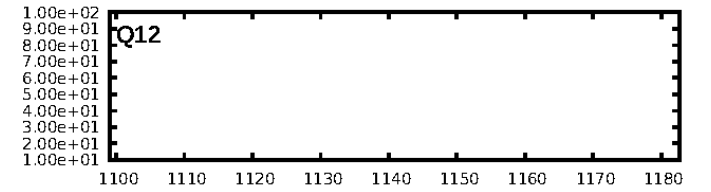
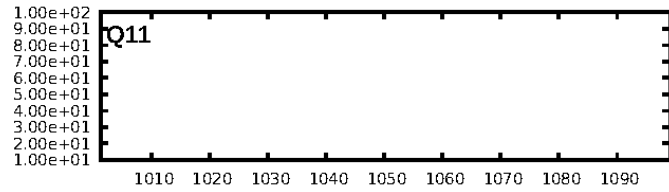
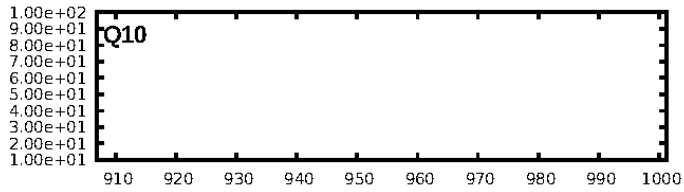
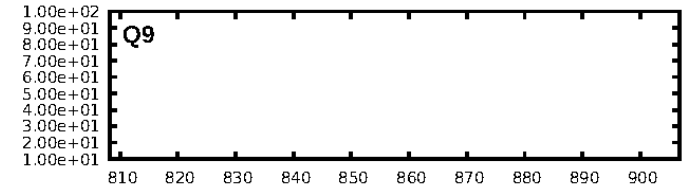
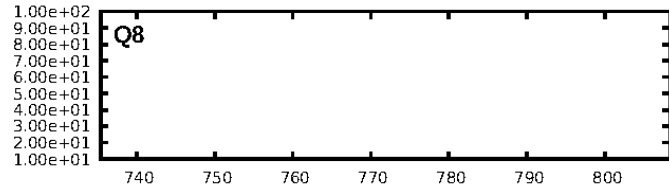
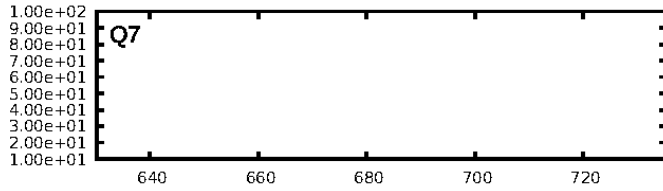
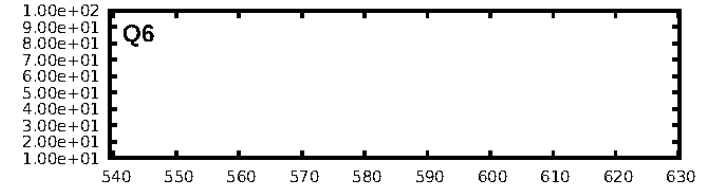
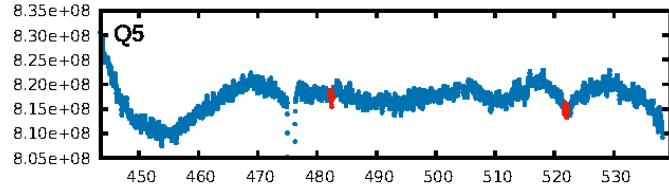
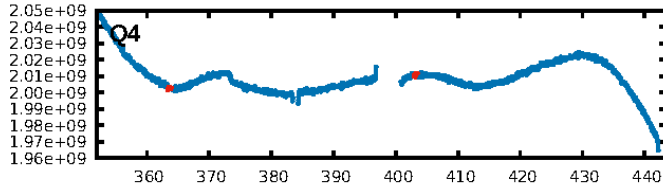
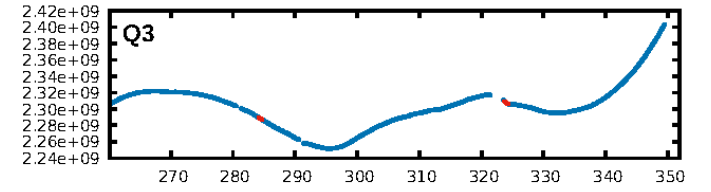
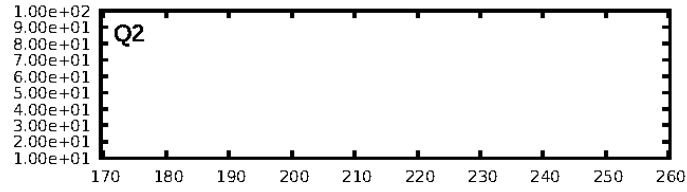
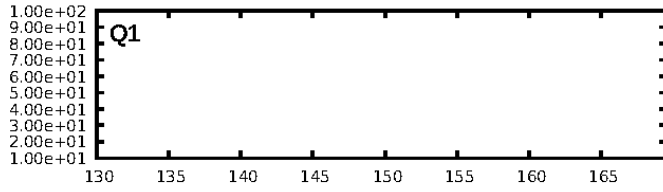
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [61.67σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 3.5%
Bootstrap-pfa: 1.90e-15
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.265
Centroid-sig: N/A
Centroid-so: 33.833 arcsec [0.92σ]
OotOffset-rm: 6.712 arcsec [16.17σ]
KicOffset-rm: 6.039 arcsec [14.40σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

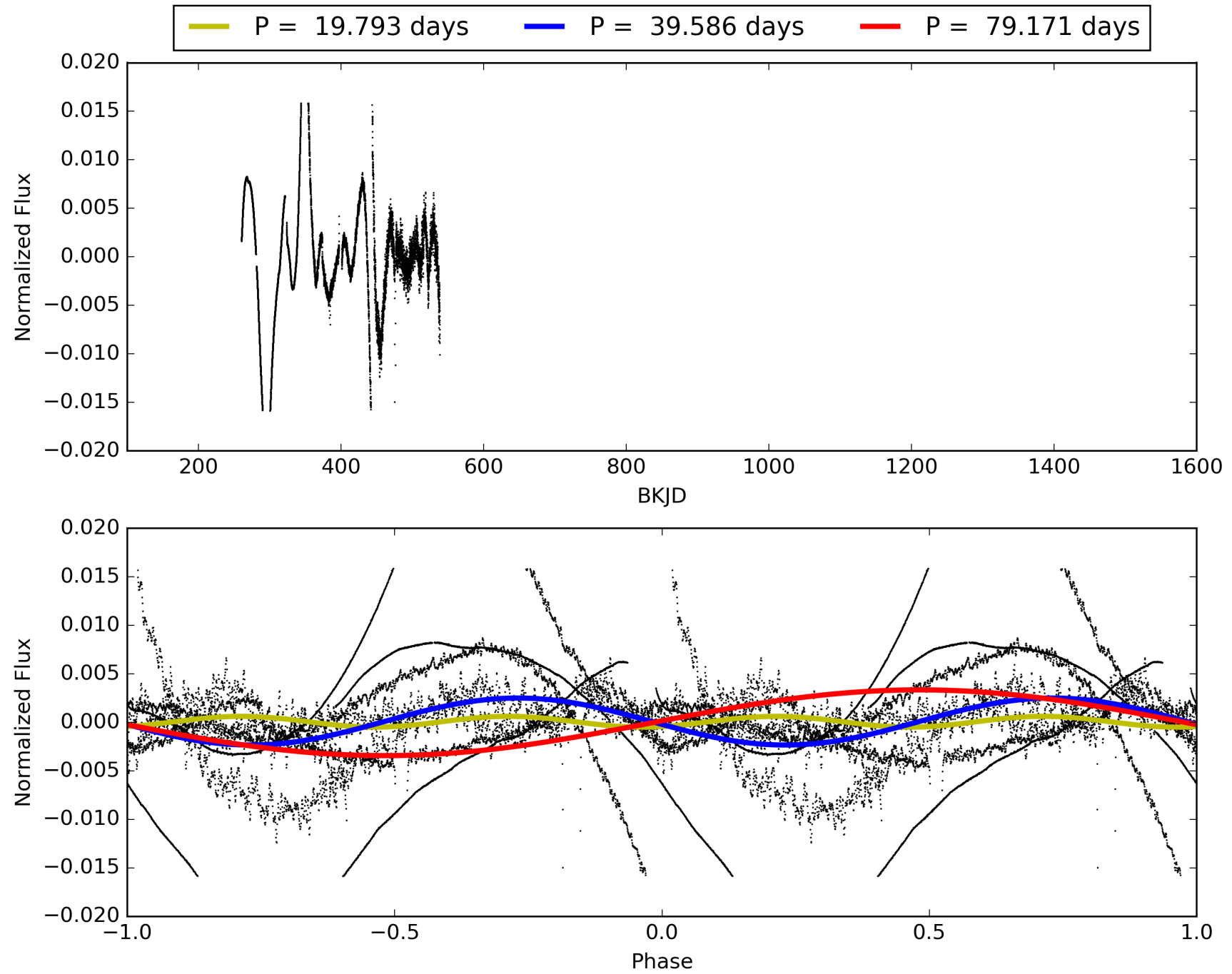
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:30:36 Z

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

TCE 009341241-01, PDC Light Curves

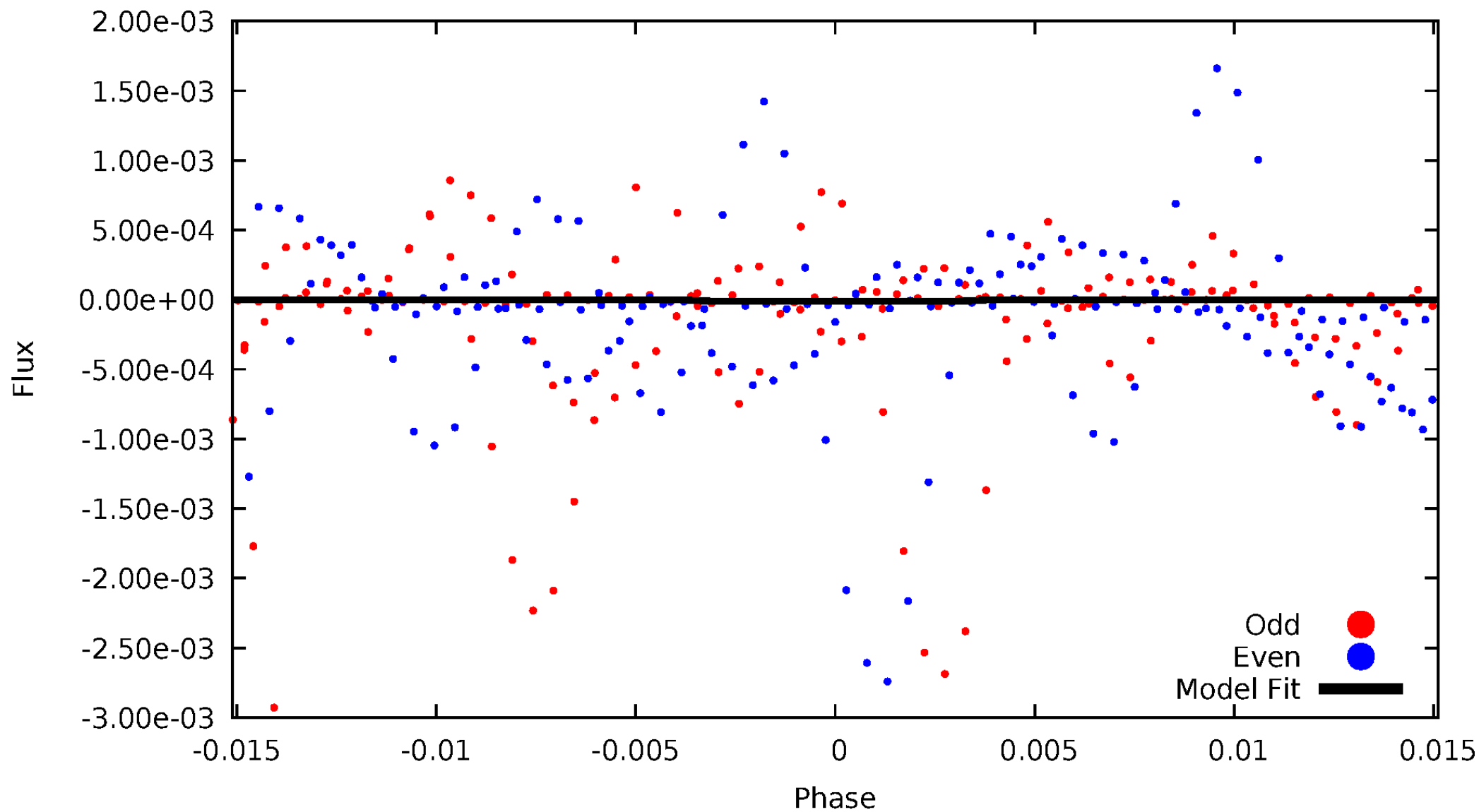


TCE 009341241-01



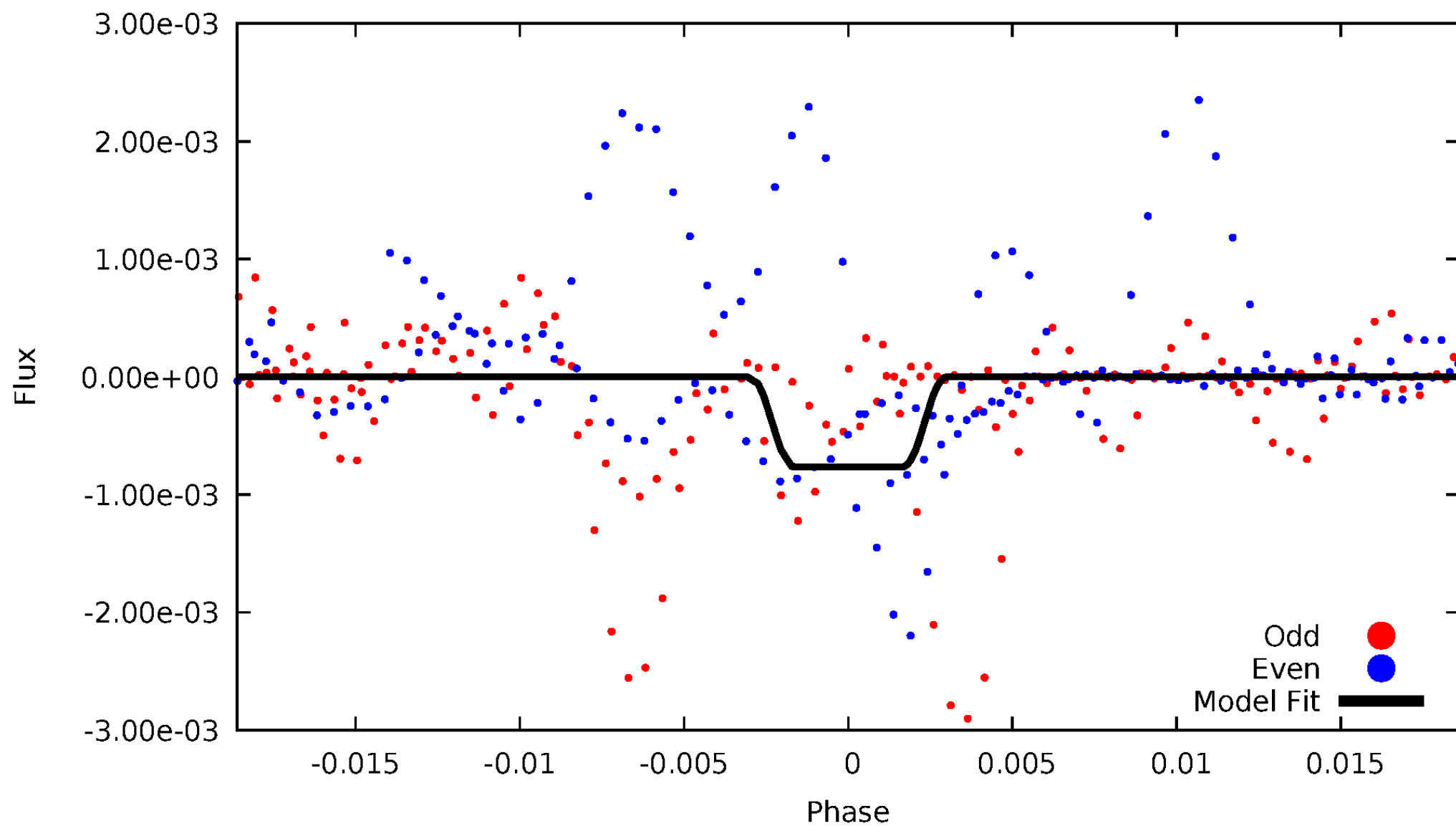
DV Odd/Even

TCE 009341241-01



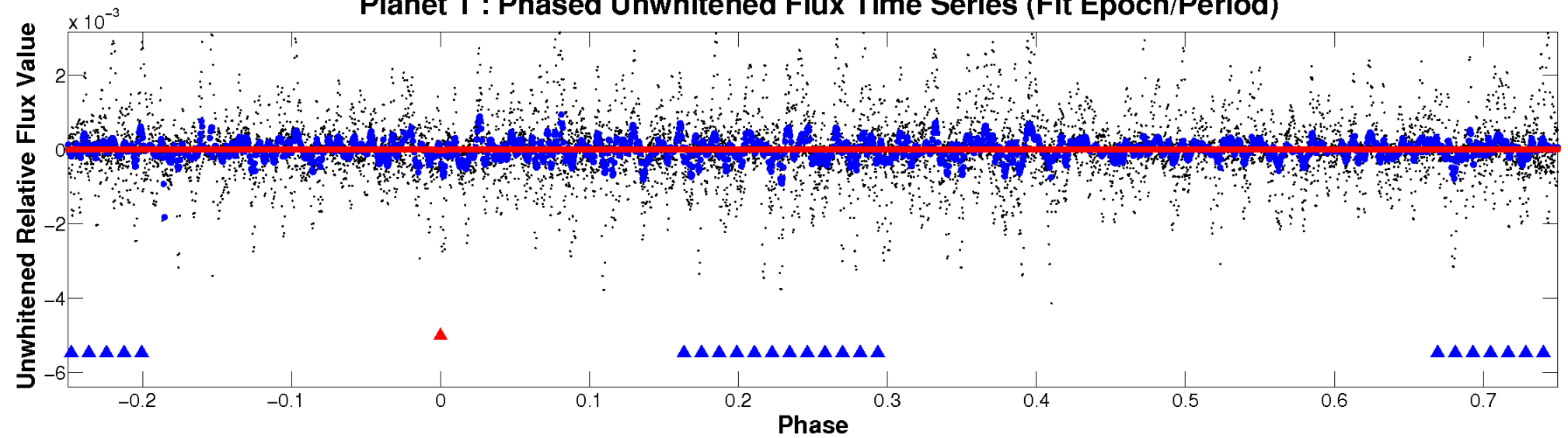
ALT Odd/Even

TCE 009341241-01

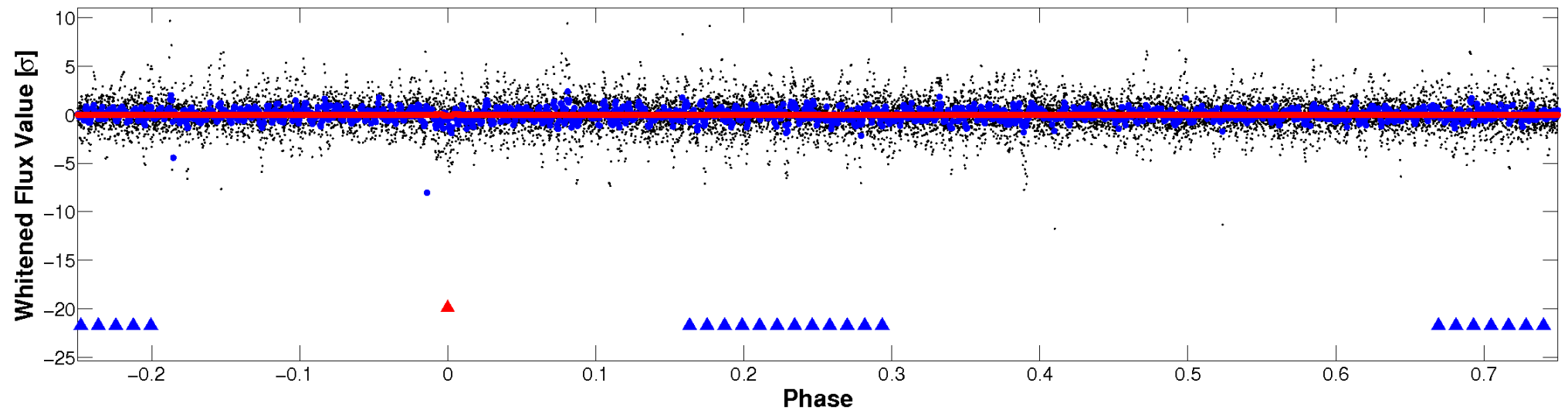


Non-Whitened Vs. Whitened Light Curve

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

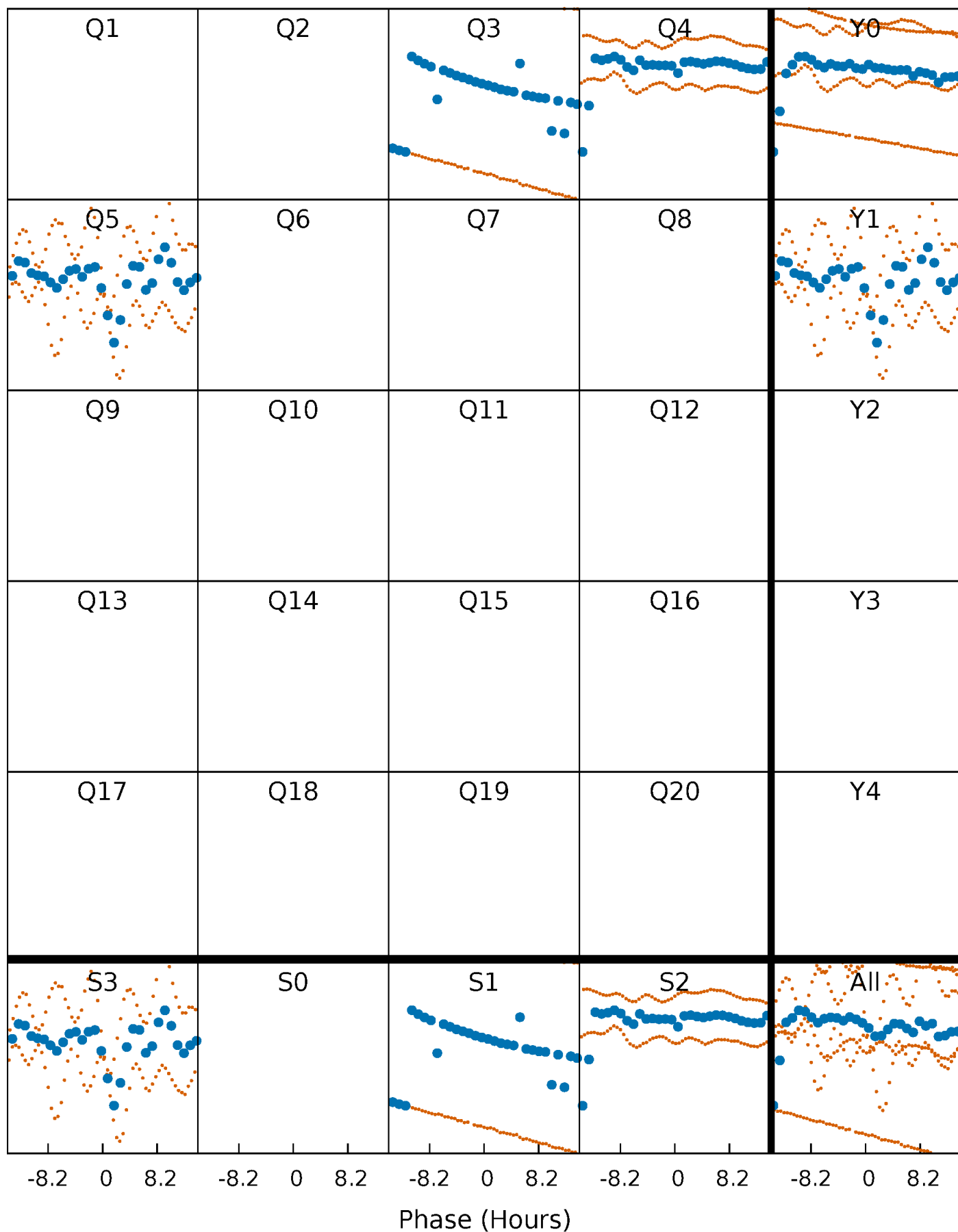


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



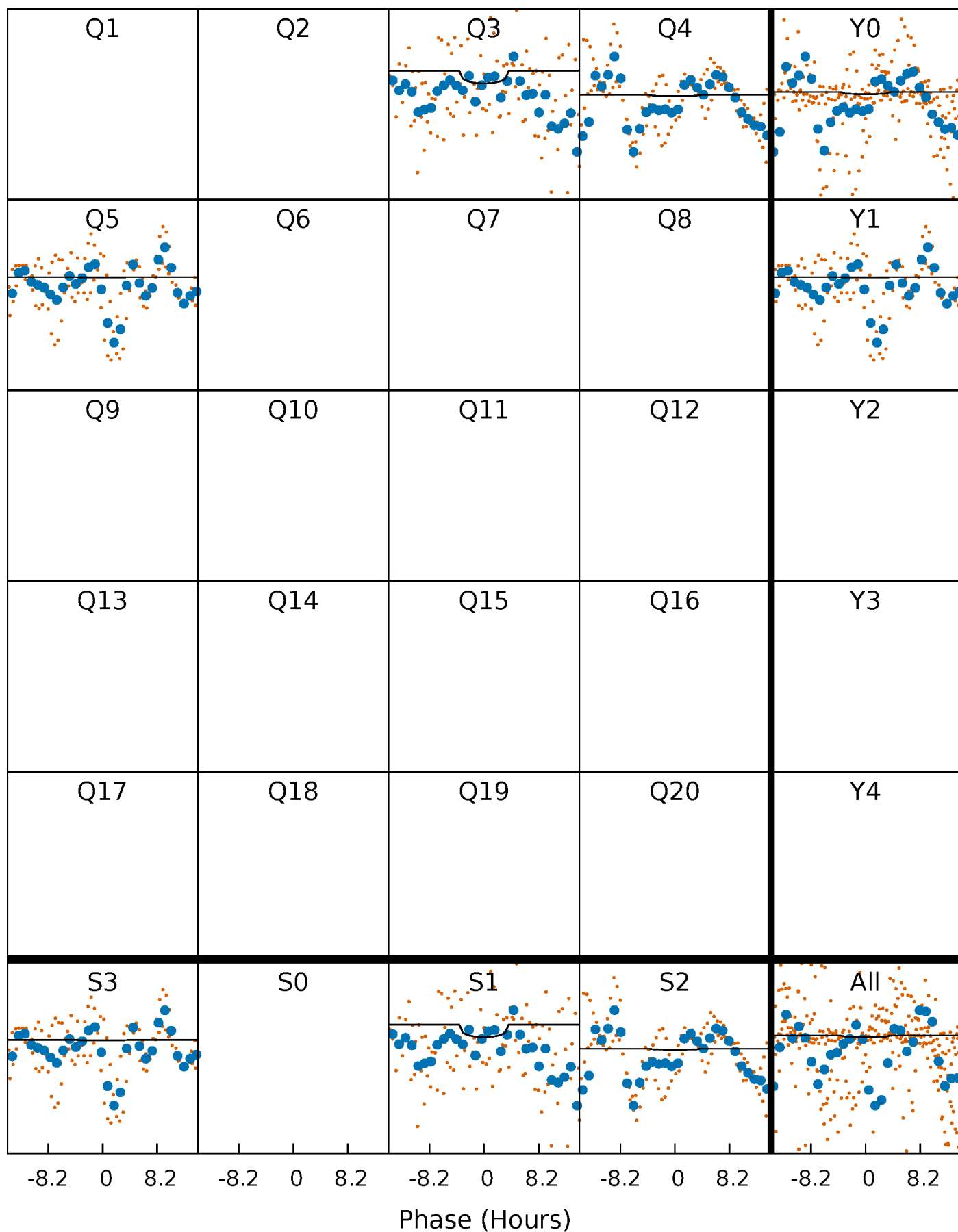
PDC Quarter-Phased Transit Curves

TCE 009341241-01 P= 39.585625 Days $T_0=165.660399$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009341241-01 P= 39.585625 Days $T_0=165.660399$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

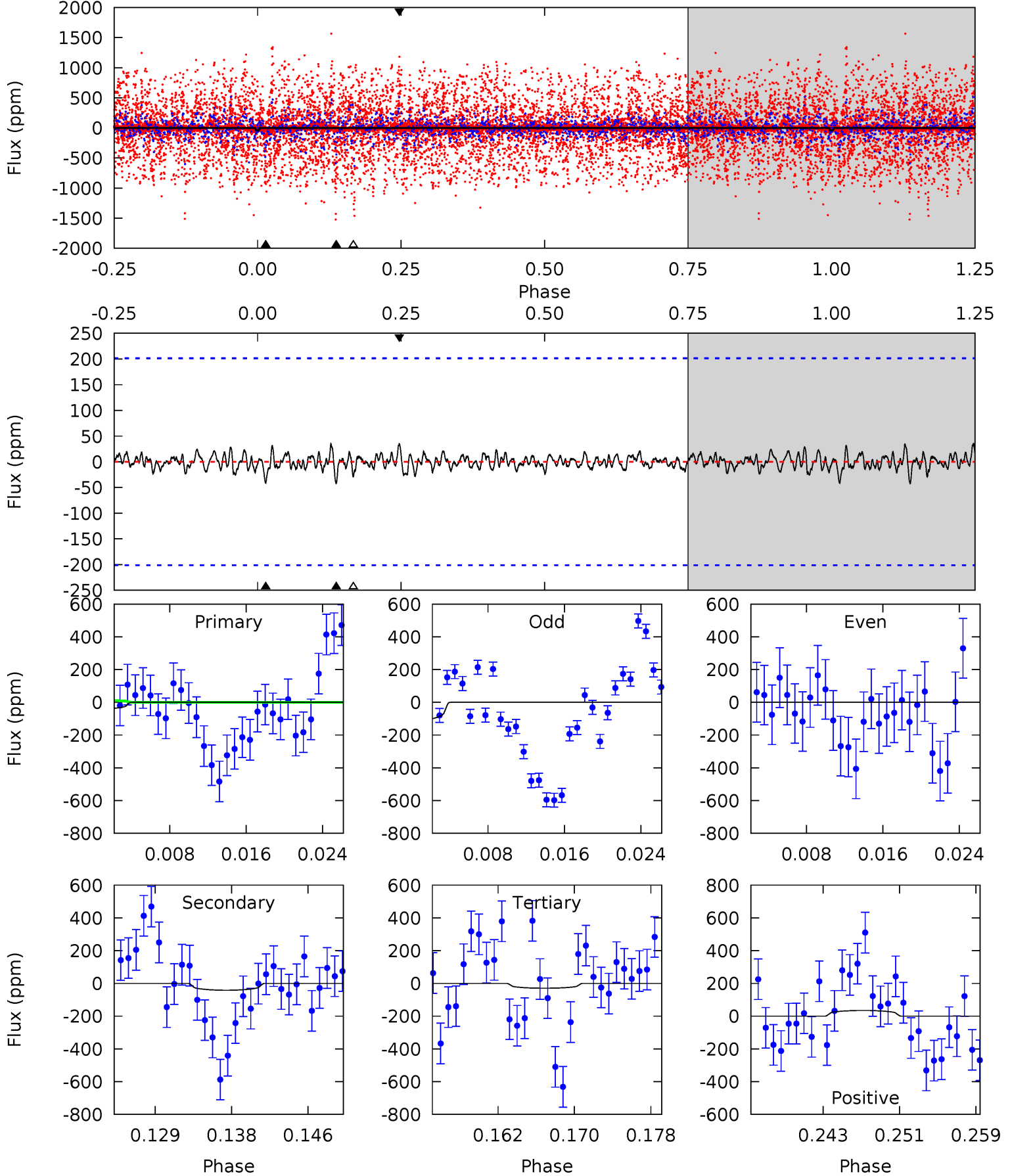
TCE 009341241-01 P= 39.573819 Days $T_0=165.731691$ (BKJD)



DV Model-Shift Uniqueness Test

009341241-01, P = 39.585625 Days, E = 165.660399 Days

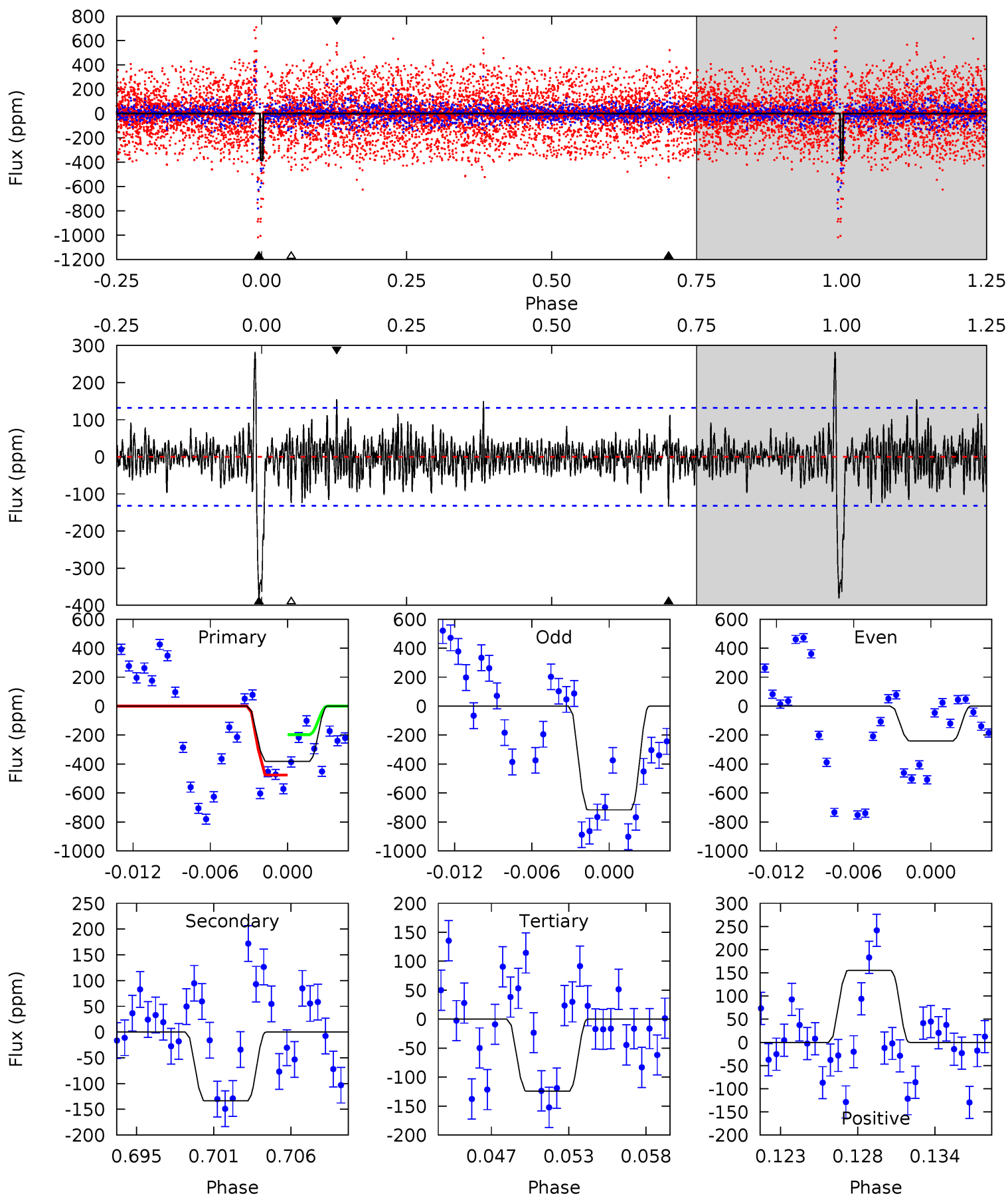
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.04	1.06	0.74	0.87	5.07	2.65	0.27	0.30	0.17	0.31	0.18	1.23	2.39	0.45	1.01



Alt Model-Shift Uniqueness Test

009341241-01, $P = 39.573819$ Days, $E = 165.731691$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	5.19	4.83	6.03	5.13	2.76	1.50	10.0	8.82	0.36	-0.84	8.80	0.94	0.43	5.43



Stellar Parameters For KIC 009341241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3260^{+117}_{-78}	$0.077^{+0.208}_{-0.065}$	$-0.100^{+0.300}_{-0.100}$	$155.724^{+8.426}_{-26.963}$	$1.056^{+0.223}_{-0.096}$	$0.000^{+0.000}_{-0.000}$
	+4%/-2%	+270%/-84%	+300%/-100%	+5%/-17%	+21%/-9%	+89%/-15%
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 009341241-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-42 ± 40	$238.24^{+240.72}_{-170.90}$	5131^{+229}_{-262}	-3742^{+752}_{-213}	$0.017^{+0.223}_{-0.016}$
Alt.	-134 ± 26	$463.12^{+304.74}_{-255.18}$	5136^{+248}_{-269}	-3752^{+309}_{-195}	$0.019^{+0.079}_{-0.012}$

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 $A_{obs} \gg 1.0$

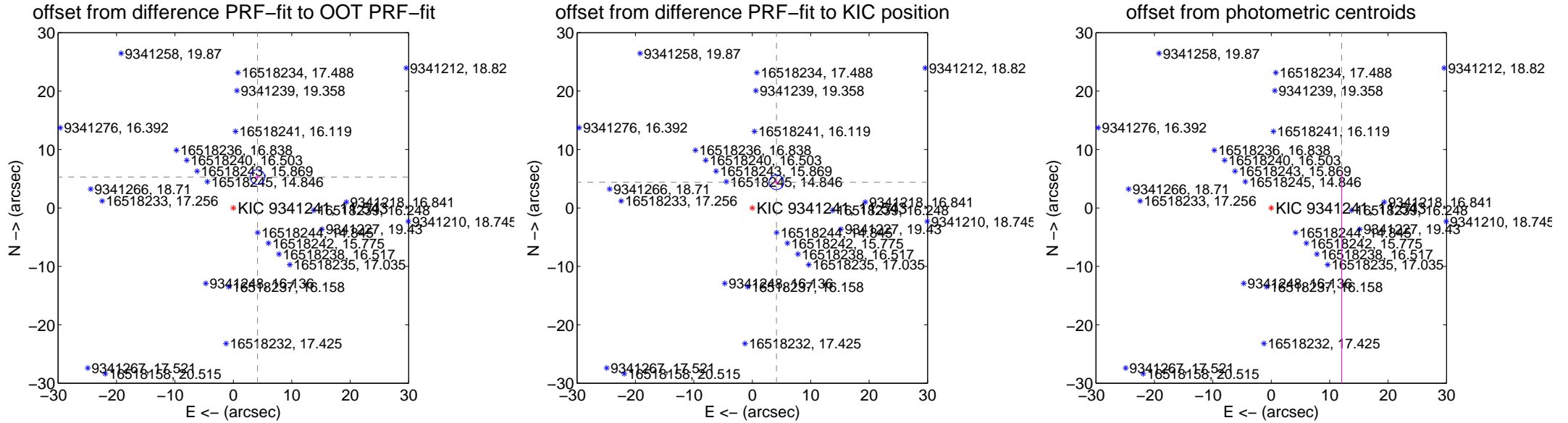
DV Centroid Data

Supplemental centroid analysis for 009341241-01. **Kepler magnitude: 11.54.** Transit SNR 1.07

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.89 arcsec

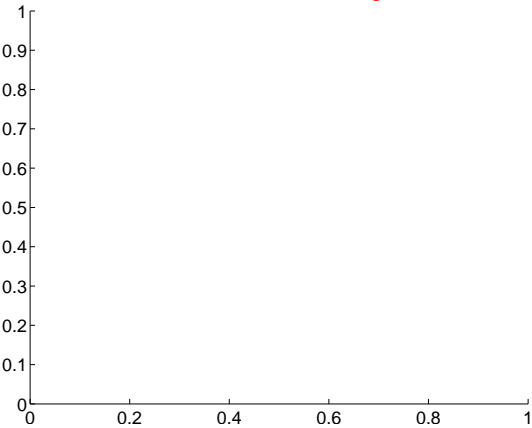
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.712 \pm 0.415	16.17	-4.135 \pm 0.445	5.287 \pm 0.396
PRF-fit source offset from KIC position	6.039 \pm 0.419	14.40	-4.135 \pm 0.445	4.401 \pm 0.396
photometric centroid source offset	33.83 \pm 36.92	0.92	-12.04 \pm 30.65	-31.62 \pm 37.75



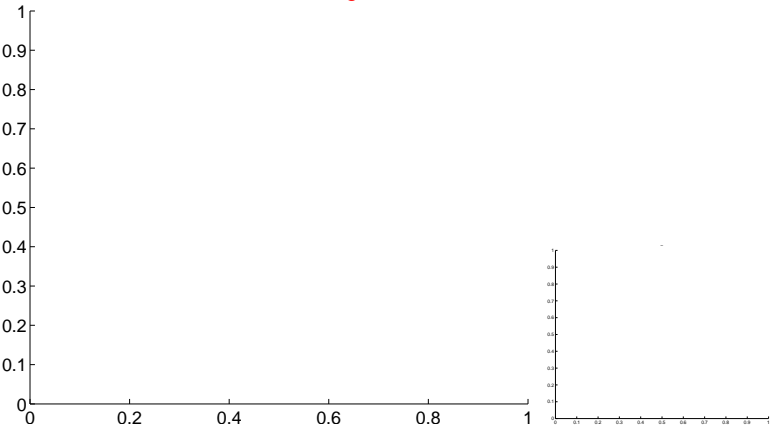
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

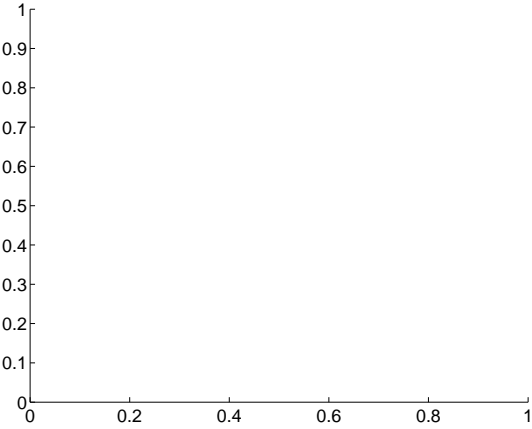
Q1 no difference image



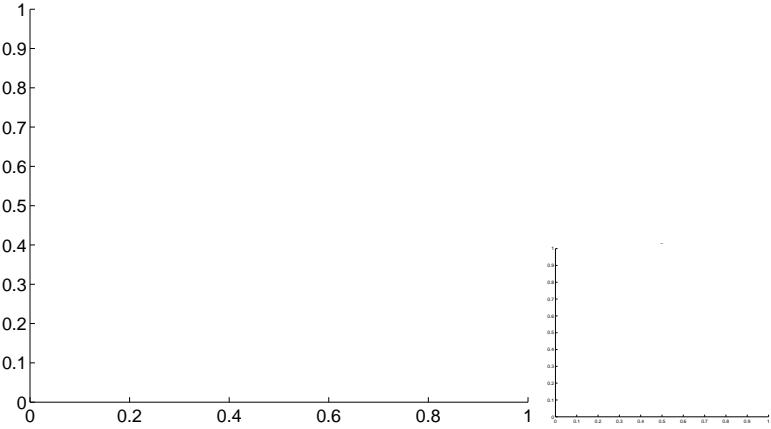
Q1 no OOT image



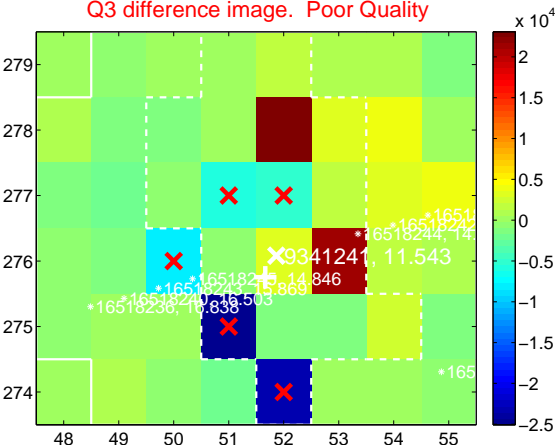
Q2 no difference image



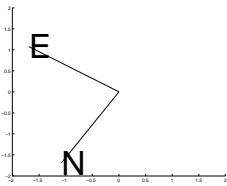
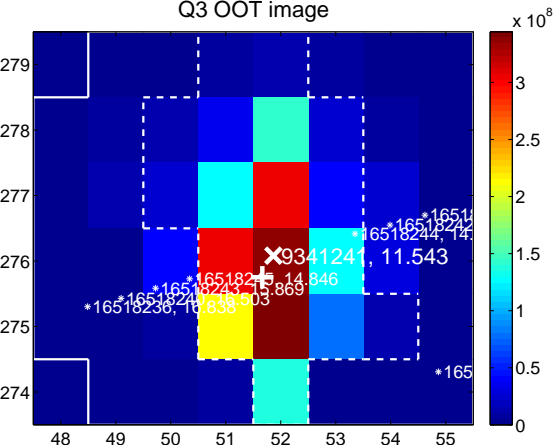
Q2 no OOT image



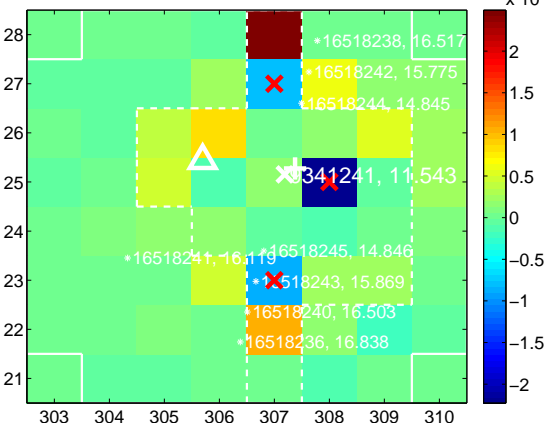
Q3 difference image. Poor Quality



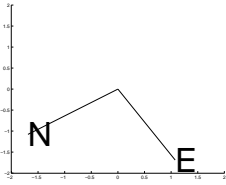
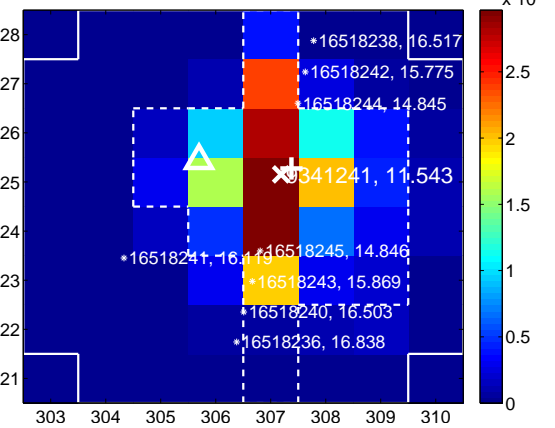
Q3 OOT image



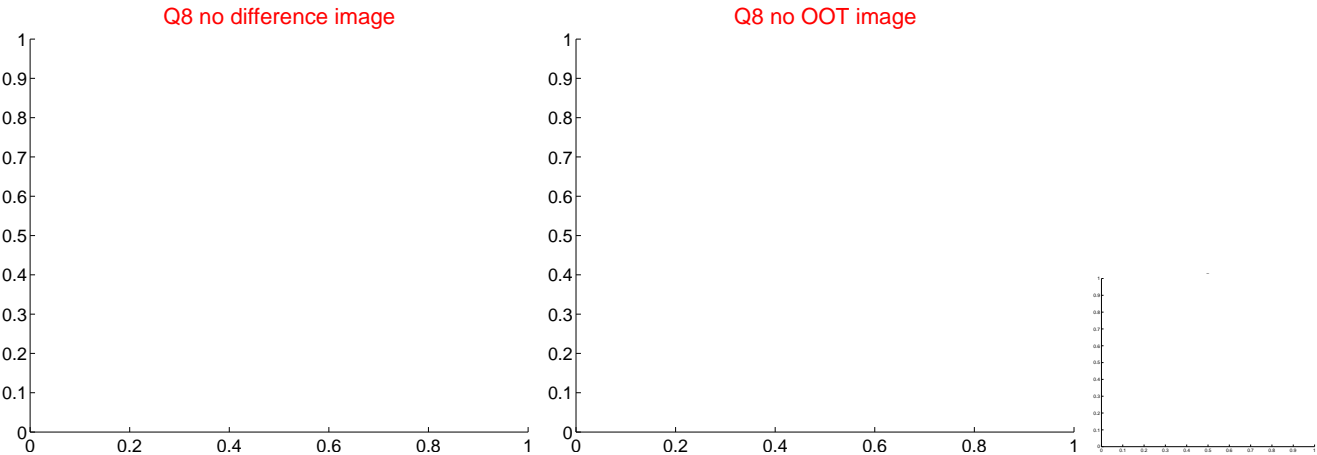
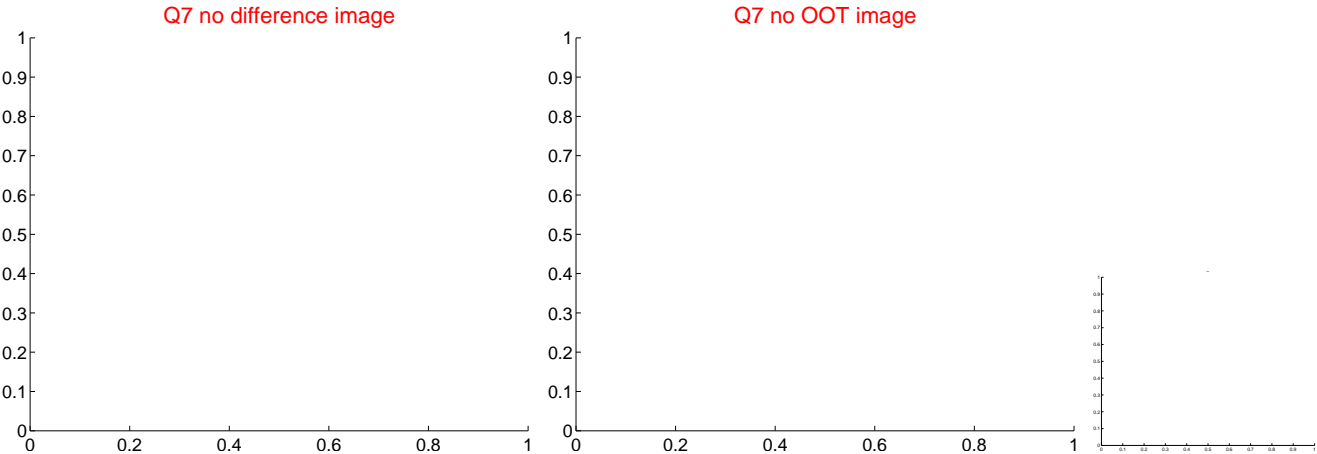
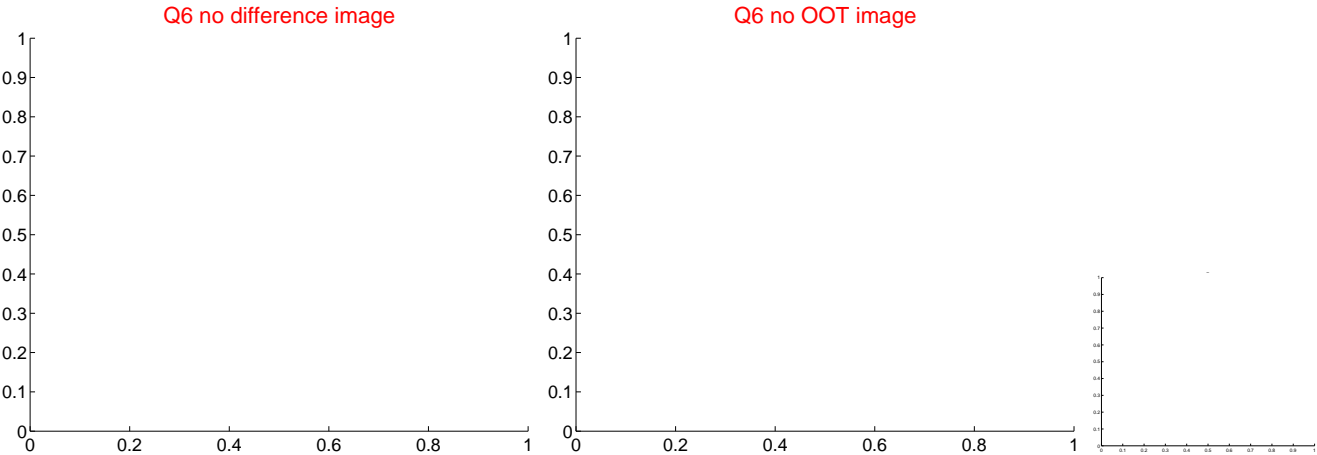
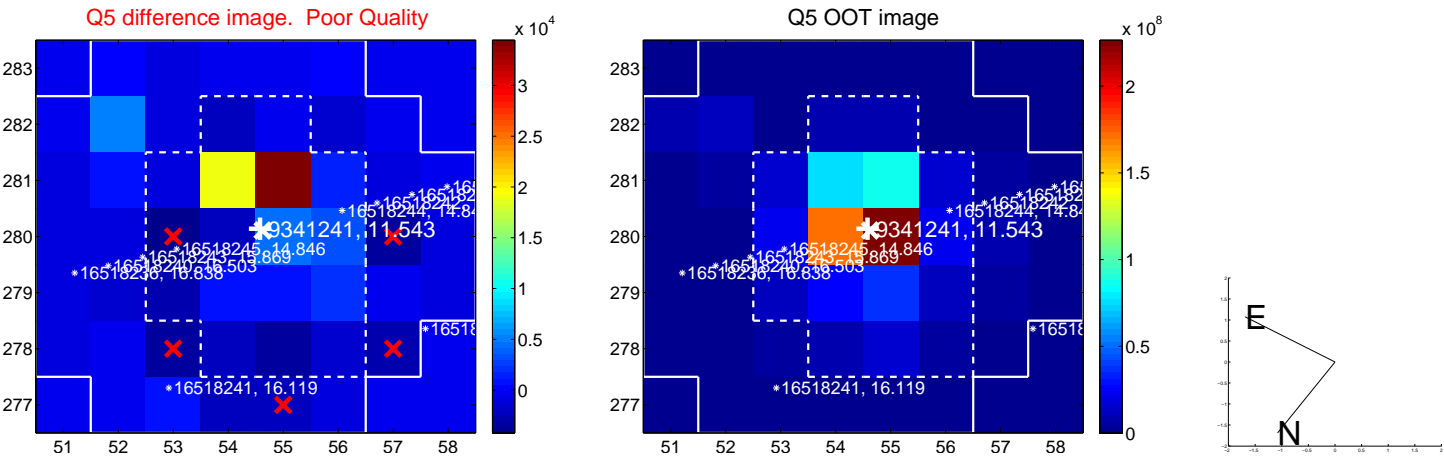
Q4 difference image. Poor Quality



Q4 OOT image



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



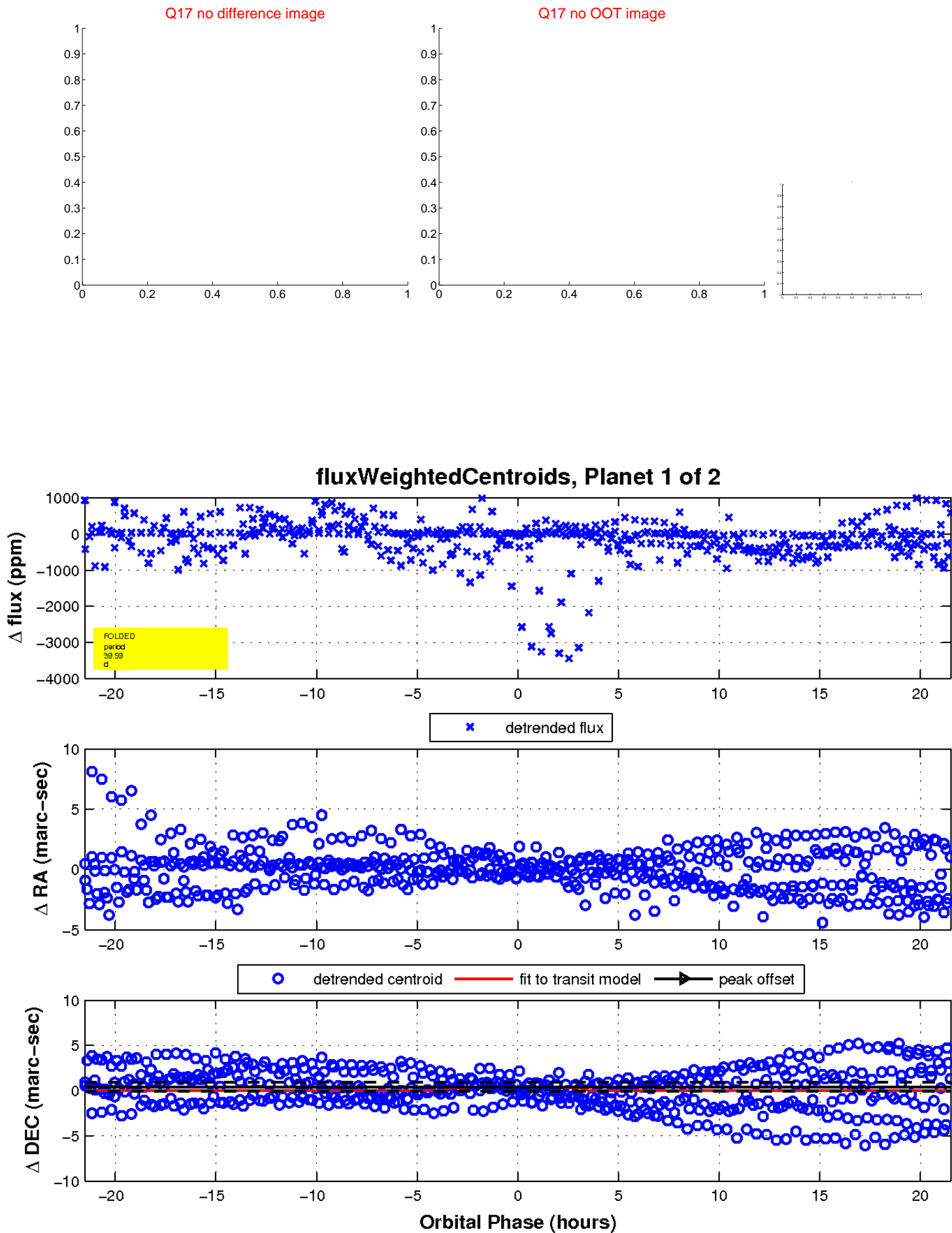
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



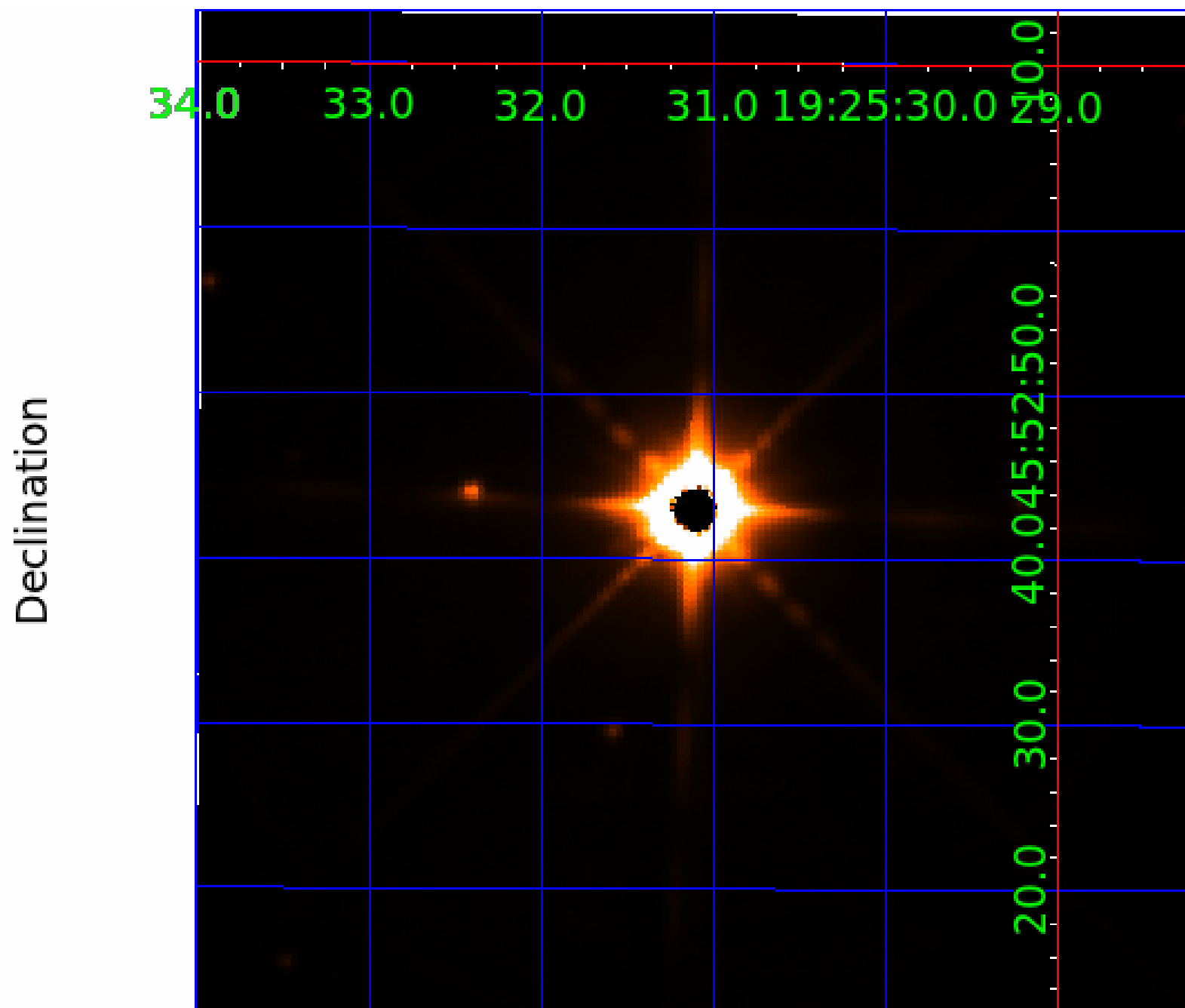
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009341241

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})
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009341241-02	OBS	No	59.612594	172.129987	849.5	3.043	10.3	7.7	155.72	3260	854.30	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009341241-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_TER_DV—CENT_FEW_DIFFS
009341241-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—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.

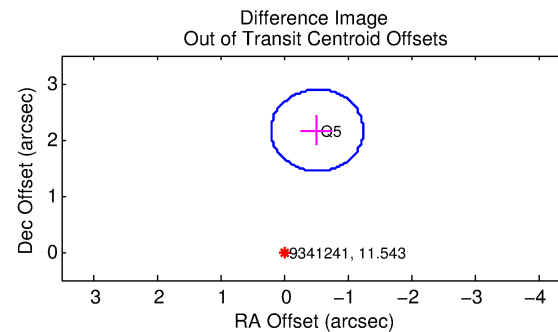
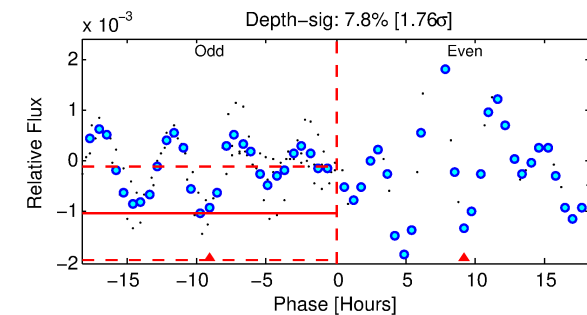
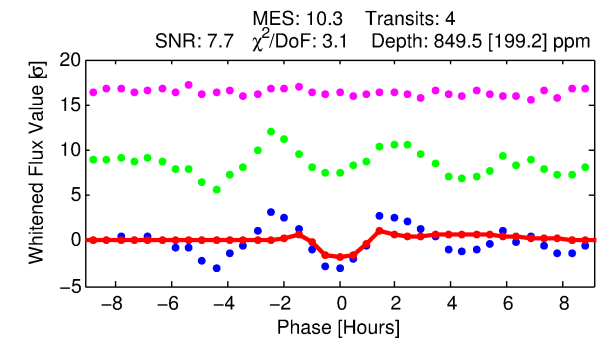
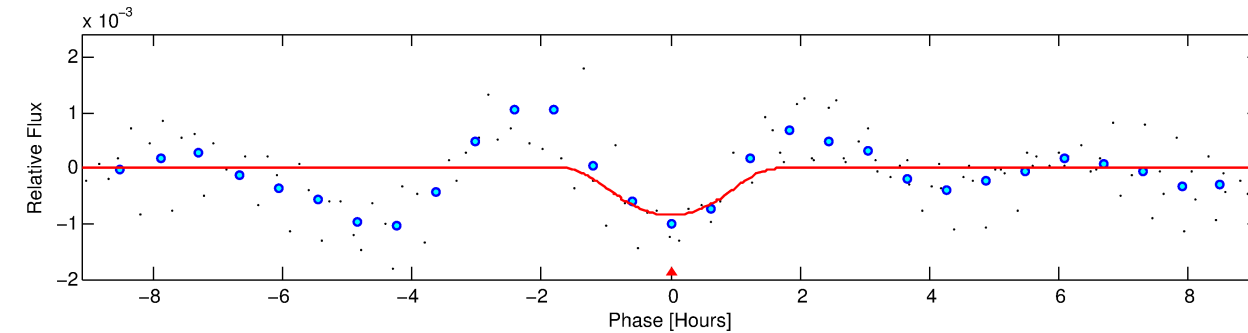
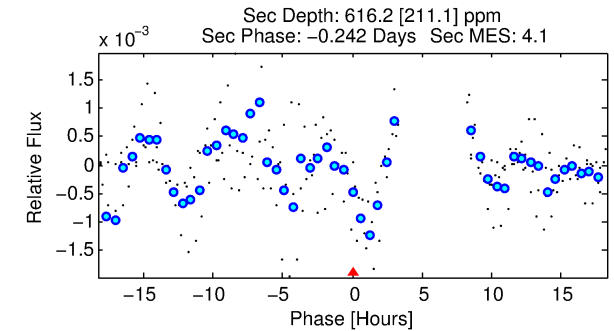
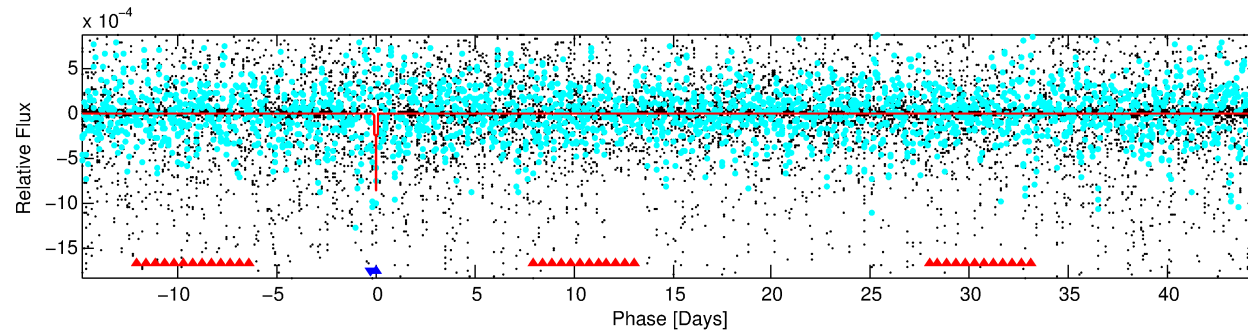
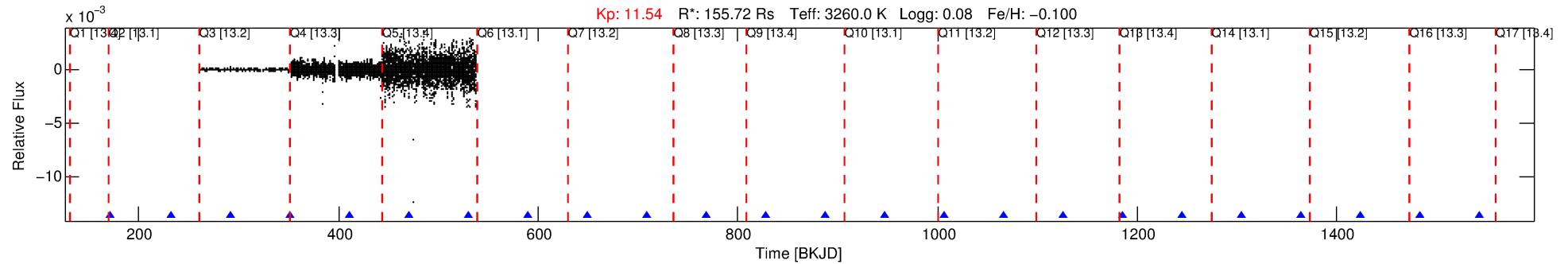
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009341241-02

No Significant Match Found

DV One-Page Summary

KIC: 9341241 Candidate: 2 of 2 Period: 59.613 d



DV Fit Results:

Period = 59.61259 [0.00809] d
Epoch = 172.1300 [0.0399] BKJD
Rp/R* = 0.0503 [0.1178]
a/R* = 54.57 [38.55]
b = 0.98 [0.20]
Seff = N/A
Teq = N/A
Rp = 854.30 [2007.89] Re
a = N/A
Ag = N/A
Teffp = N/A

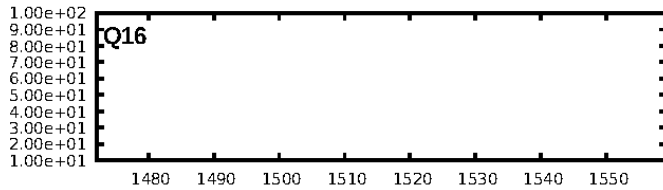
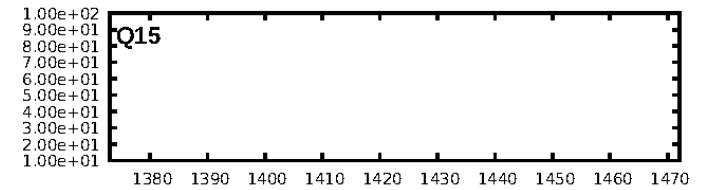
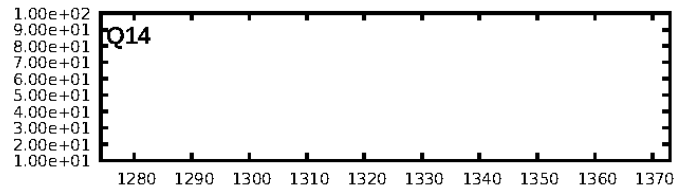
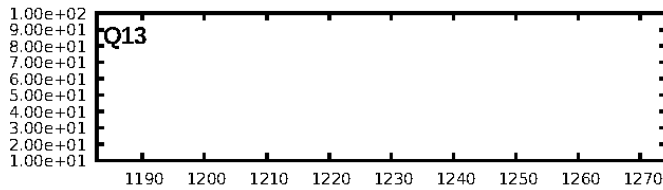
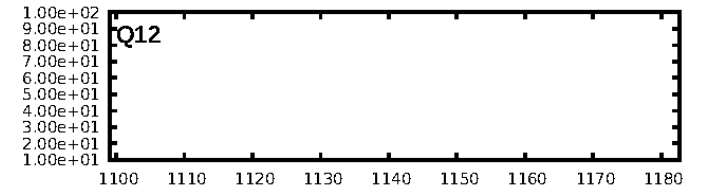
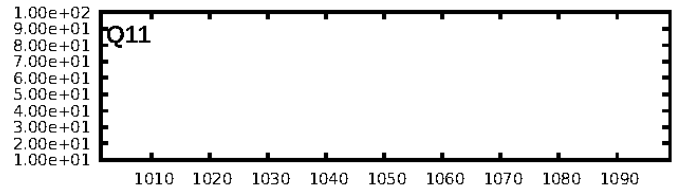
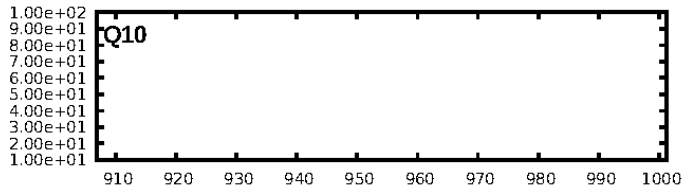
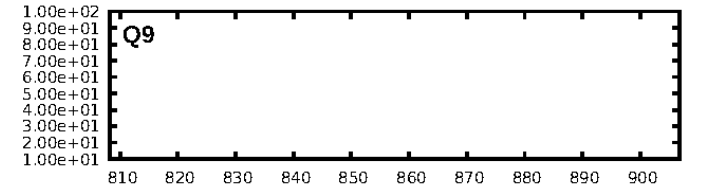
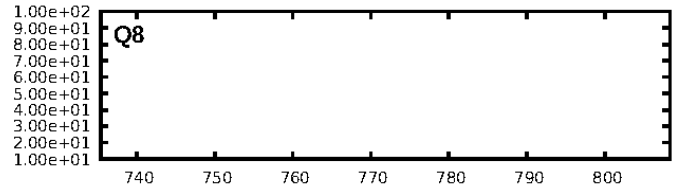
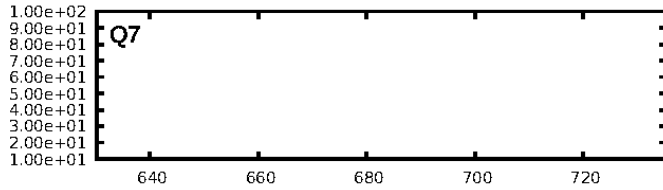
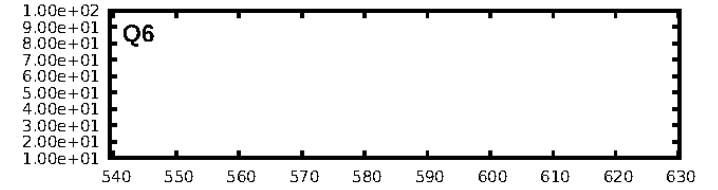
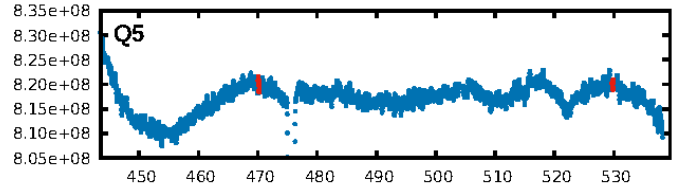
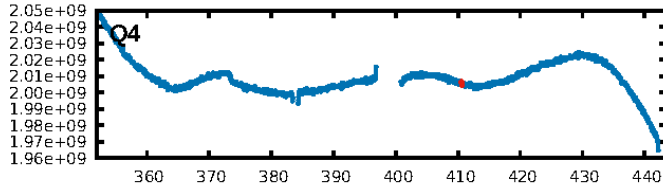
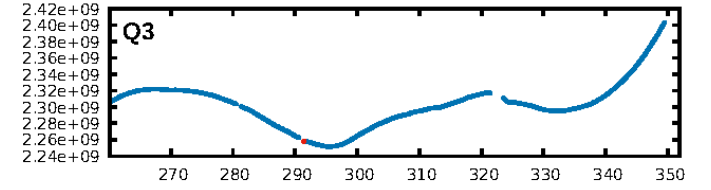
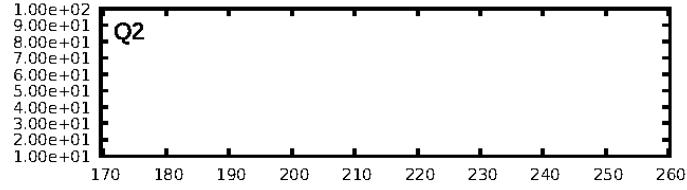
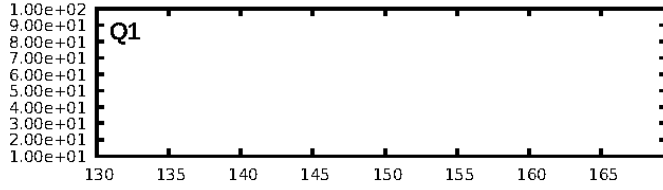
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.67σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGoF-sig: 45.0%
Bootstrap-pfa: 1.36e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.6886
Centroid-sig: N/A
Centroid-so: 0.334 arcsec [0.42σ]
OotOffset-rm: 2.227 arcsec [9.20σ]
KicOffset-rm: 2.175 arcsec [8.97σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

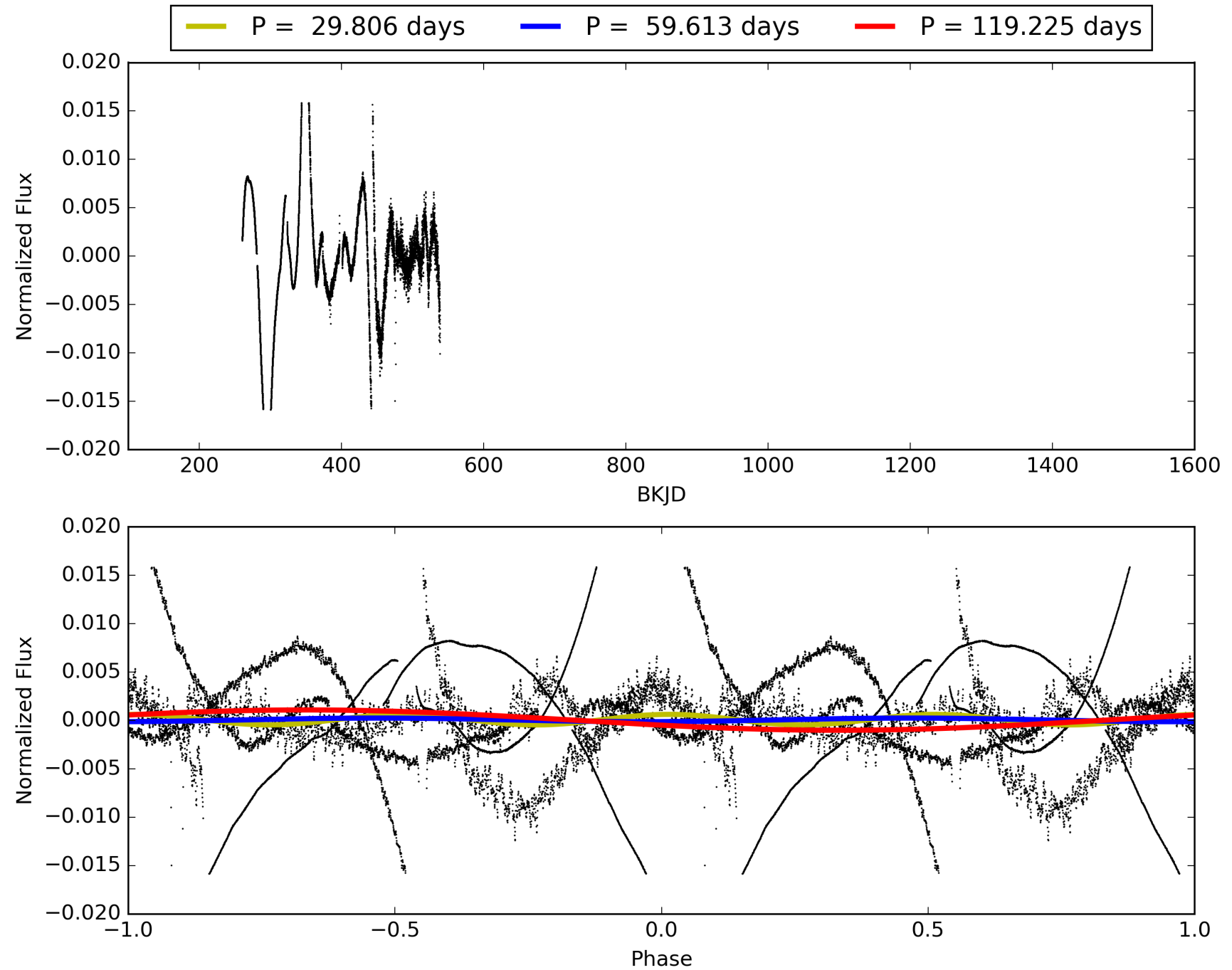
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:30:40 Z

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

TCE 009341241-02, PDC Light Curves

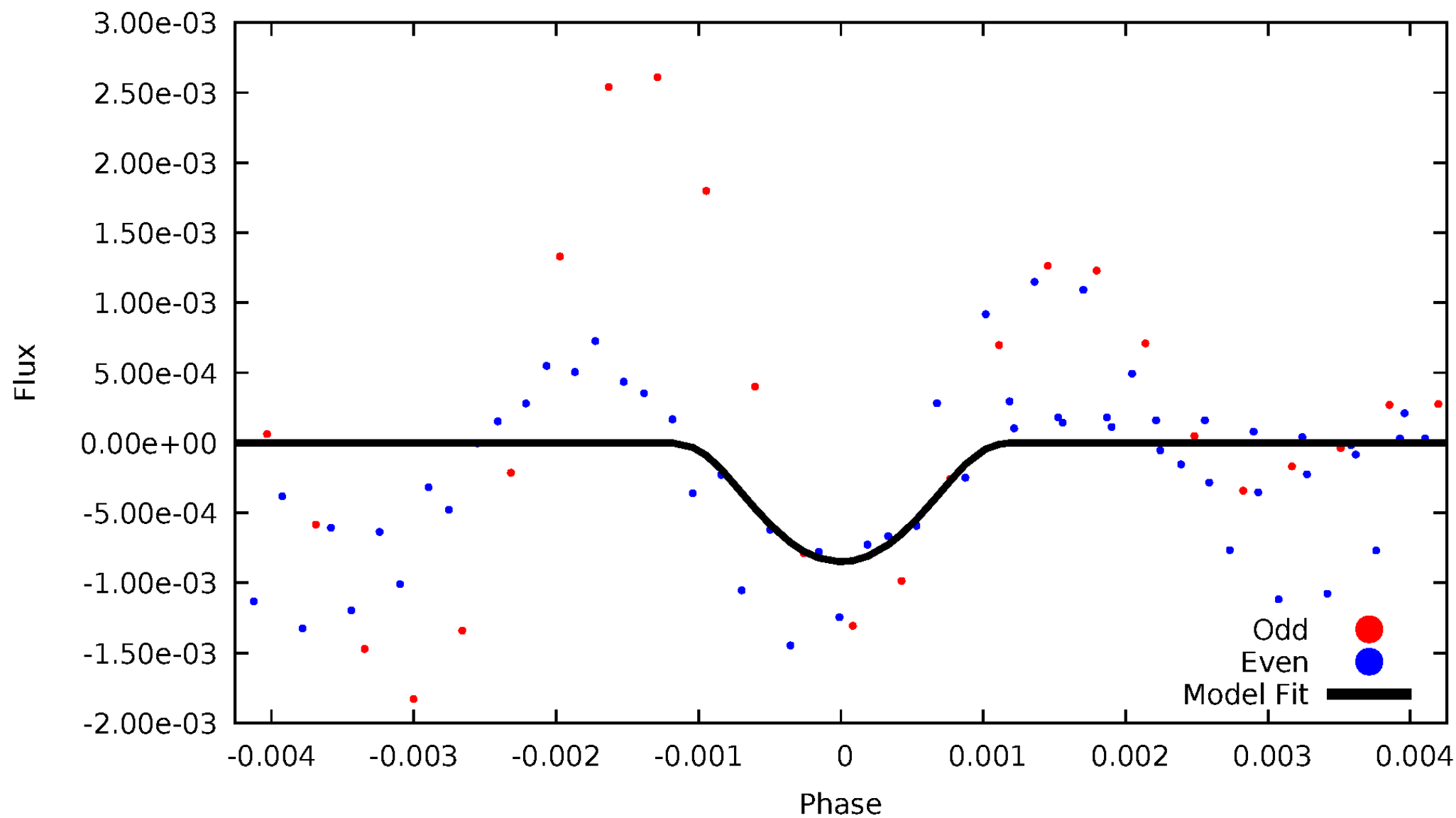


TCE 009341241-02



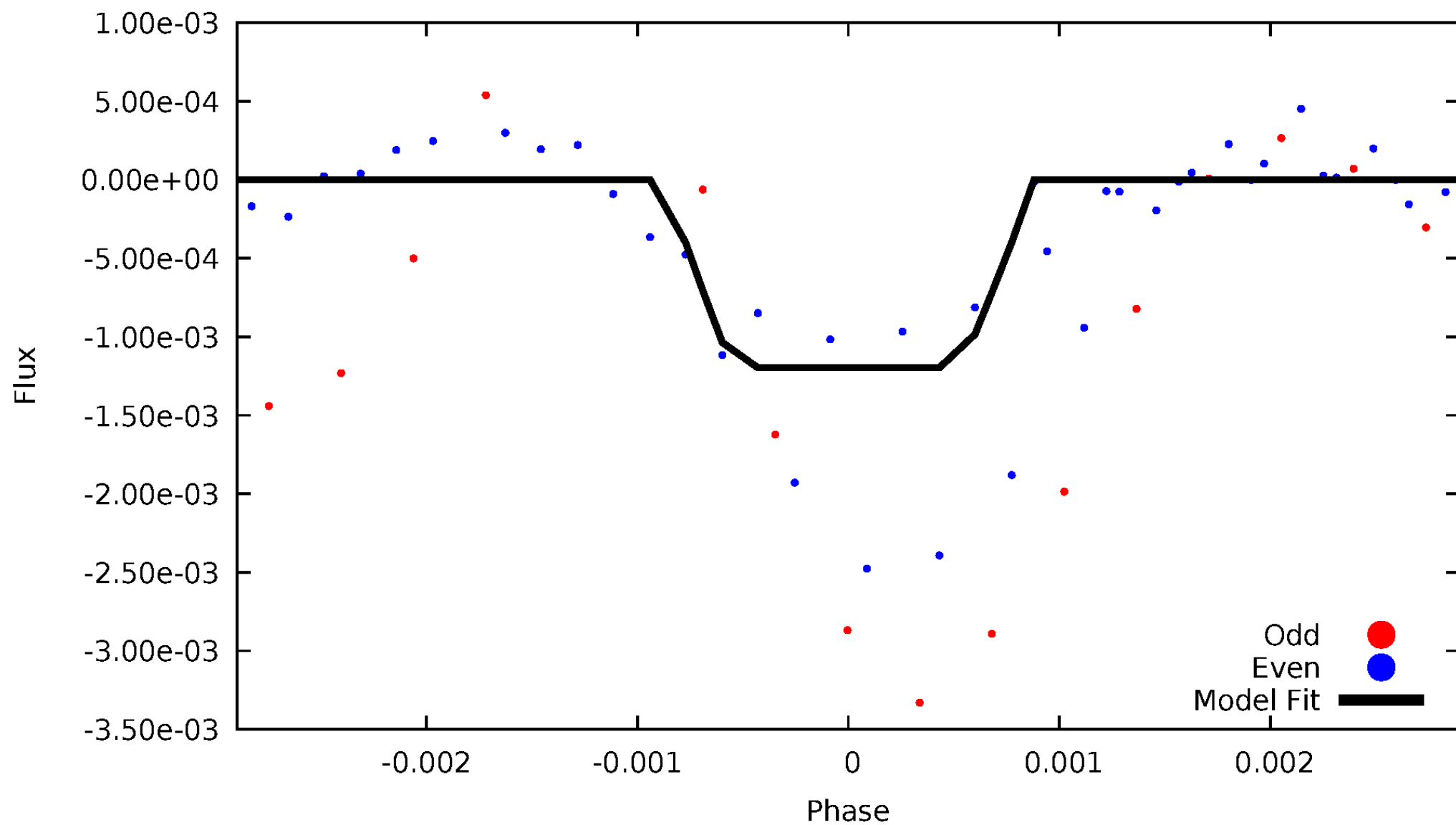
DV Odd/Even

TCE 009341241-02



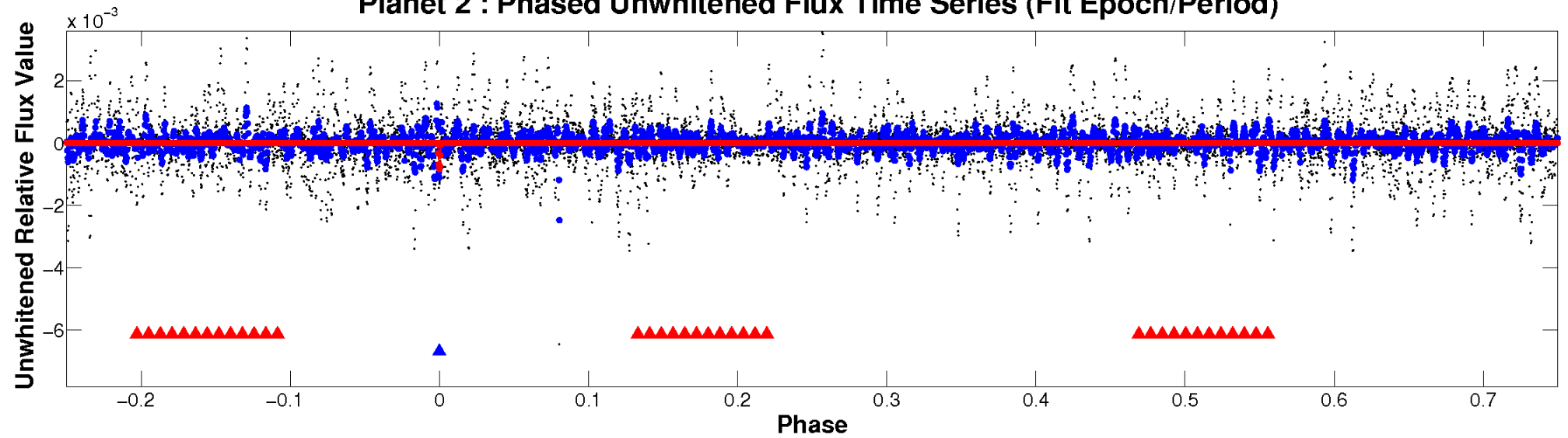
ALT Odd/Even

TCE 009341241-02

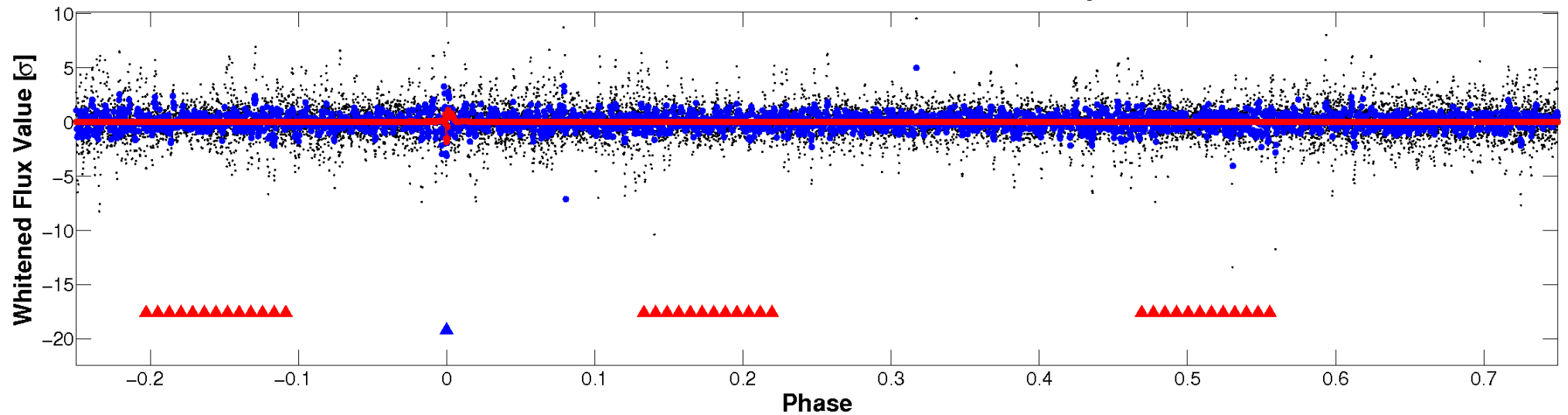


Non-Whitened Vs. Whitened Light Curve

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

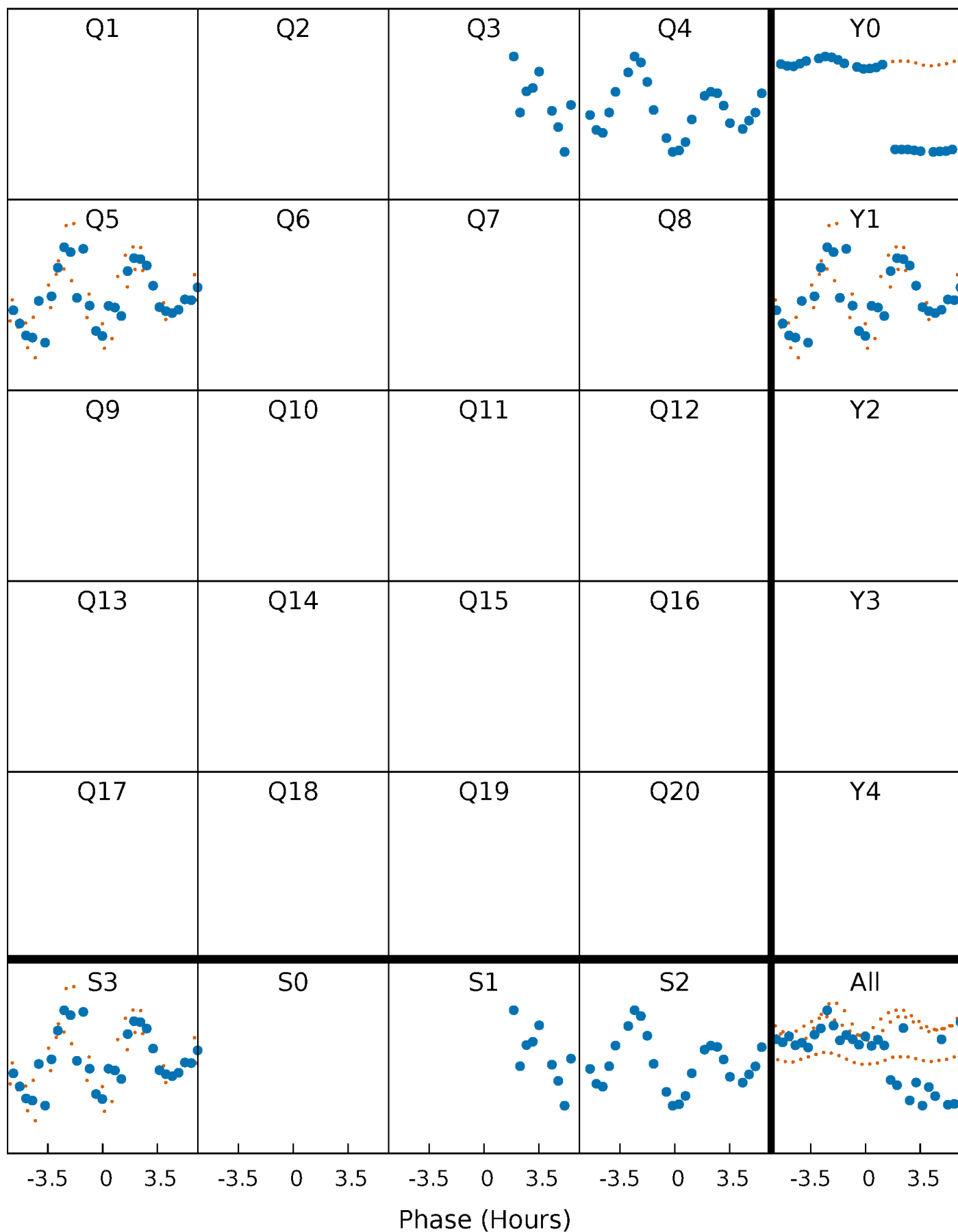


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



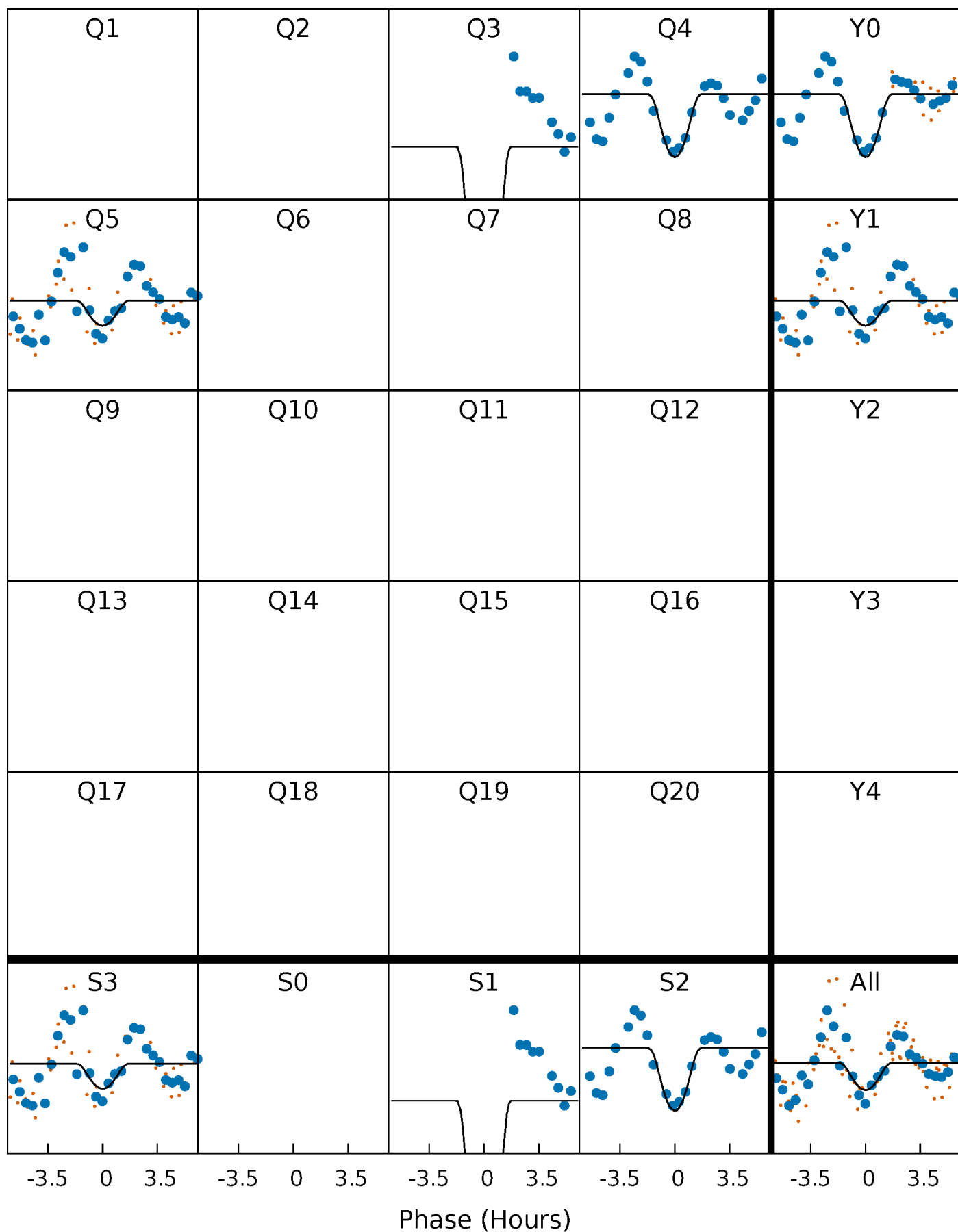
PDC Quarter-Phased Transit Curves

TCE 009341241-02 P= 59.612594 Days $T_0=172.129987$ (BKJD)



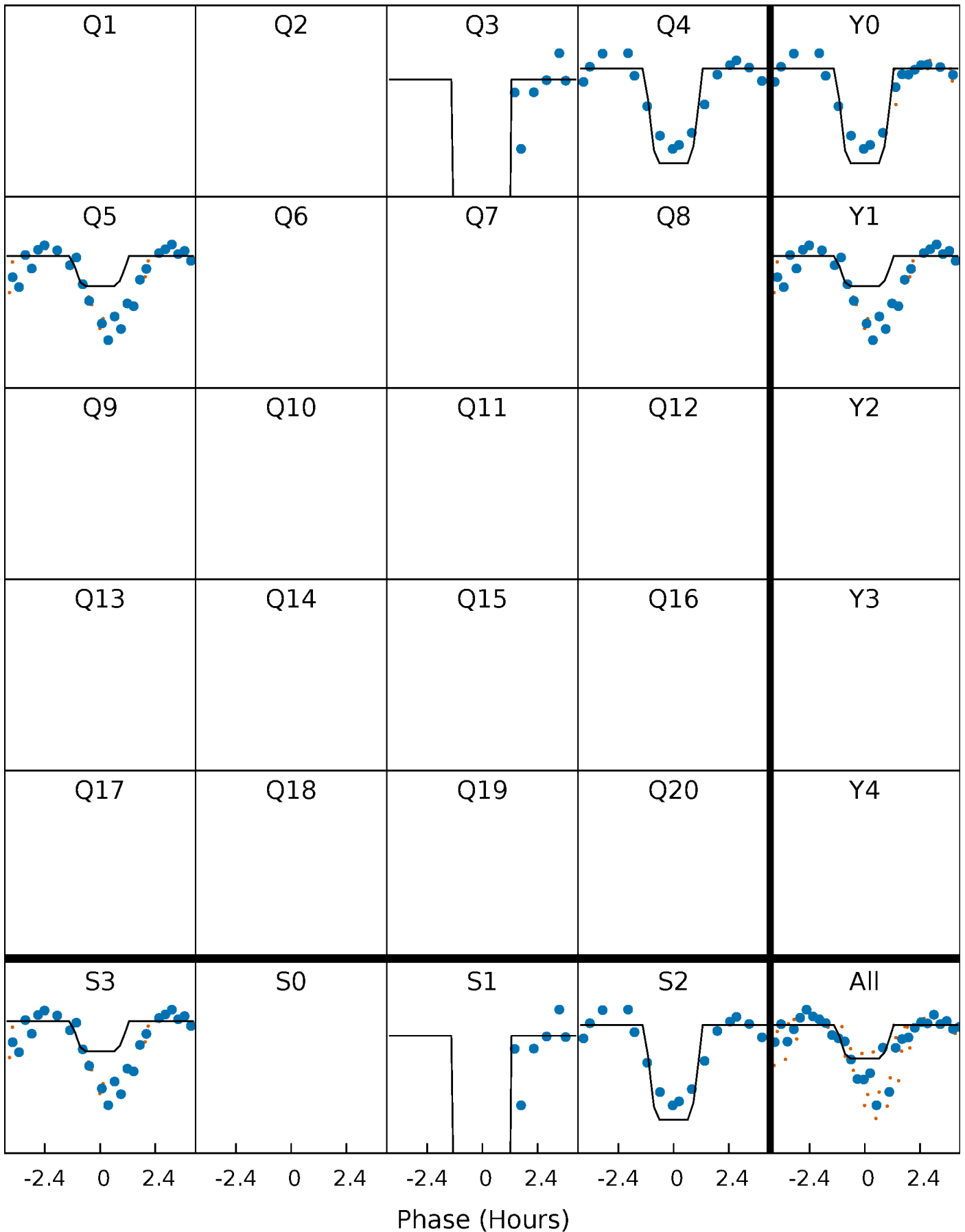
DV Quarter-Phased Transit Curves

TCE 009341241-02 P= 59.612594 Days $T_0=172.129987$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

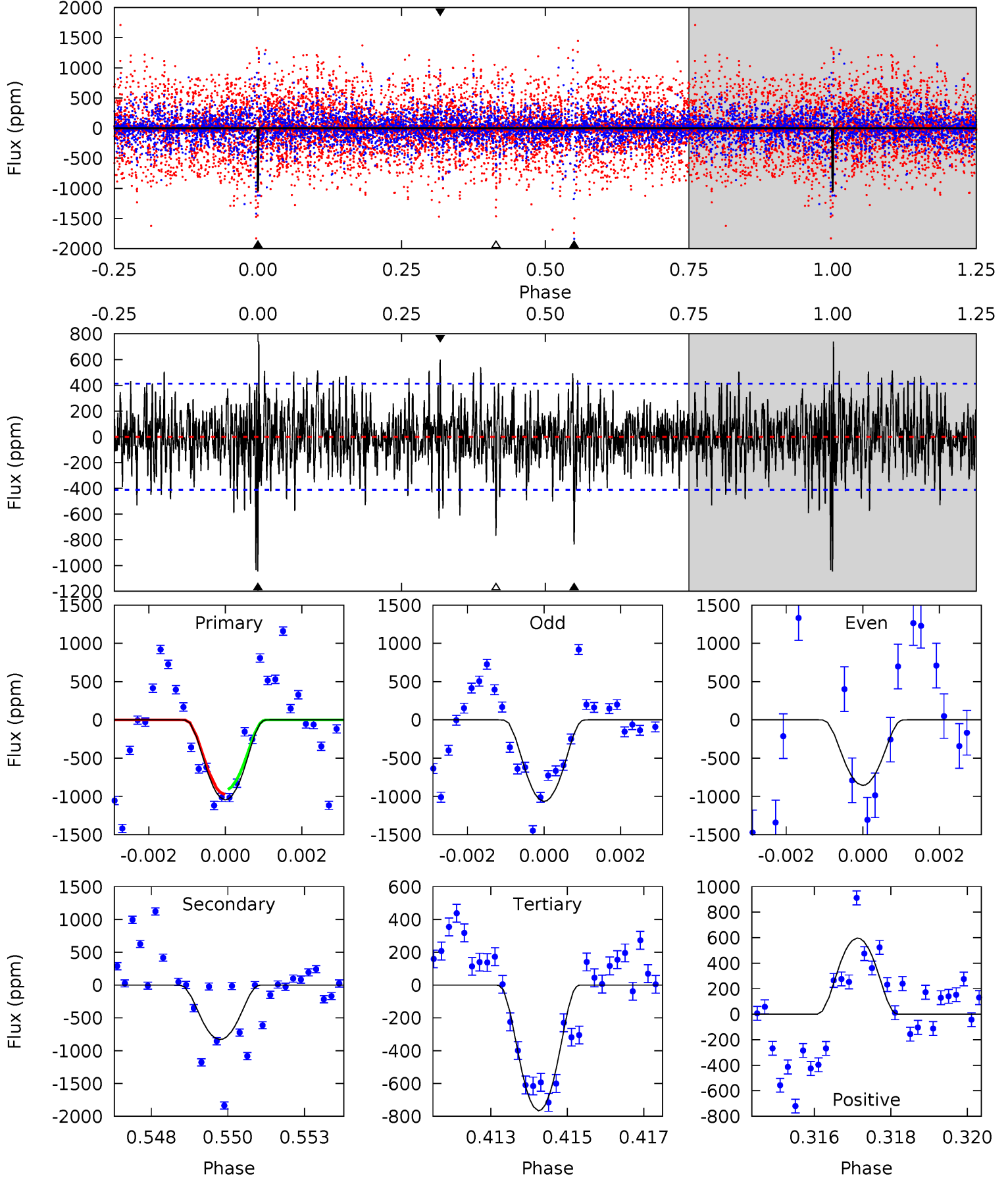
TCE 009341241-02 P= 59.601463 Days $T_0=172.170407$ (BKJD)



DV Model-Shift Uniqueness Test

009341241-02, P = 59.612594 Days, E = 172.129987 Days

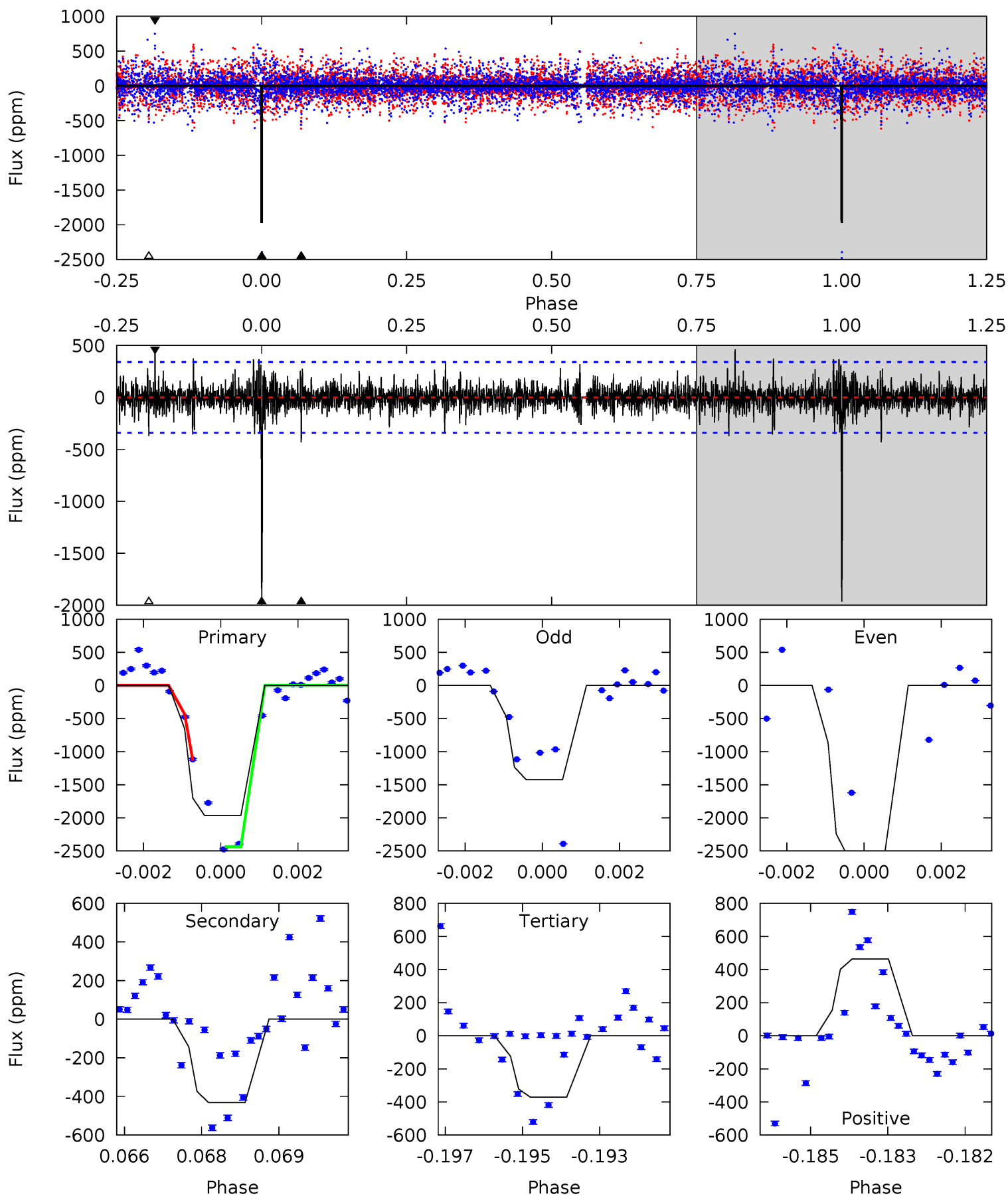
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	10.7	9.87	7.69	5.30	3.05	2.31	3.59	5.77	0.82	3.00	0.76	1.11	0.41	0.43



Alt Model-Shift Uniqueness Test

009341241-02, P = 59.601463 Days, E = 172.170407 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.0	6.81	5.85	7.30	5.36	3.15	1.27	25.1	23.7	0.96	-0.49	9.12	0.88	0.19	0



Stellar Parameters For KIC 009341241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3260^{+117}_{-78}	$0.077^{+0.208}_{-0.065}$	$-0.100^{+0.300}_{-0.100}$	$155.724^{+8.426}_{-26.963}$	$1.056^{+0.223}_{-0.096}$	$0.000^{+0.000}_{-0.000}$
	+4%/-2%	+270%/-84%	+300%/-100%	+5%/-17%	+21%/-9%	+89%/-15%
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 009341241-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-830 ± 78	$1630.08^{+1708.97}_{-1128.32}$	4487^{+213}_{-232}	-3429^{+423}_{-174}	$0.016^{+0.157}_{-0.013}$
Alt.	-432 ± 63	$1573.45^{+1592.20}_{-1088.67}$	4502^{+202}_{-243}	-3451^{+273}_{-169}	$0.009^{+0.086}_{-0.007}$

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

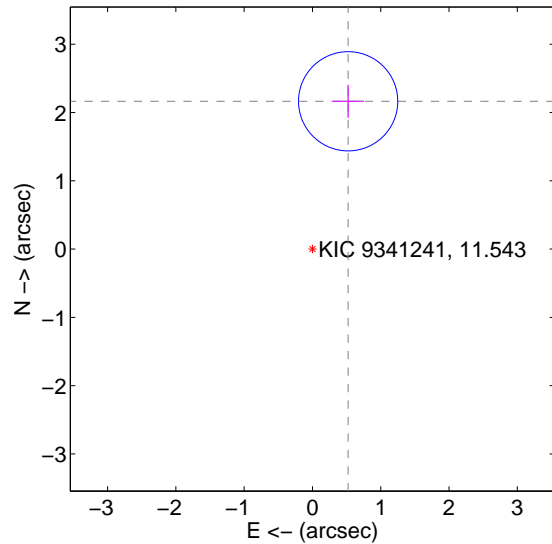
Supplemental centroid analysis for 009341241-02. **Kepler magnitude: 11.54.** Transit SNR 7.68

There are 1 quarters with good PRF difference image offsets

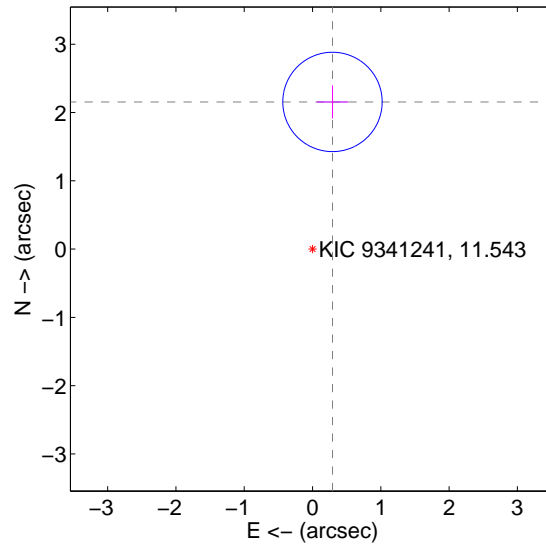
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.227 \pm 0.242	9.20	-0.523 \pm 0.232	2.165 \pm 0.243
PRF-fit source offset from KIC position	2.175 \pm 0.243	8.97	-0.292 \pm 0.232	2.155 \pm 0.243
photometric centroid source offset	0.33 \pm 0.80	0.42	0.03 \pm 0.68	0.33 \pm 0.80

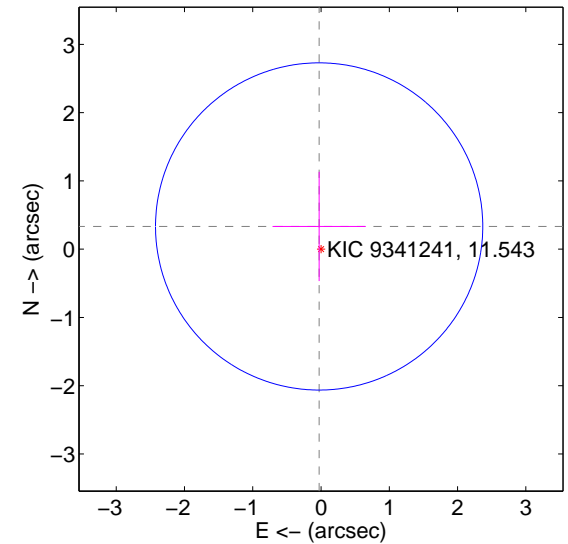
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

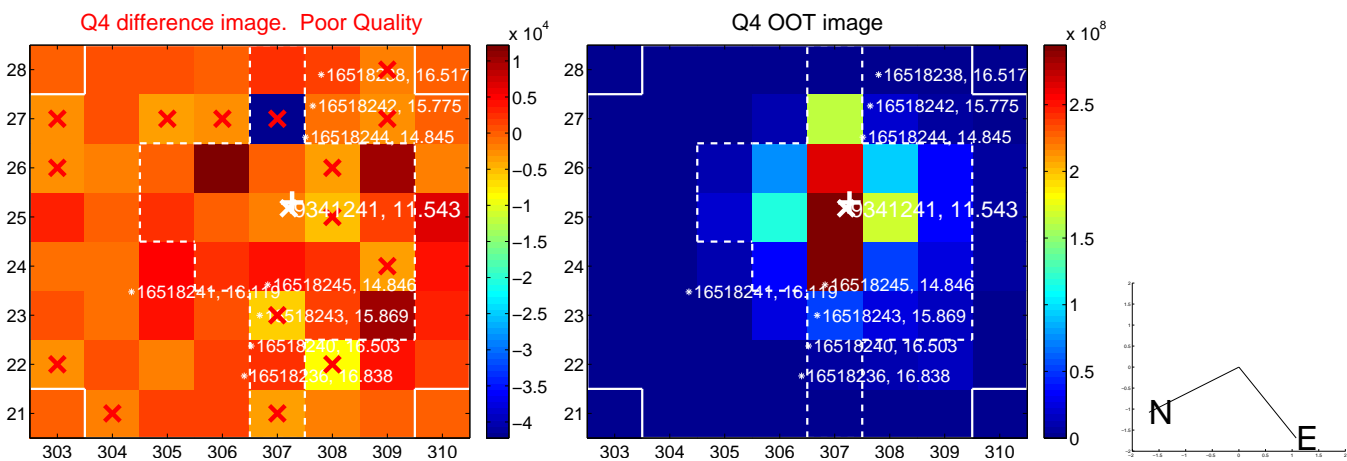
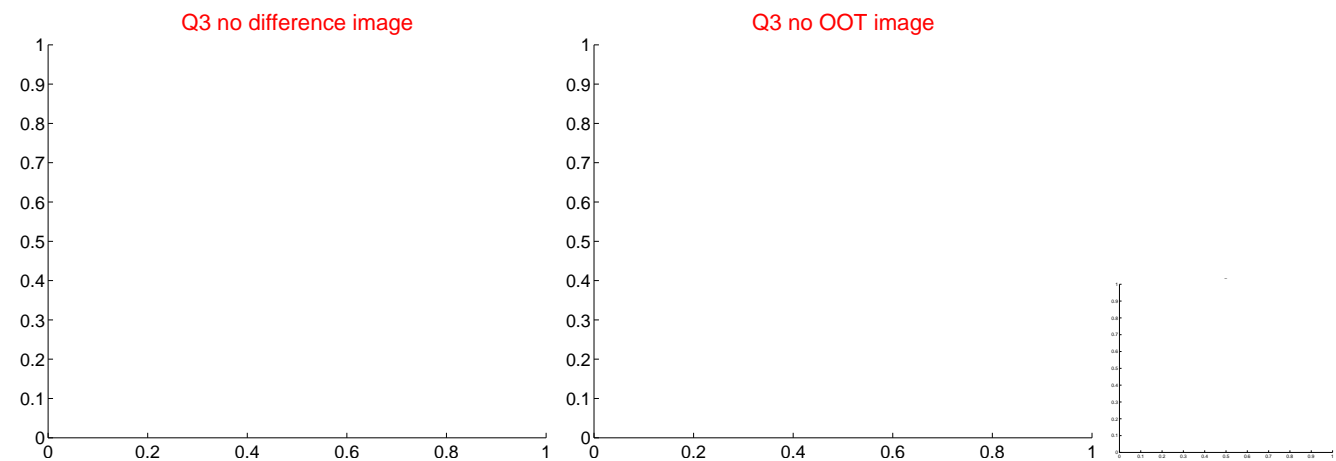
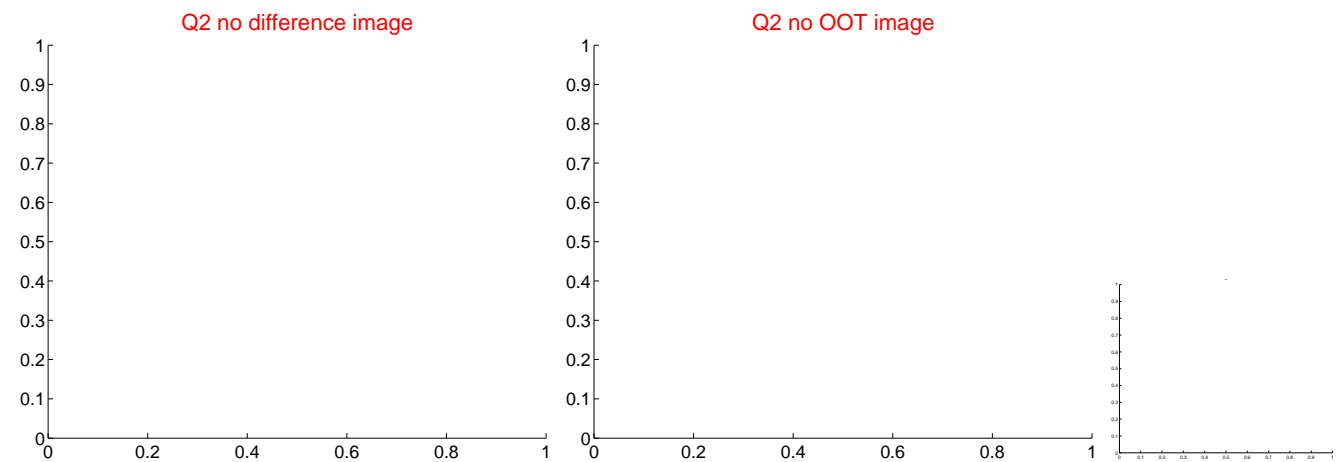
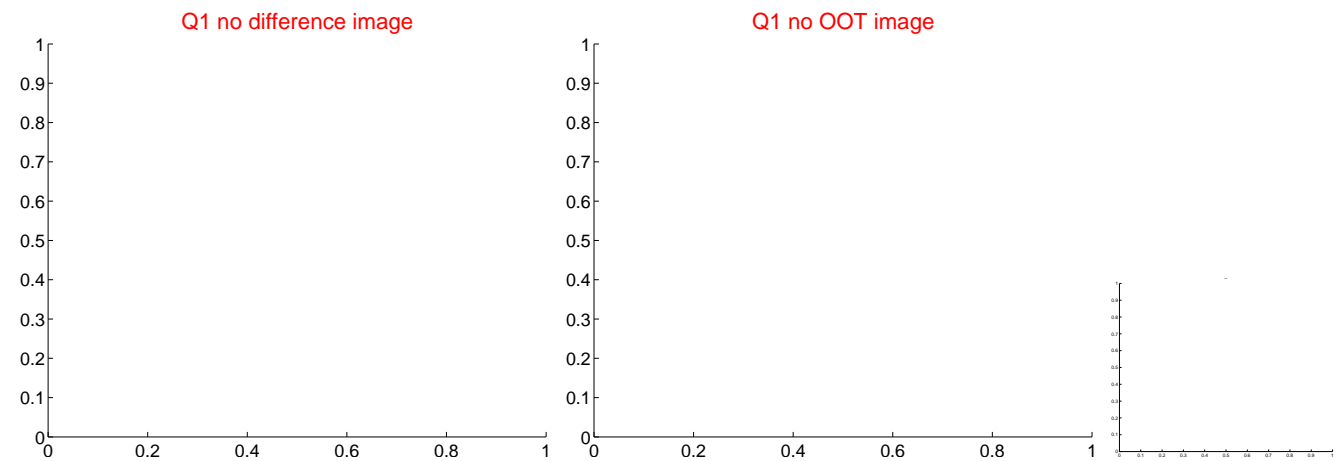


offset from photometric centroids

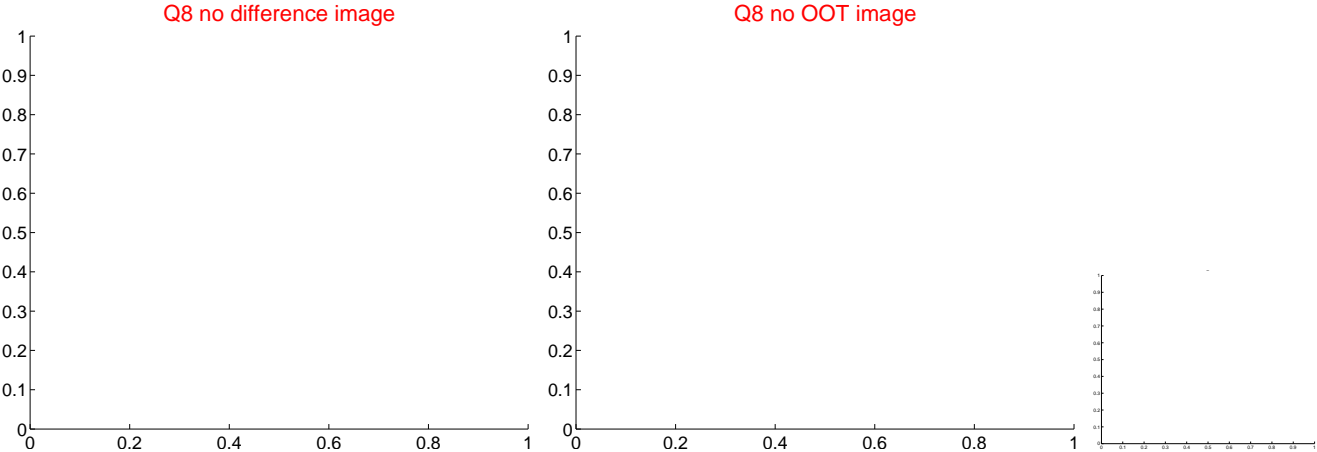
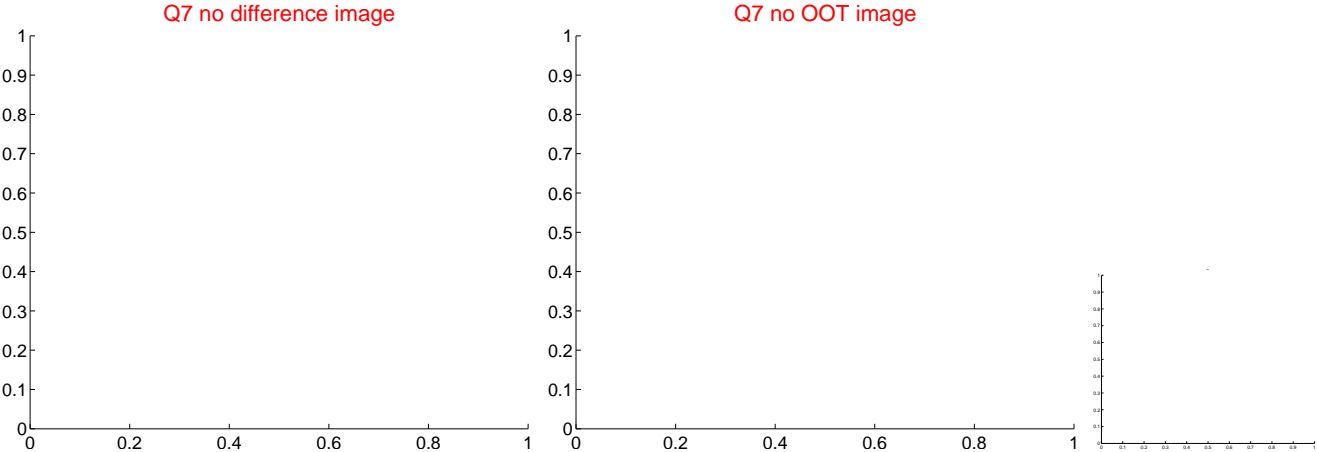
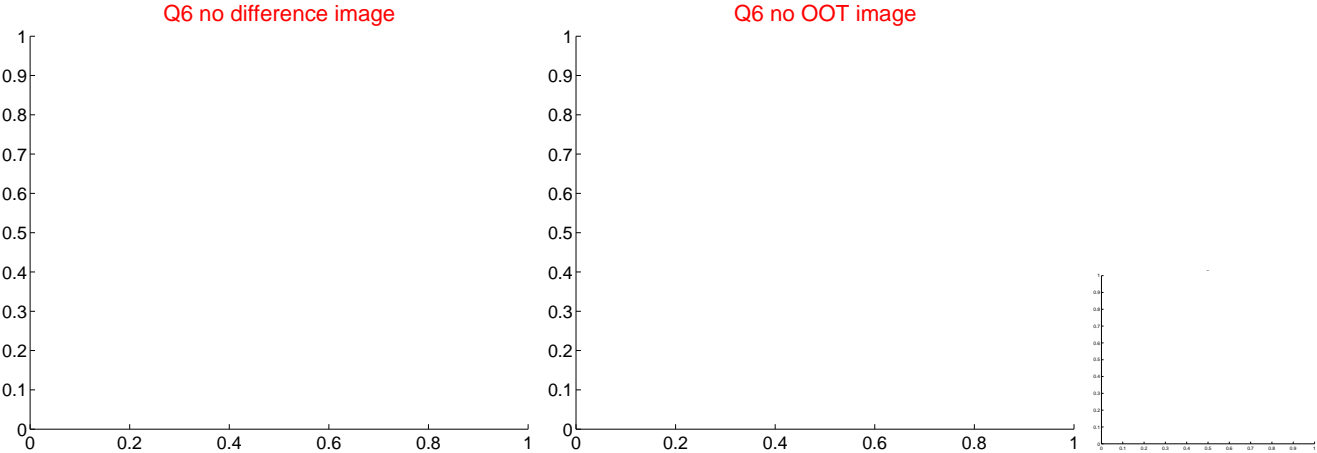
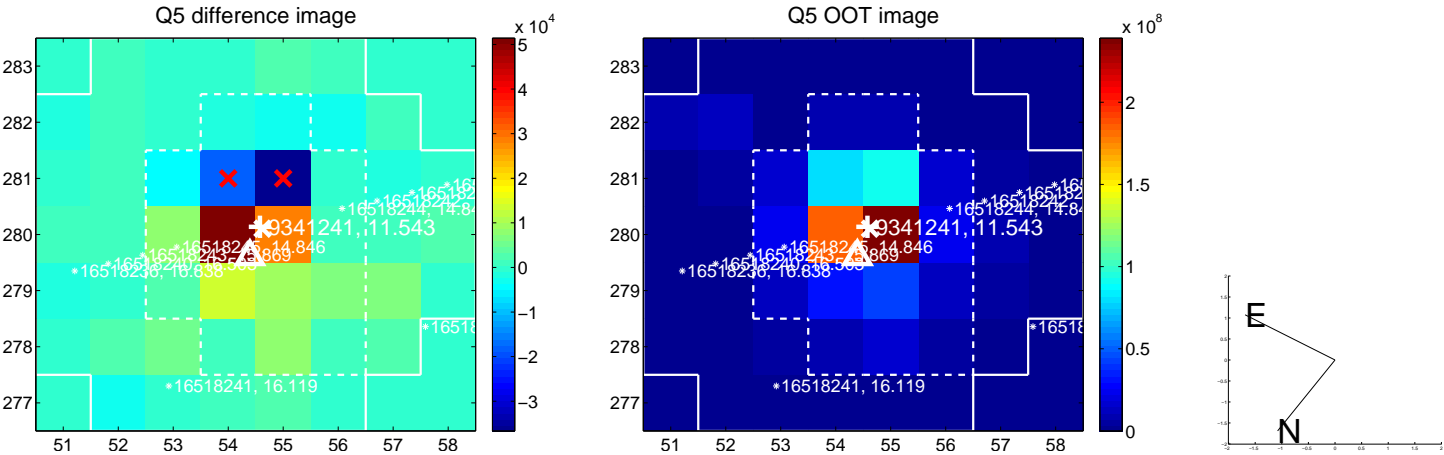


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

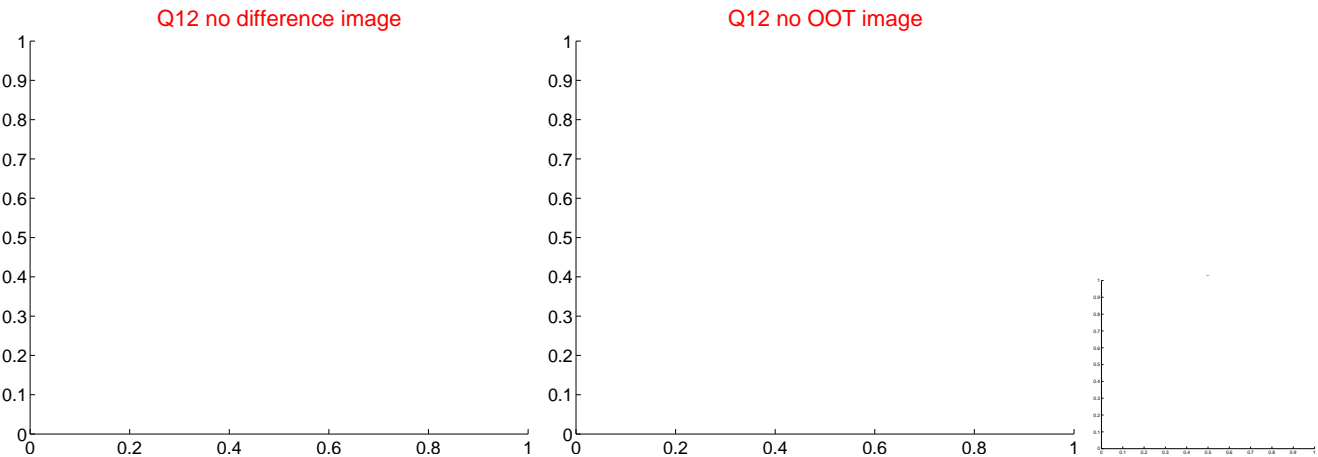
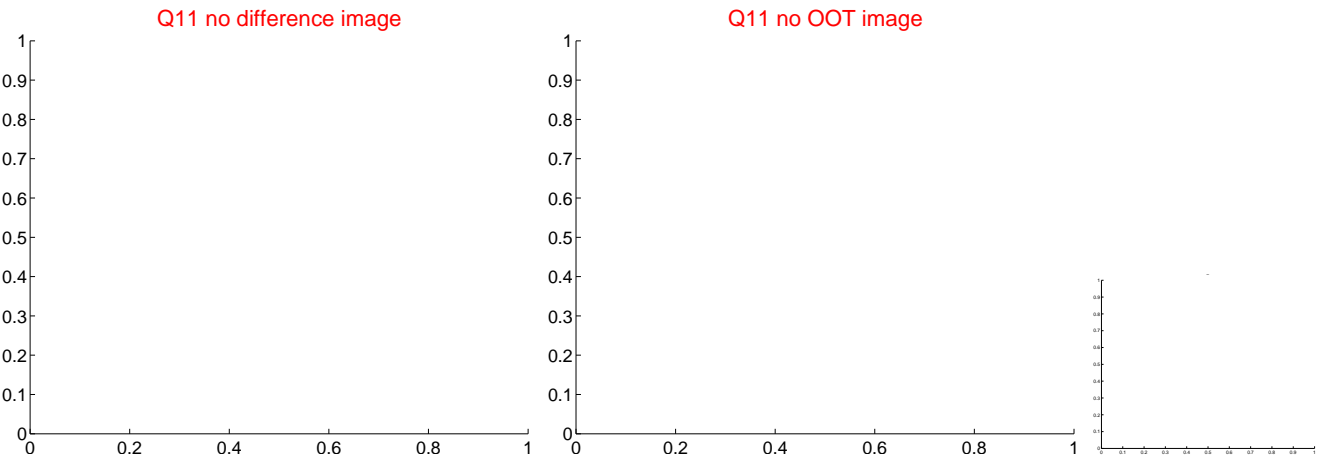
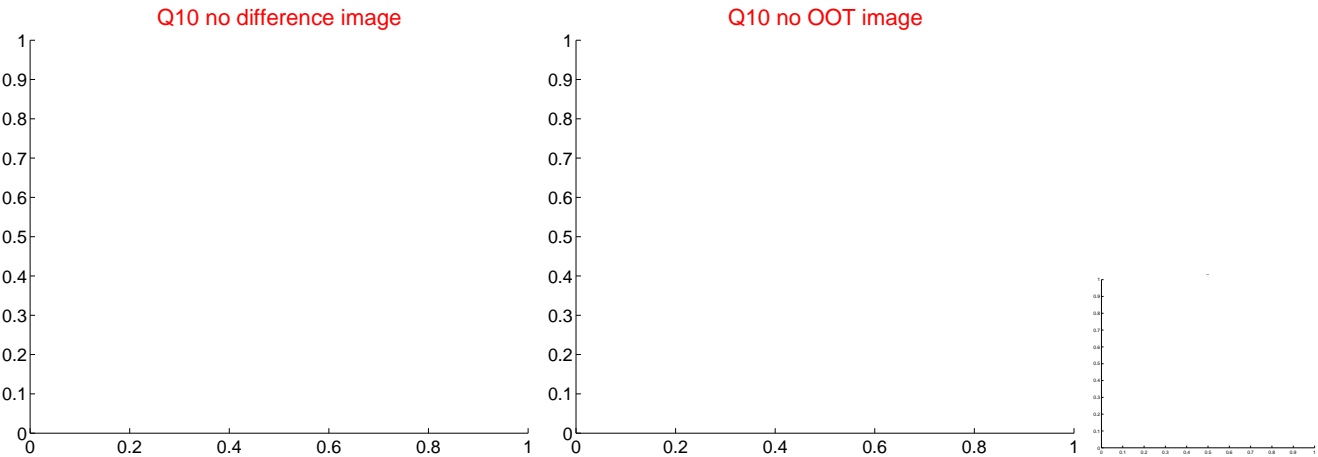
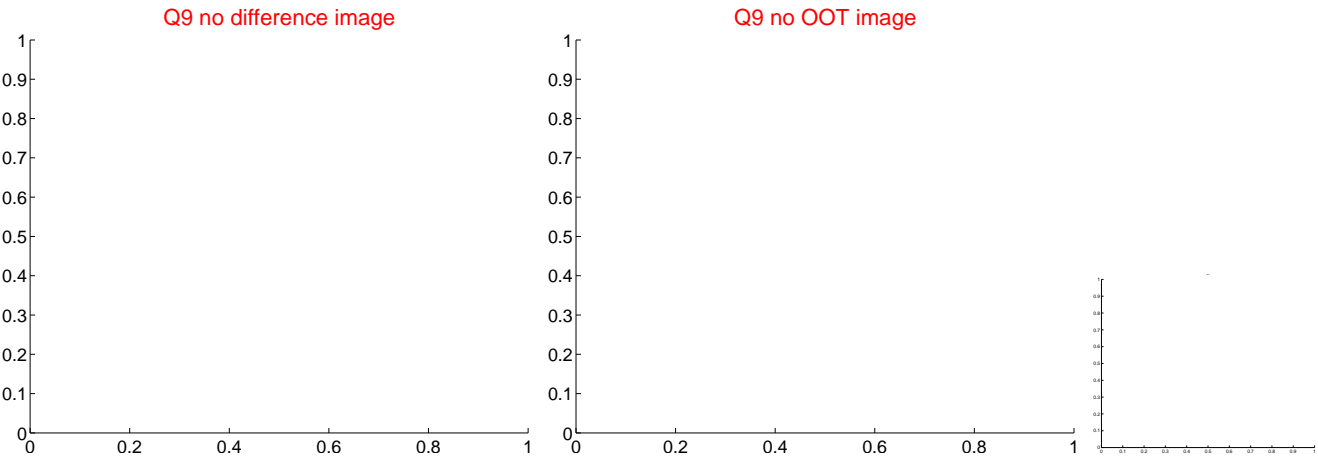
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



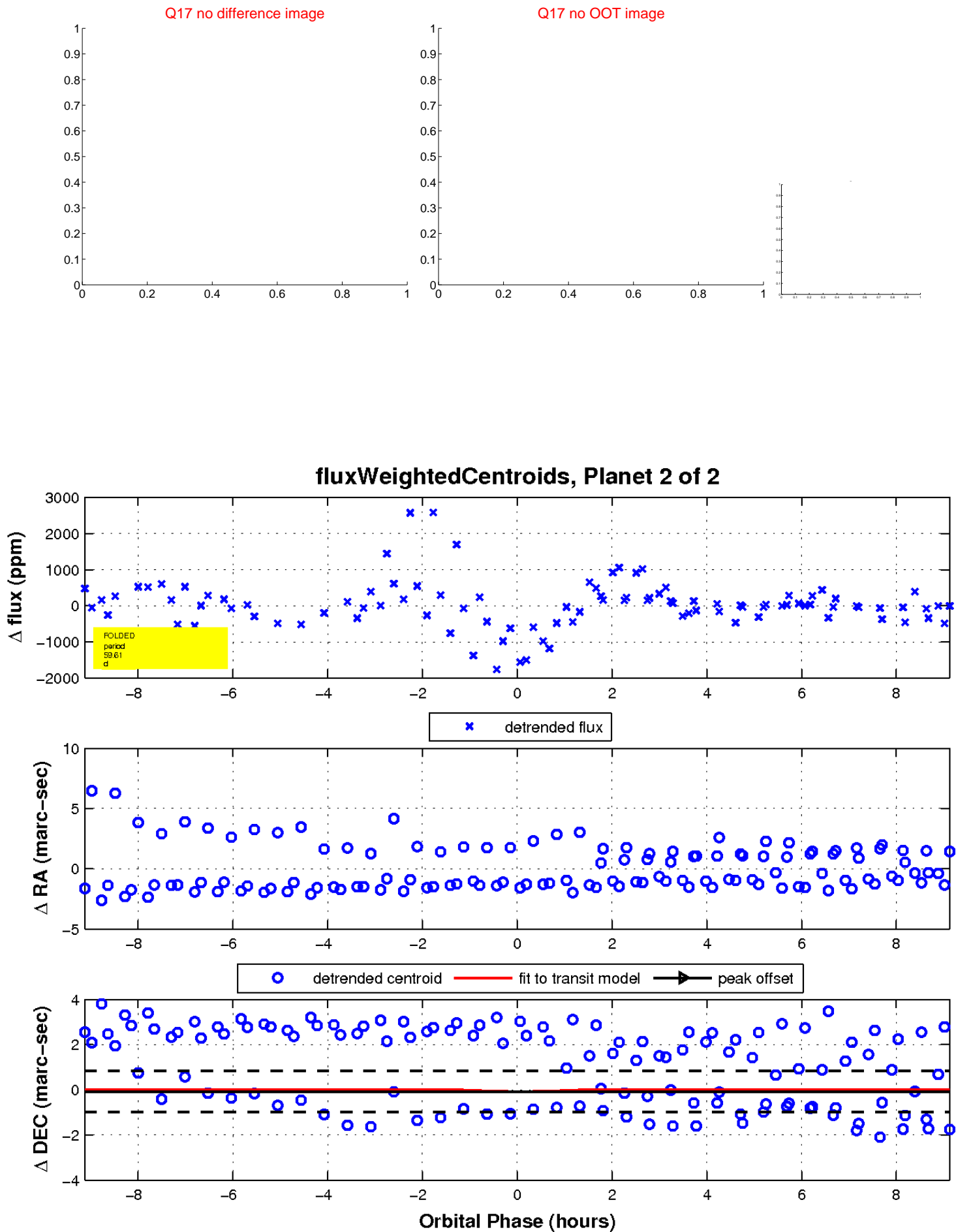
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

