

KIC 009934208

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})
009934208-01	OBS	7256.01	9.058488	137.337885	128702.8	4.158	4269.8	2830.0	0.57	4340	20.11	21.19
009934208-02	OBS	No	9.058492	133.327663	8586.0	3.047	286.2	271.0	0.57	4340	5.76	21.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009934208-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—HAS_SEC_TCE
009934208-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

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

Ephemeris Match Information For 009934208-01

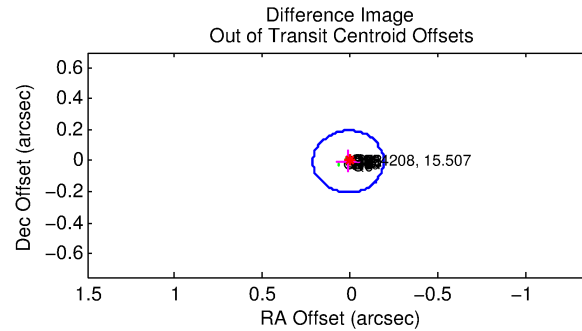
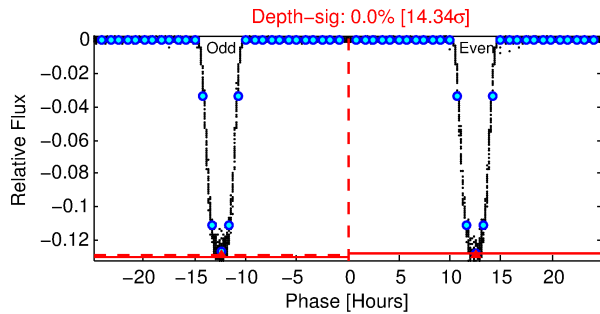
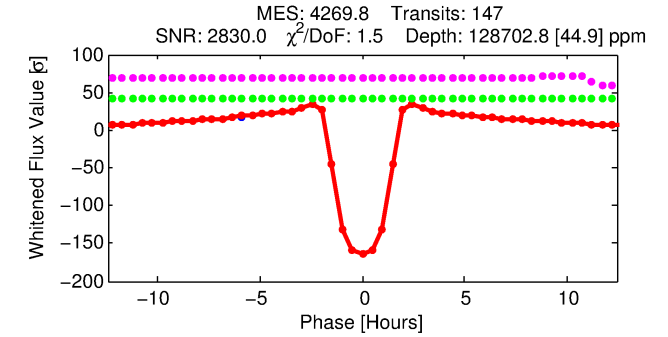
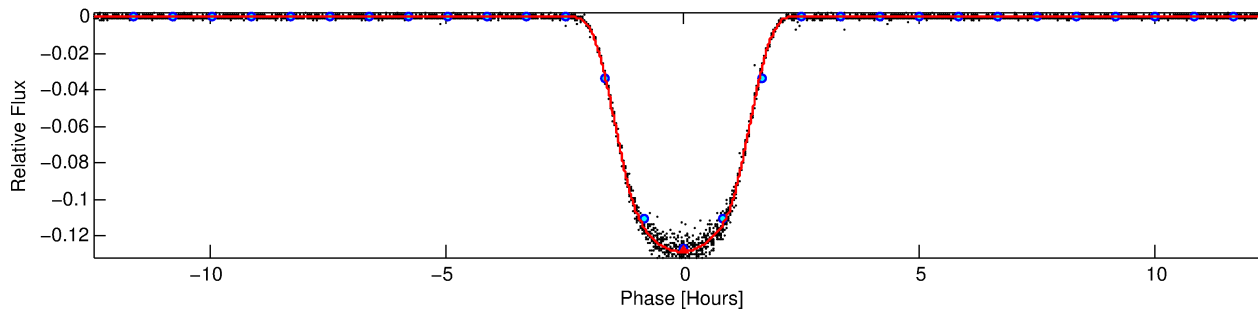
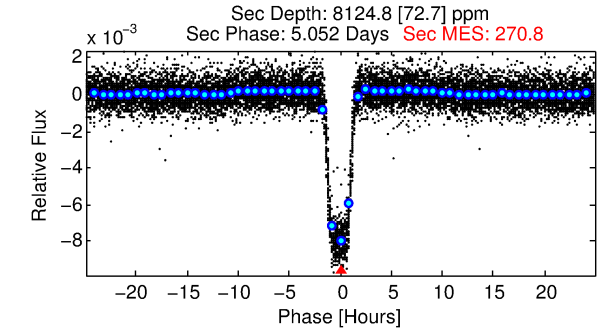
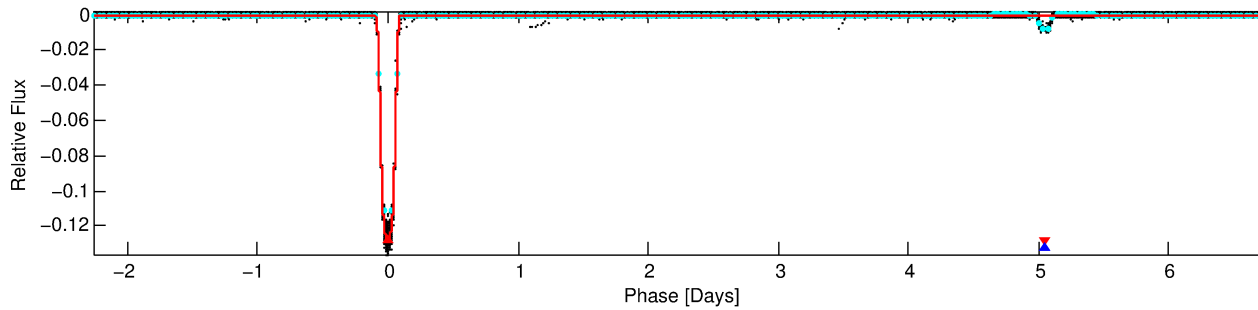
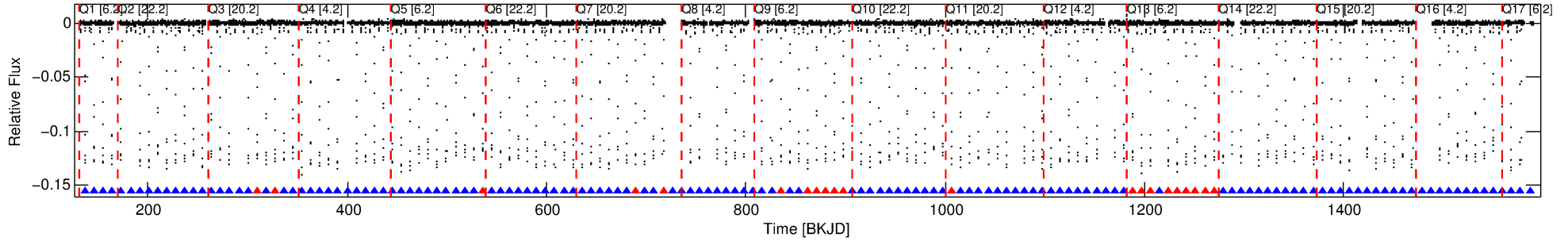
No Significant Match Found

DV One-Page Summary

KIC: 9934208 Candidate: 1 of 2 Period: 9.058 d

KOI: K07256.01 Corr: 0.997

Kp: 15.51 R*: 0.57 Rs Teff: 4340.0 K Logg: 4.67 Fe/H: -0.560



DV Fit Results:

Period = 9.05849 [0.00000] d
Epoch = 137.3379 [0.0000] BKJD
Rp/R* = 0.3216 [0.0001]
a/R* = 21.93 [0.02]
b = 0.11 [0.01]
Seff = 21.19 [3.47]
Teq = 547 [22] K
Rp = 20.11 [1.97] Re
a = 0.0702 [0.0055] AU
Ag = 54.42 [6.02] [8.87σ]
Teffp = 2298 [70] K [23.96σ]

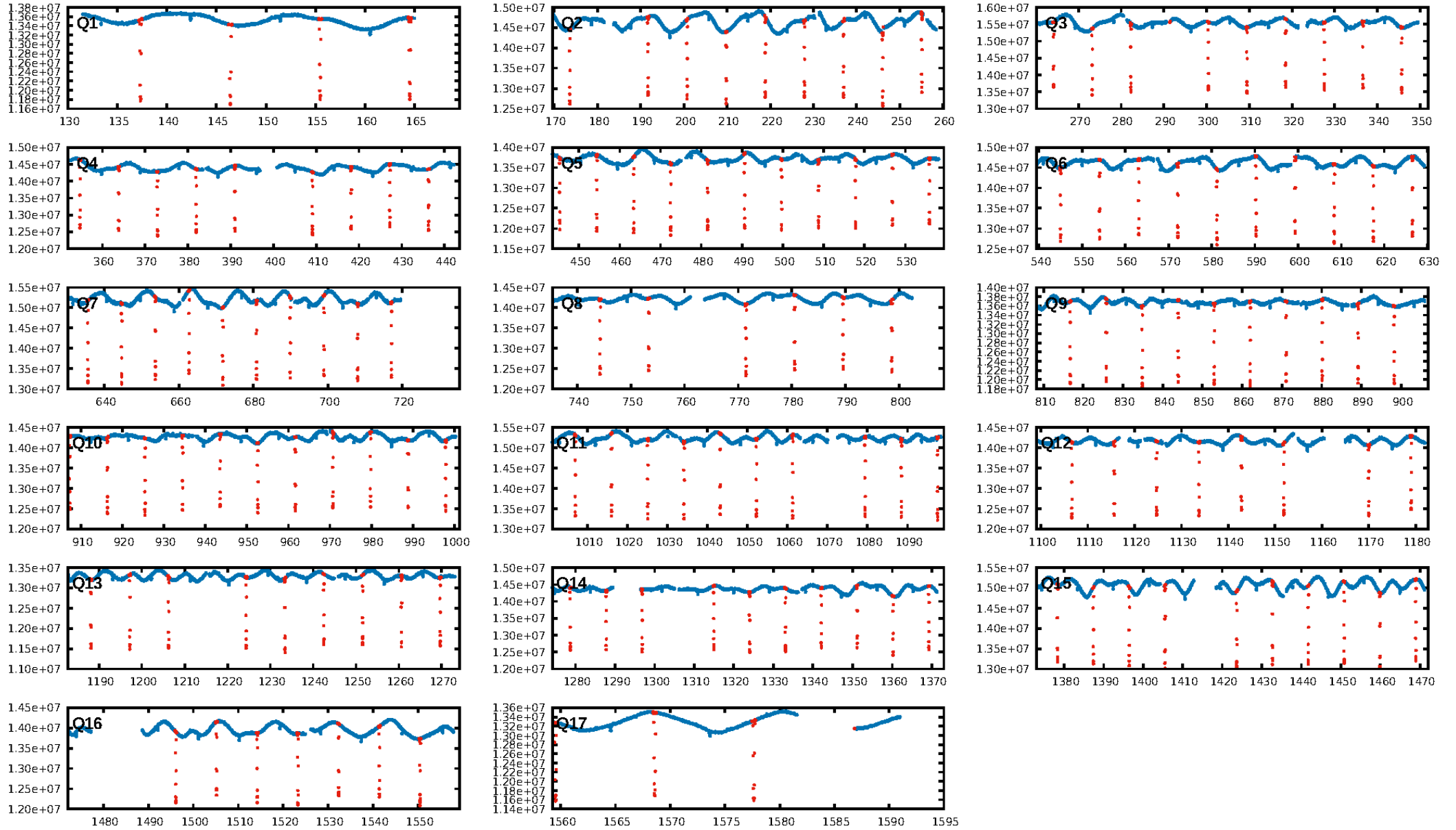
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.85 [119/140]
GhostDiagnostic-chr: 2.53
Centroid-sig: 0.0%
Centroid-so: 0.174 arcsec [58.56σ]
OotOffset-rm: 0.013 arcsec [0.19σ]
KicOffset-rm: 0.134 arcsec [1.98σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

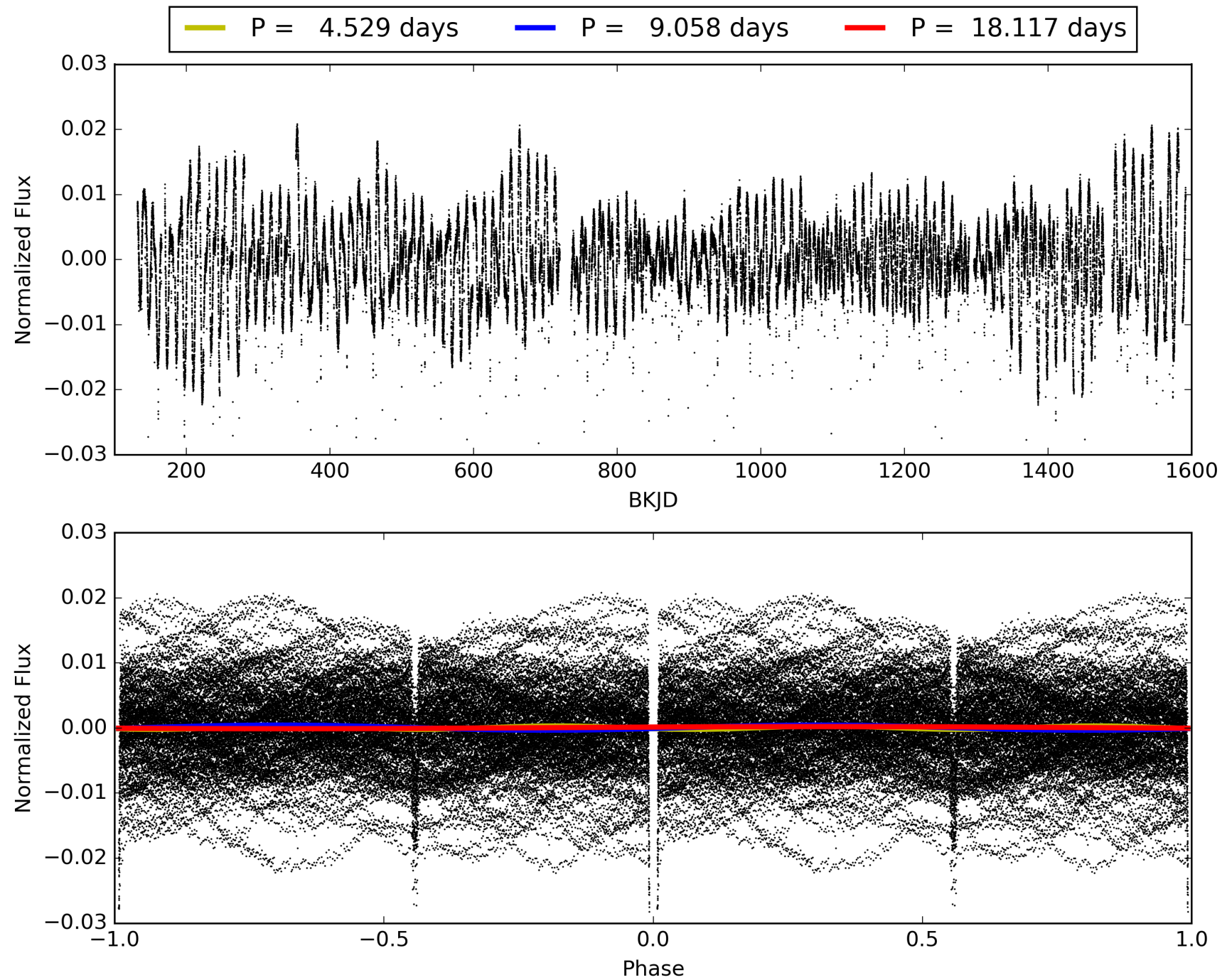
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:17:24 Z

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

TCE 009934208-01, PDC Light Curves

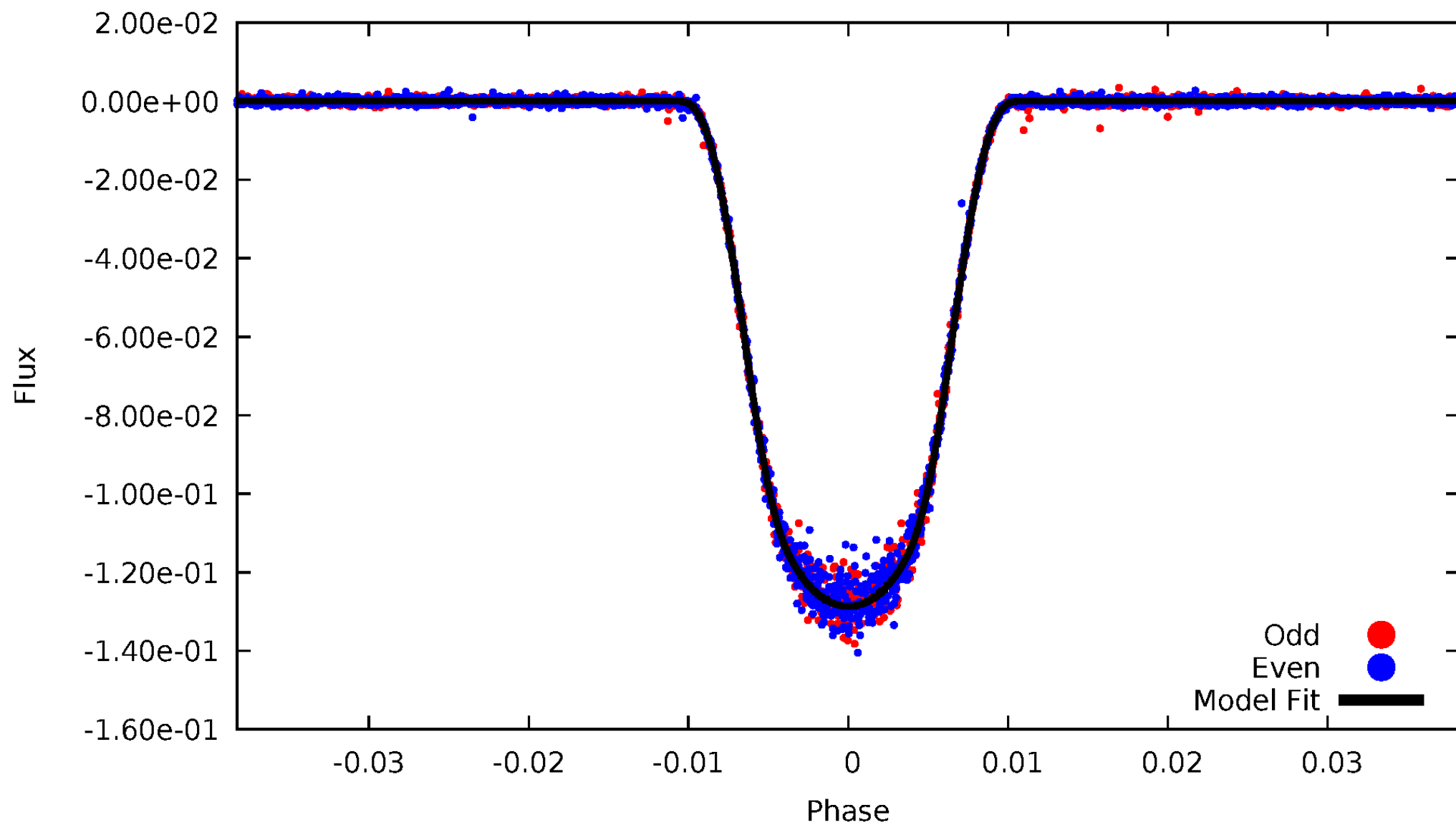


TCE 009934208-01



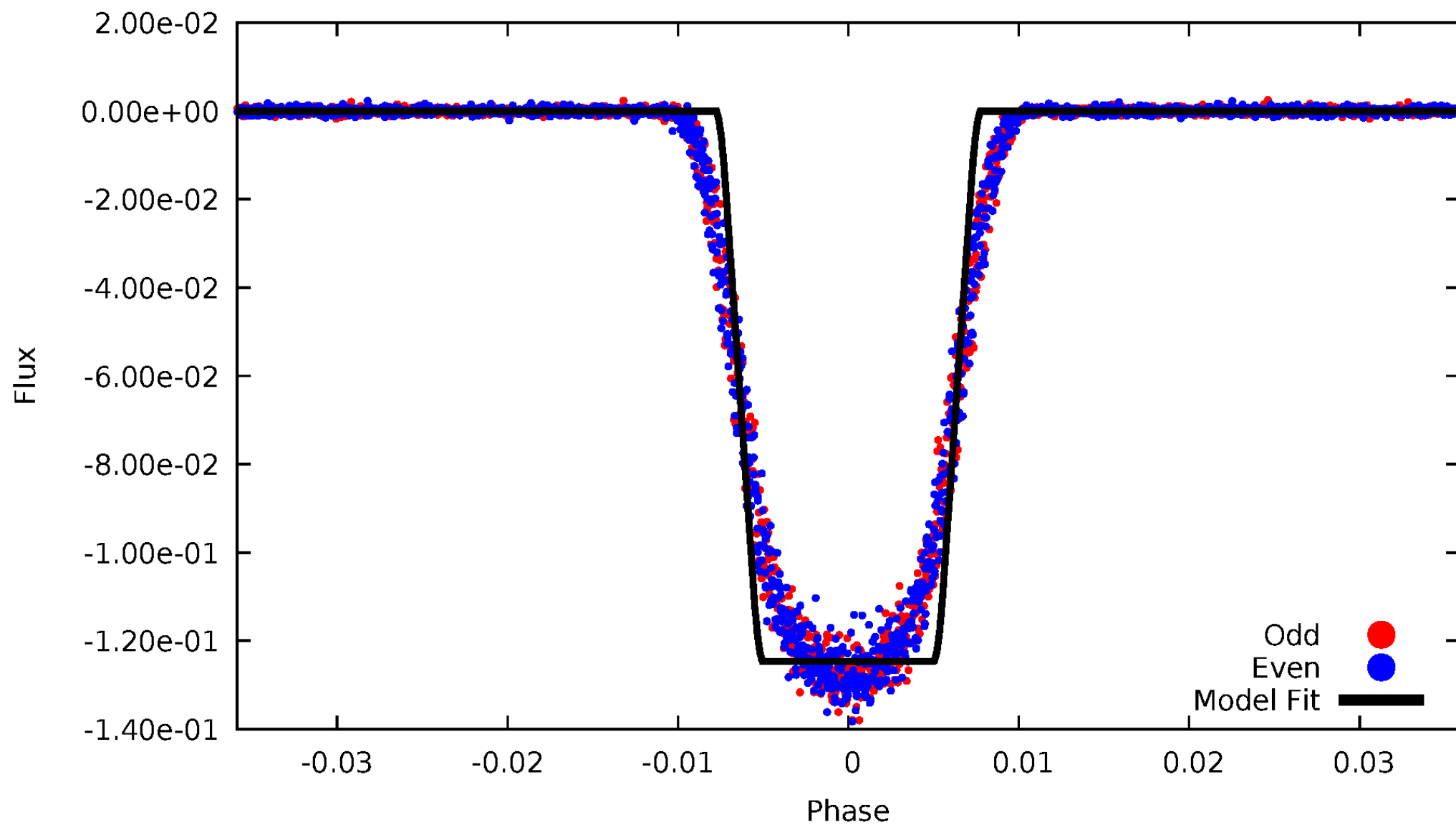
DV Odd/Even

TCE 009934208-01



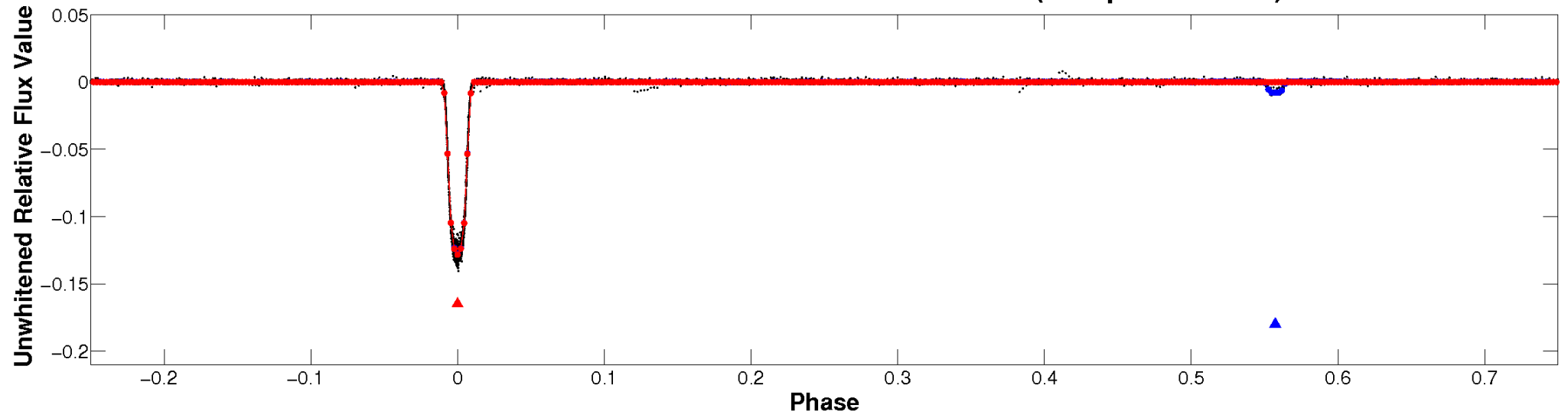
ALT Odd/Even

TCE 009934208-01

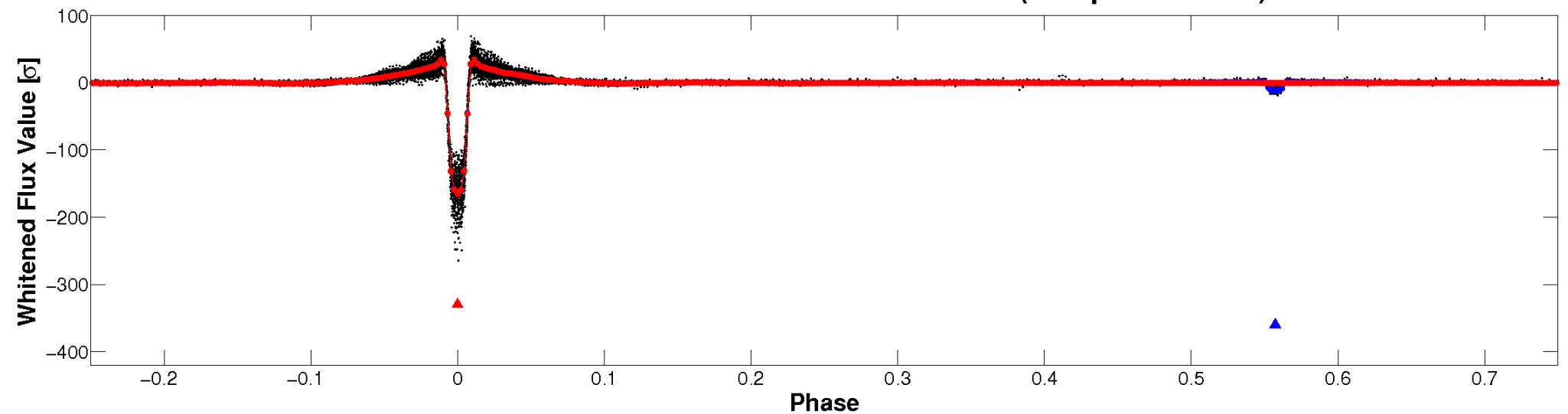


Non-Whitened Vs. Whitened Light Curve

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

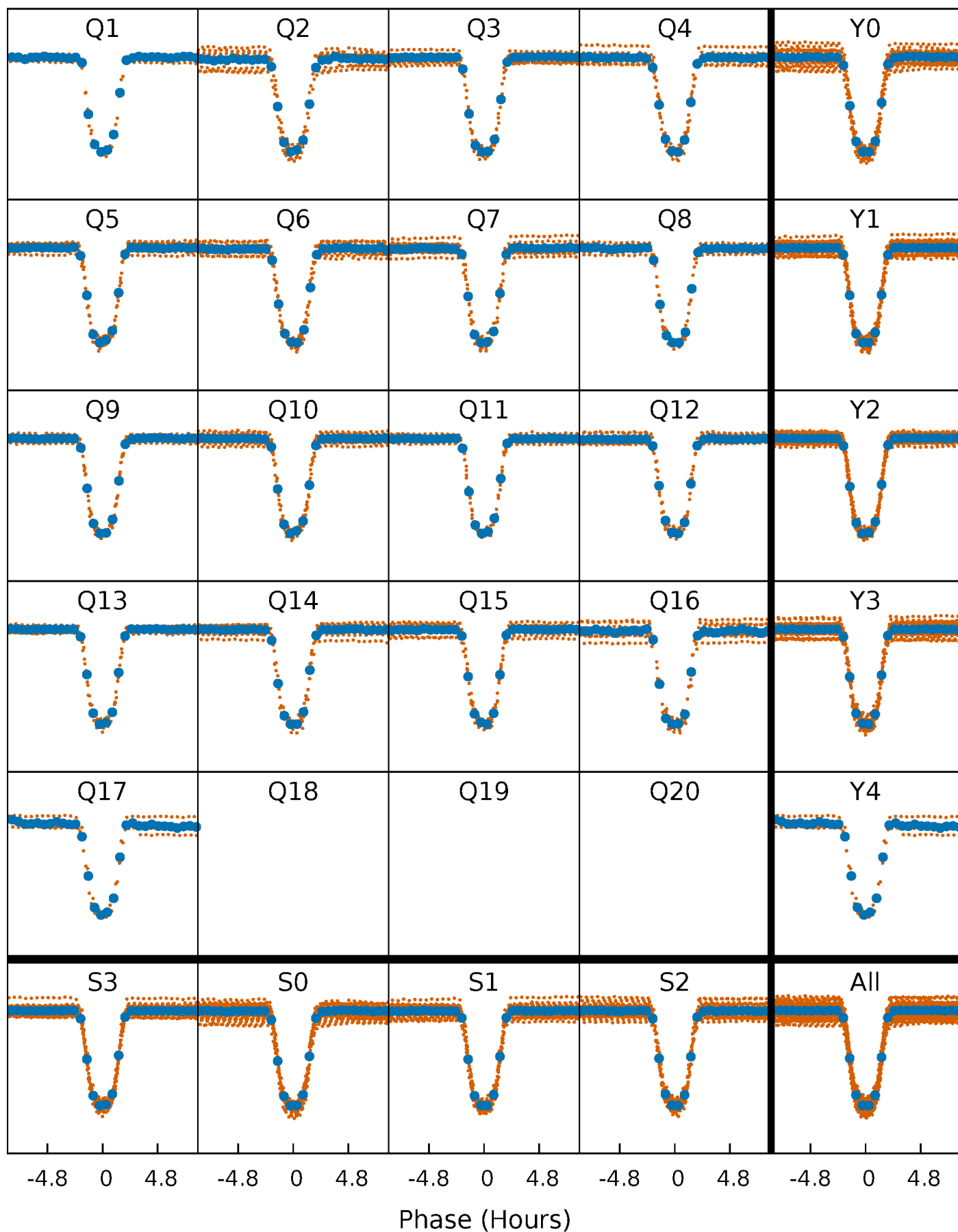


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



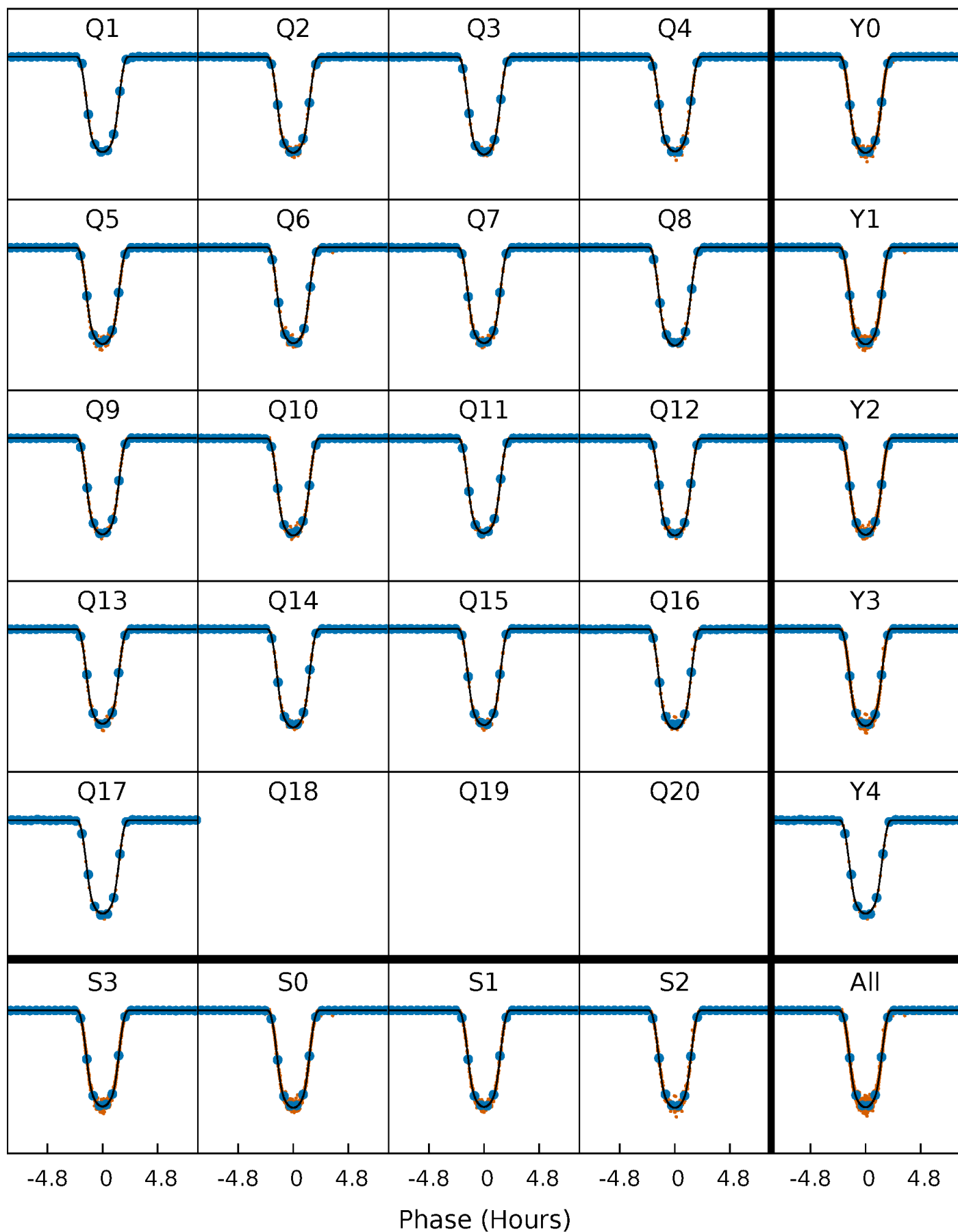
PDC Quarter-Phased Transit Curves

TCE 009934208-01 P= 9.058488 Days $T_0=137.337885$ (BKJD)



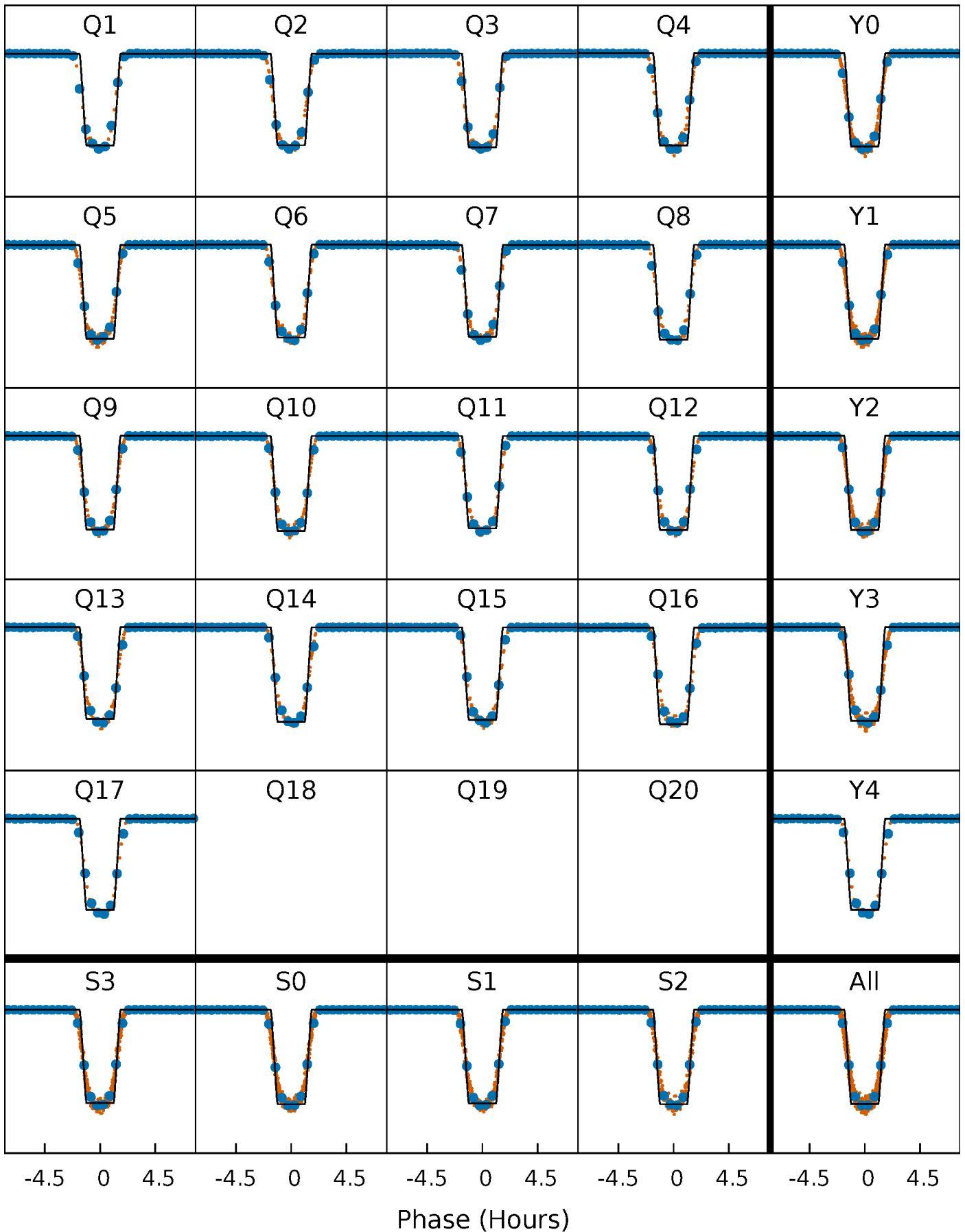
DV Quarter-Phased Transit Curves

TCE 009934208-01 P= 9.058488 Days $T_0=137.337885$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

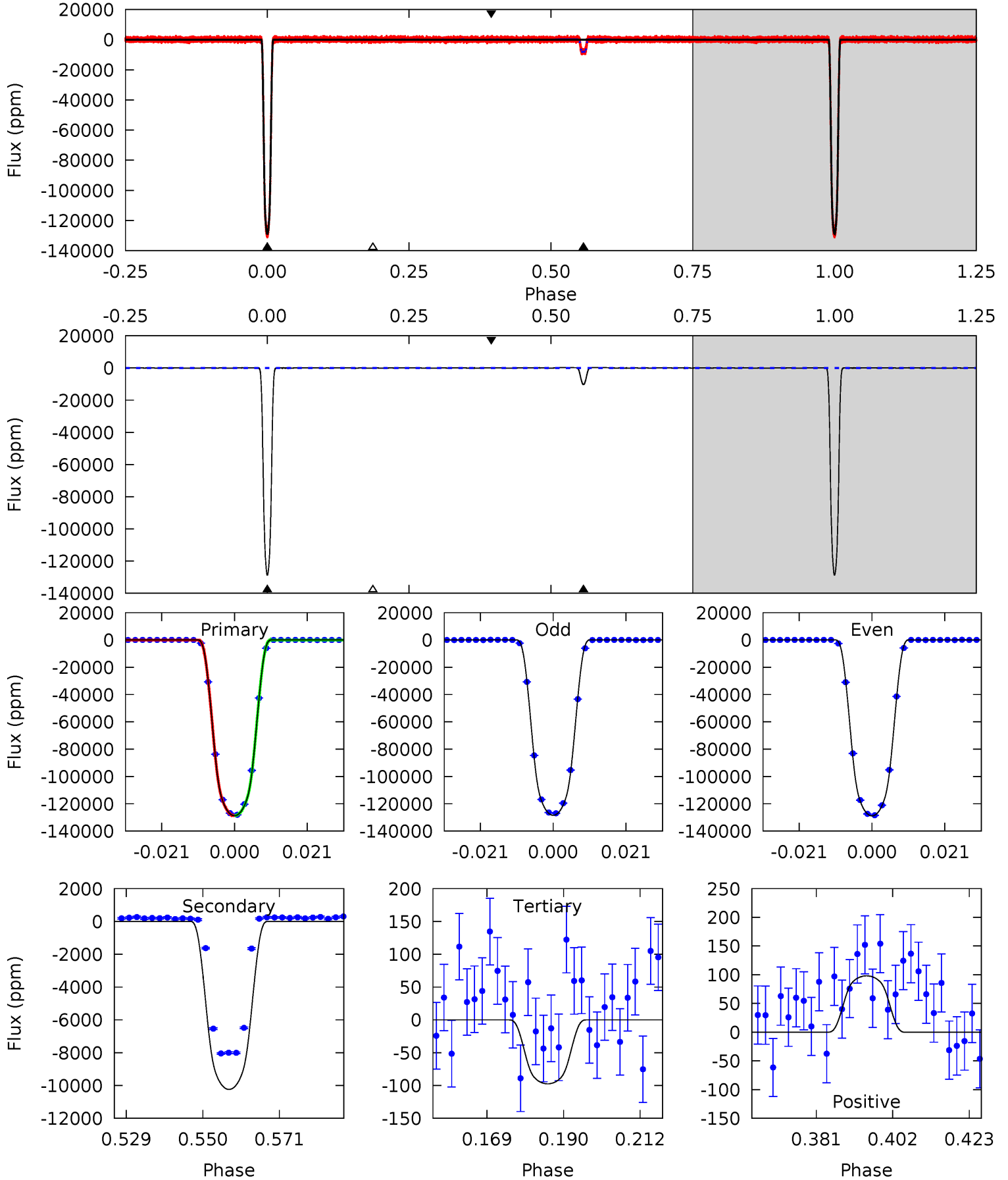
TCE 009934208-01 P= 9.058427 Days $T_0=137.342652$ (BKJD)



DV Model-Shift Uniqueness Test

009934208-01, P = 9.058488 Days, E = 128.279397 Days

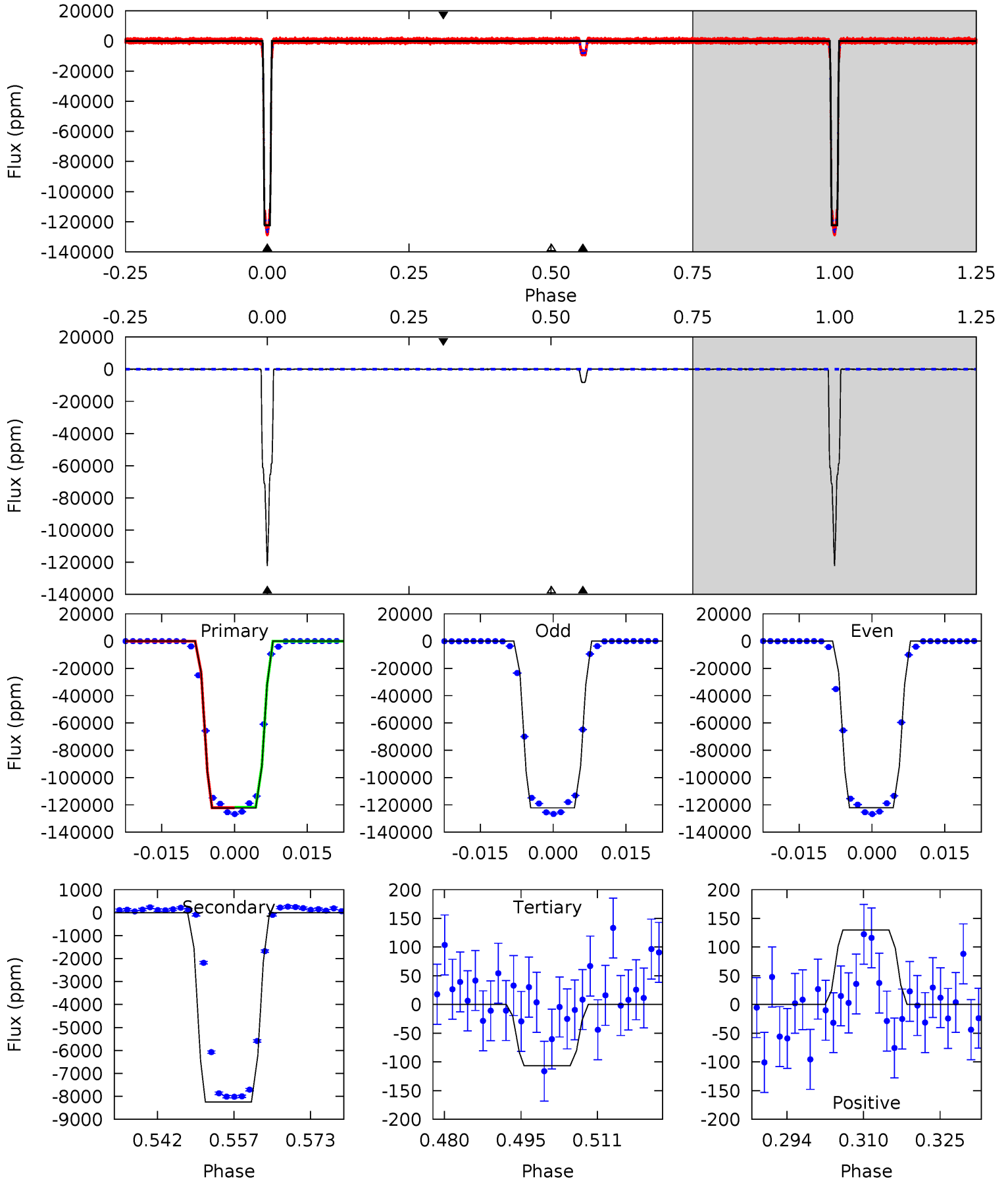
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6627	527.2	5.02	5.05	4.88	2.31	3.25	6621	6621	522.2	522.1	12.2	1.00	0.00	0



Alt Model-Shift Uniqueness Test

009934208-01, P = 9.058427 Days, E = 128.284225 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3545	239.2	3.09	3.76	4.94	2.42	1.16	3542	3541	236.1	235.4	2.35	1.00	0.00	0



Stellar Parameters For KIC 009934208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4340^{+131}_{-131}	$4.671^{+0.058}_{-0.027}$	$-0.560^{+0.300}_{-0.300}$	$0.573^{+0.045}_{-0.056}$	$0.561^{+0.058}_{-0.042}$	$4.203^{+1.048}_{-0.581}$
	+3%/-3%	+1%/-1%	+54%/-54%	+8%/-10%	+10%/-7%	+25%/-14%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009934208-01 / KOI 7256.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10241 ± 19	$20.05^{+0.94}_{-1.03}$	760^{+26}_{-27}	2987^{+68}_{-72}	71^{+6}_{-4}
Alt.	-8248 ± 34	$22.03^{+0.92}_{-1.15}$	760^{+29}_{-27}	2827^{+61}_{-62}	47^{+3}_{-3}

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

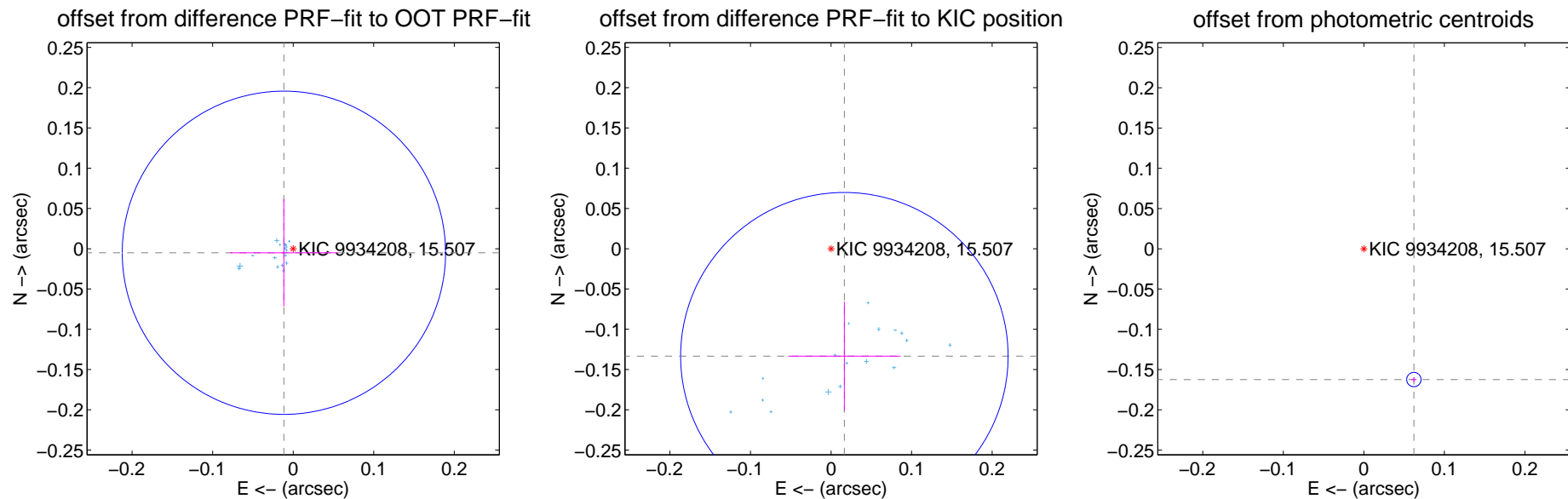
DV Centroid Data

Supplemental centroid analysis for 009934208-01. Kepler magnitude: 15.51. Transit SNR 2829.97

There are 17 quarters with good PRF difference image offsets

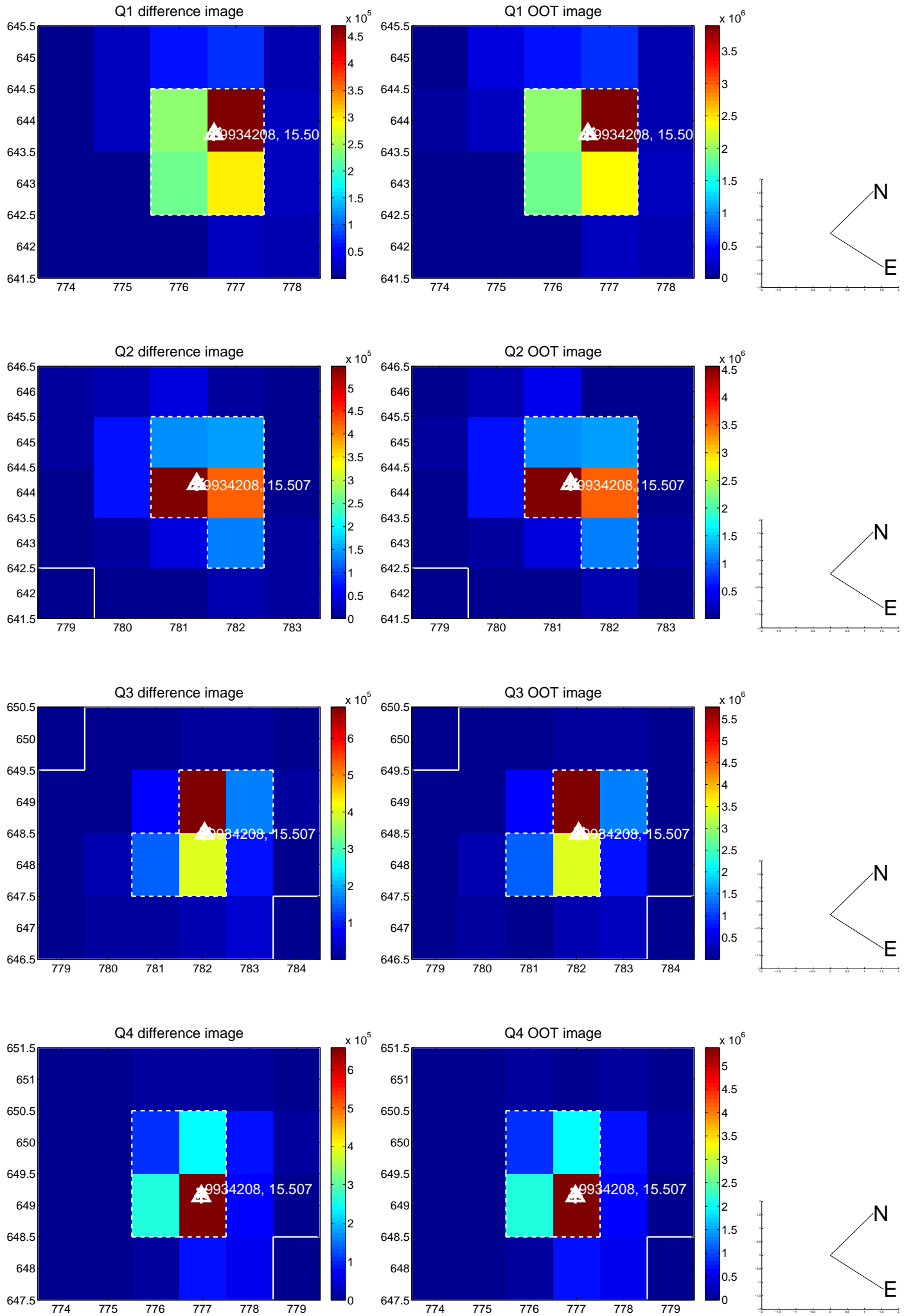
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.013 ± 0.067	0.19	0.012 ± 0.067	-0.005 ± 0.067
PRF-fit source offset from KIC position	0.134 ± 0.068	1.98	-0.017 ± 0.070	-0.133 ± 0.068
photometric centroid source offset	0.17 ± 0.00	58.56	-0.06 ± 0.00	-0.16 ± 0.00

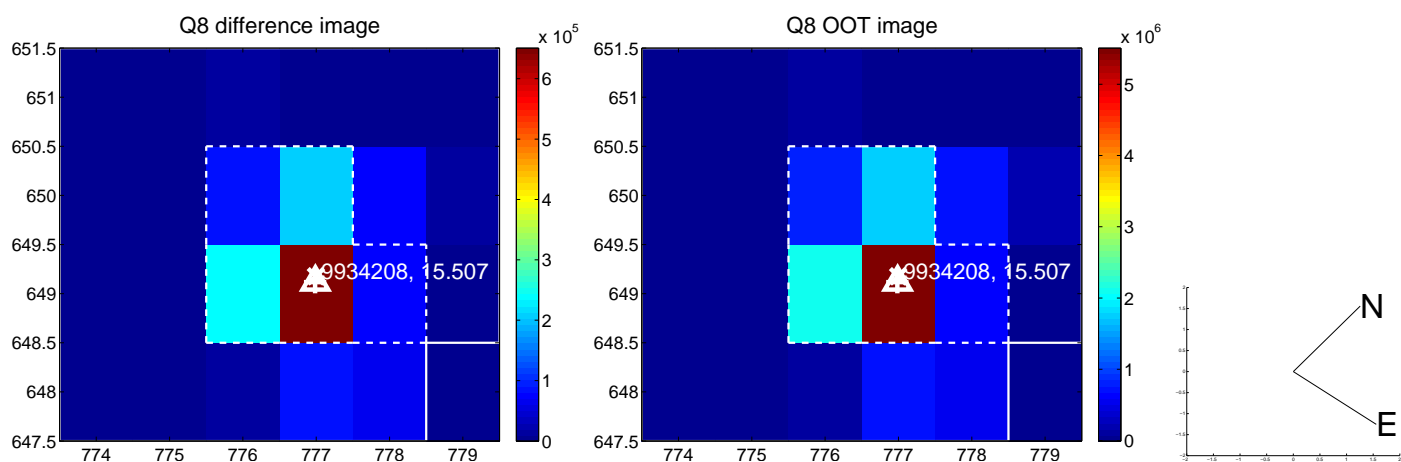
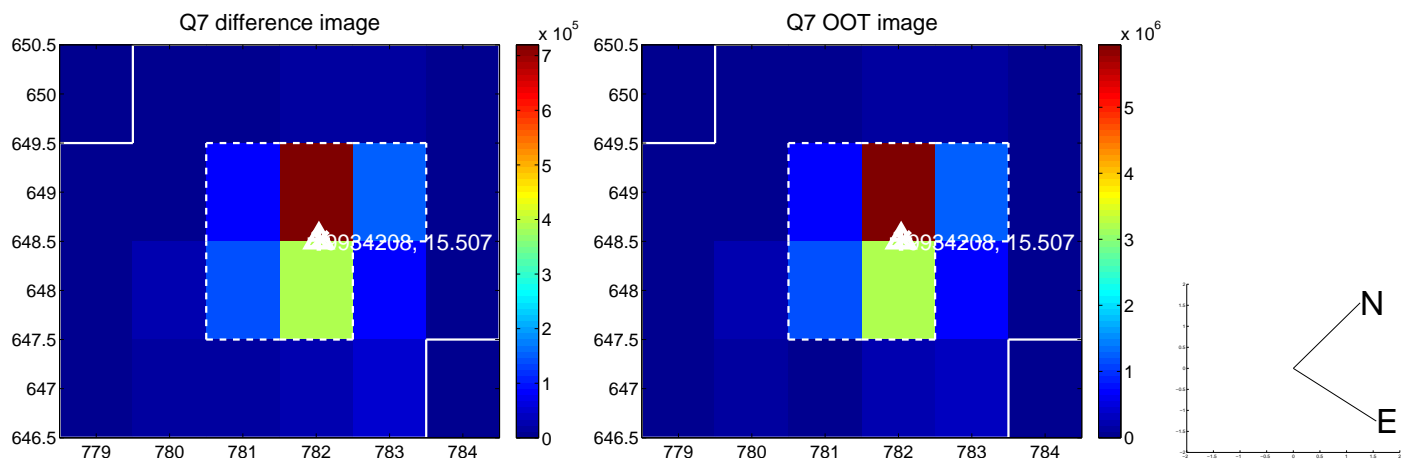
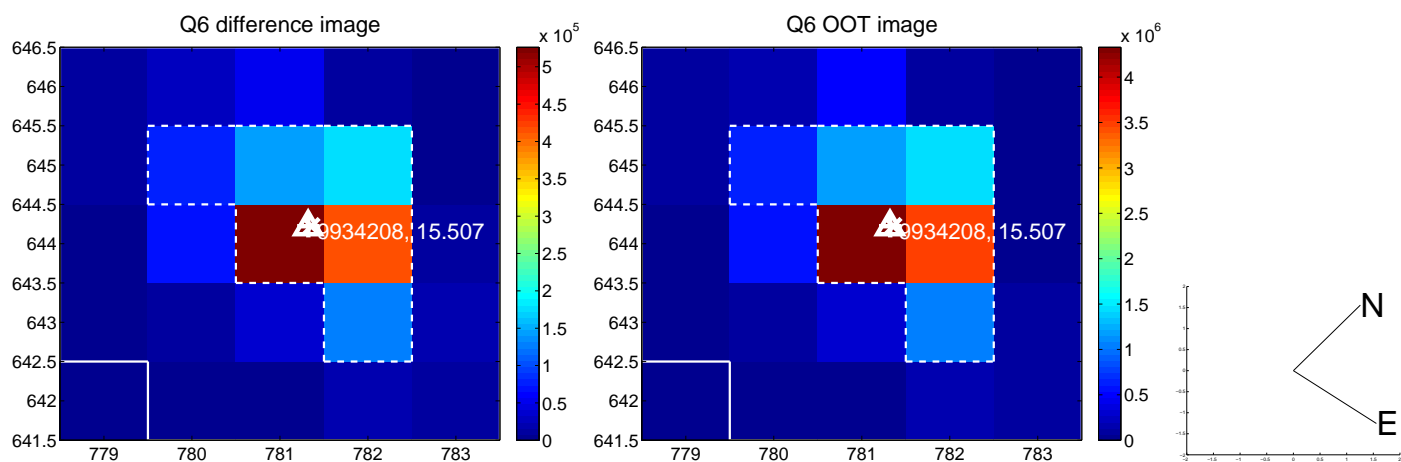
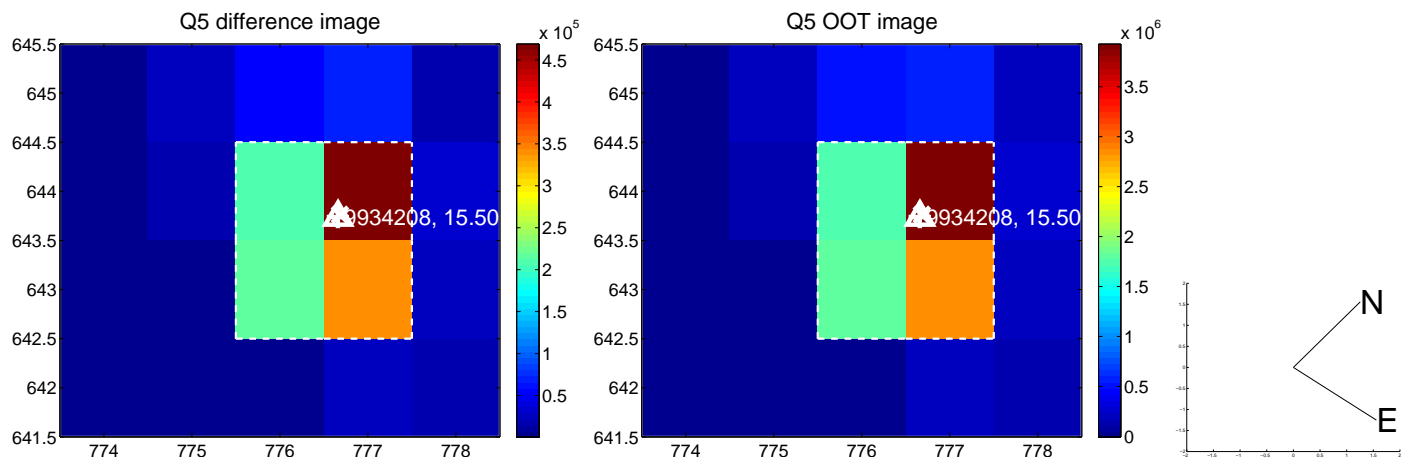


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

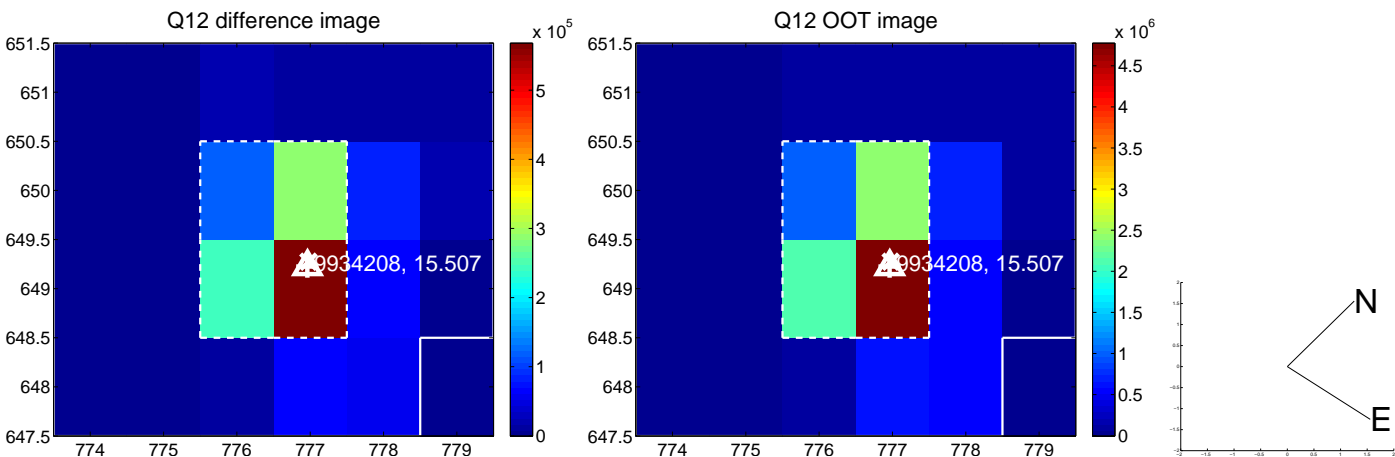
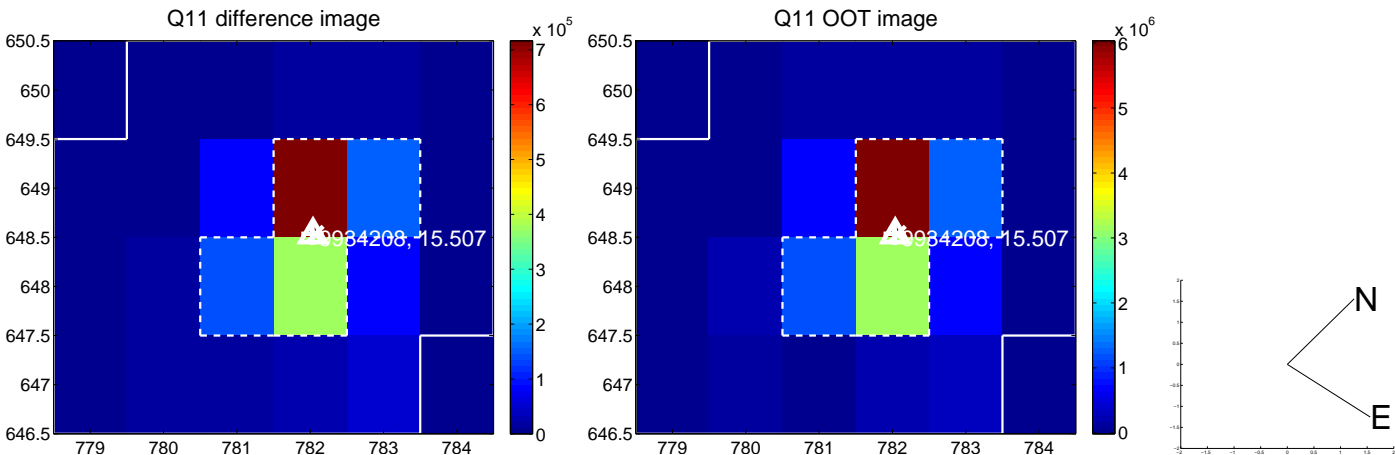
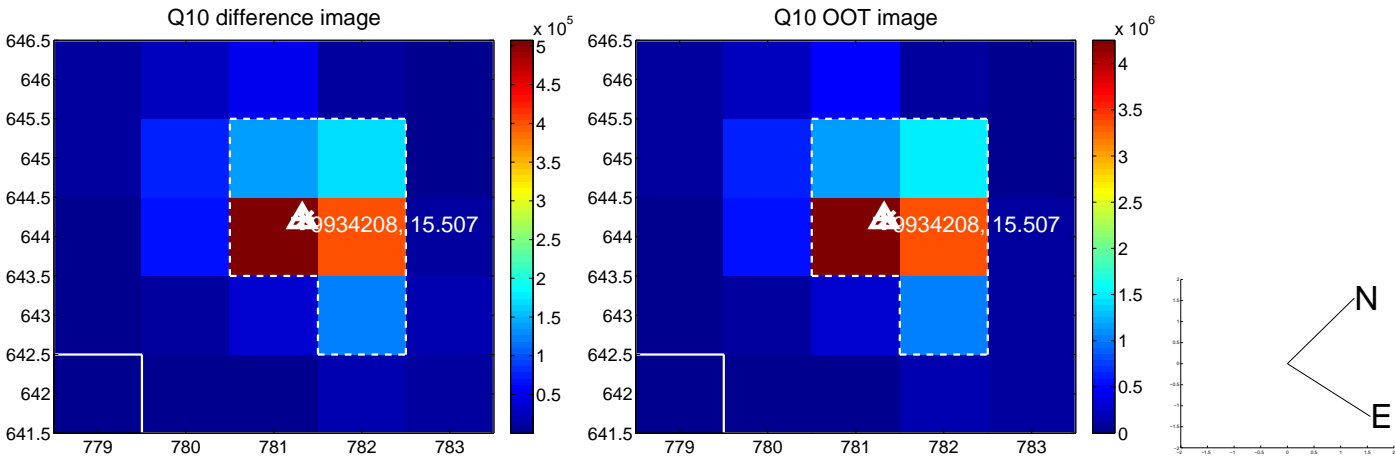
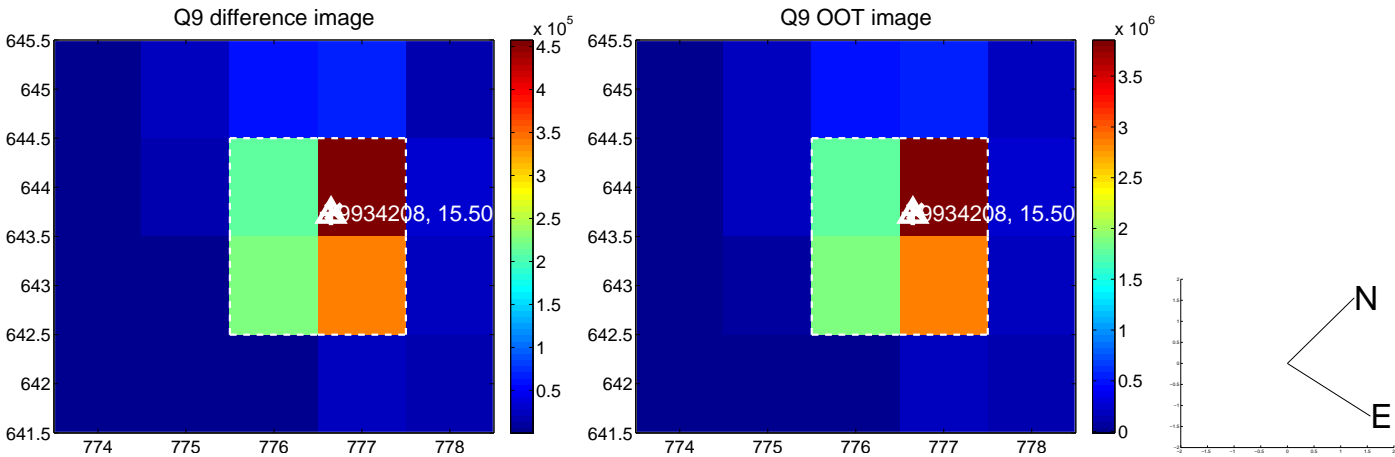
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



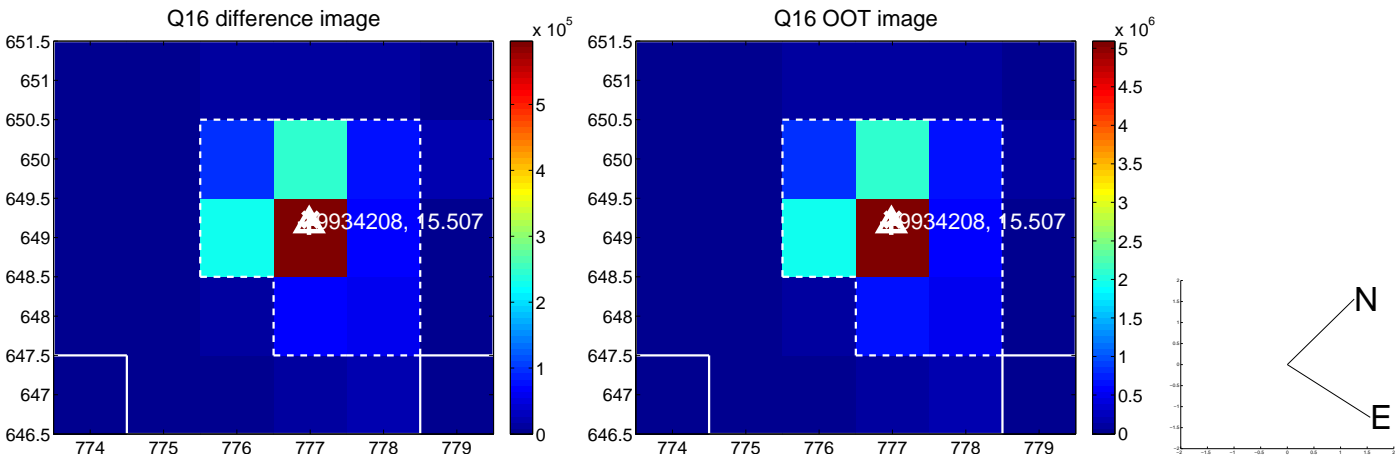
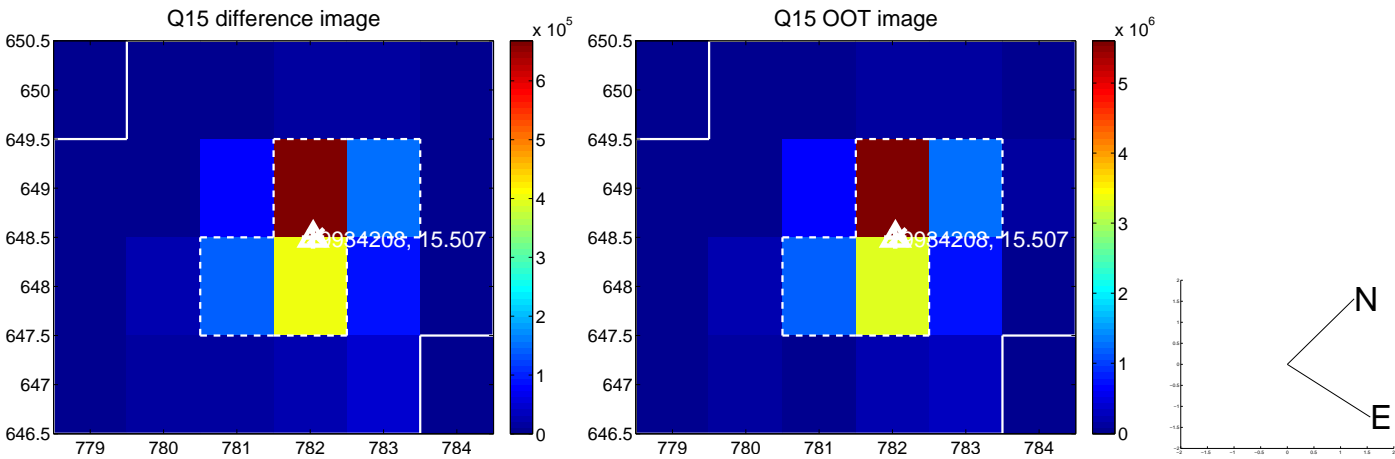
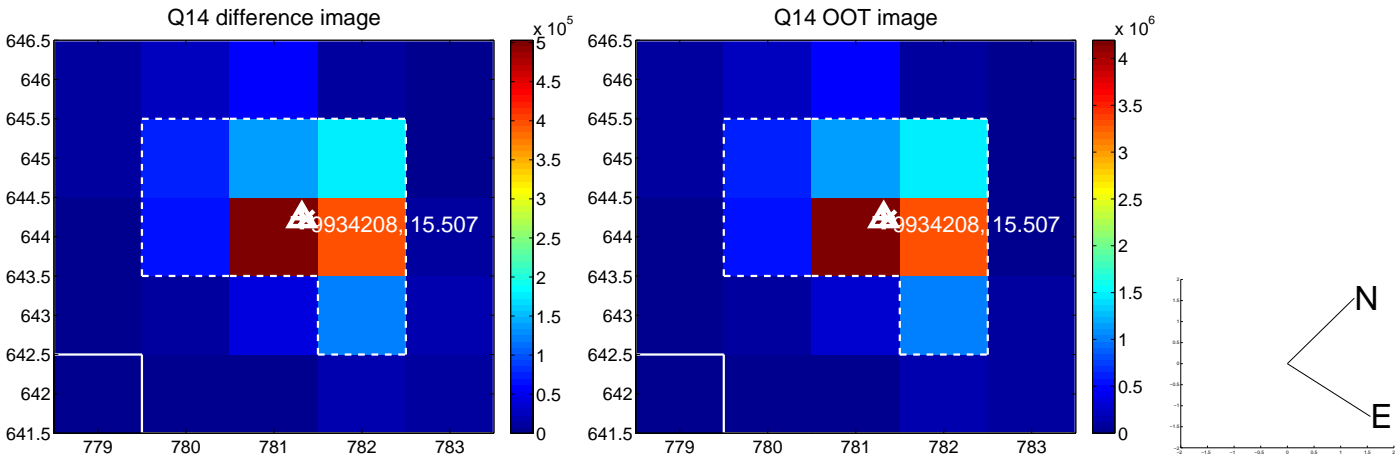
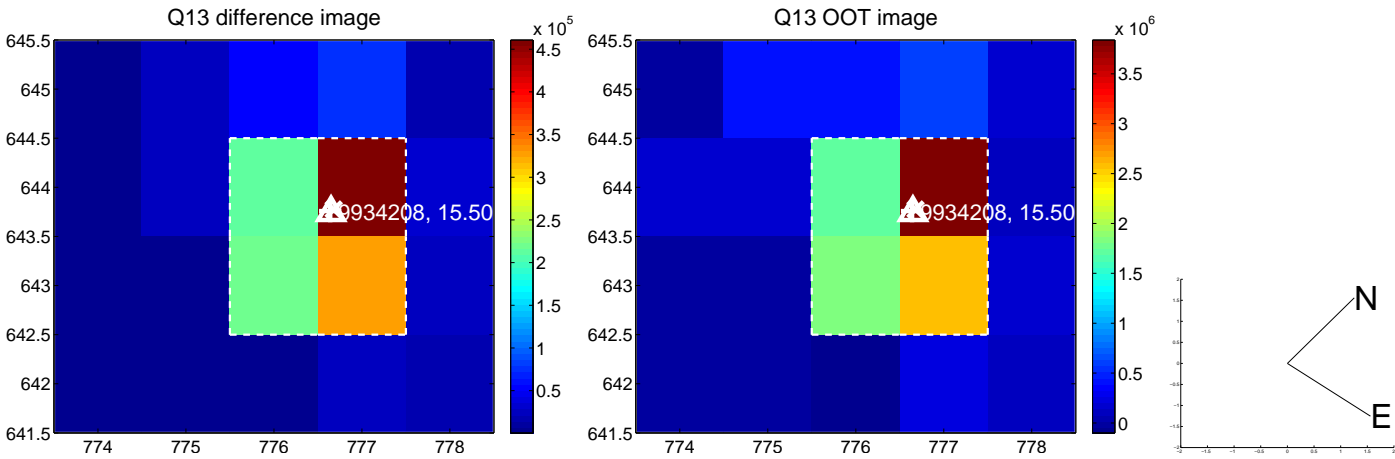
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



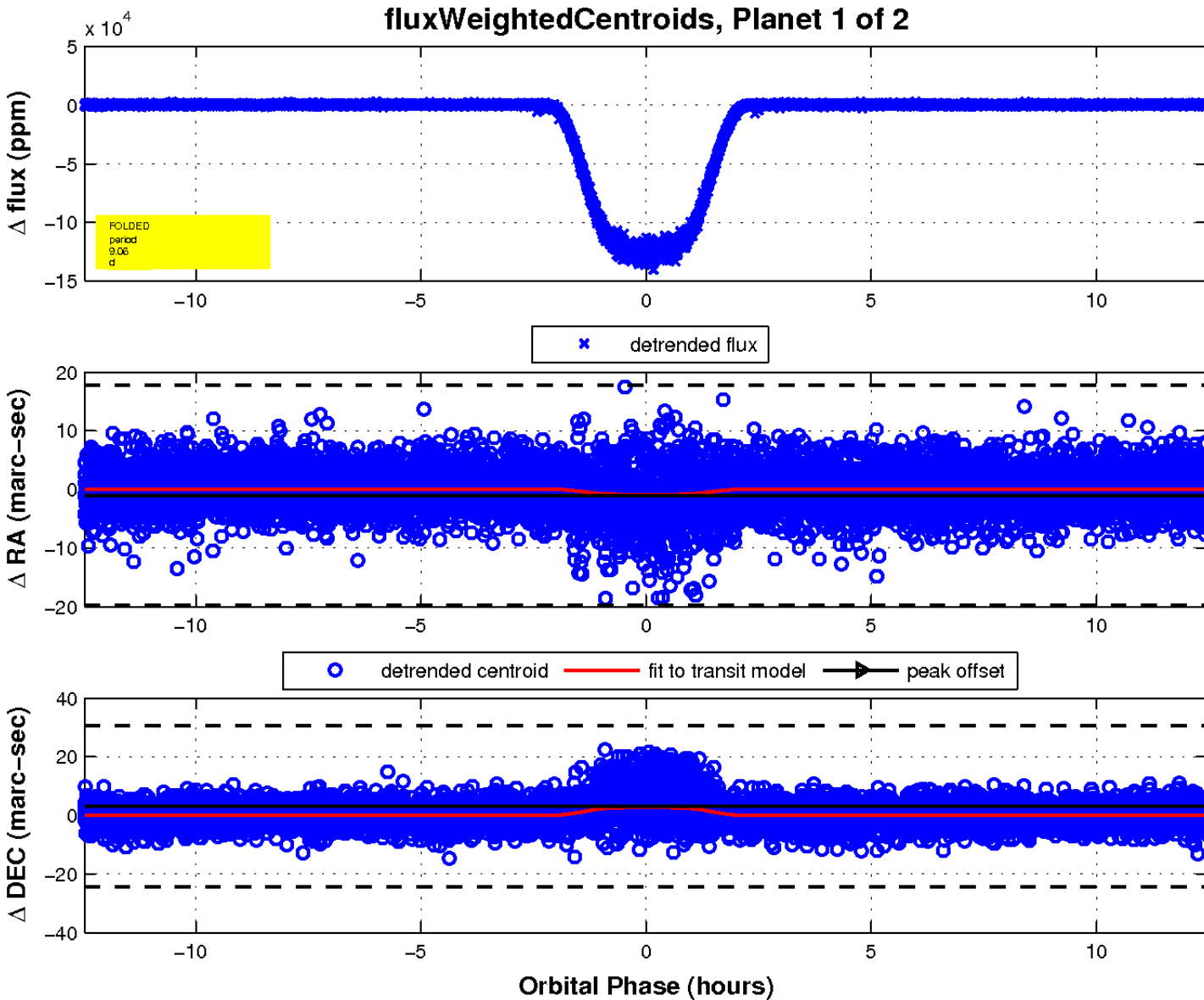
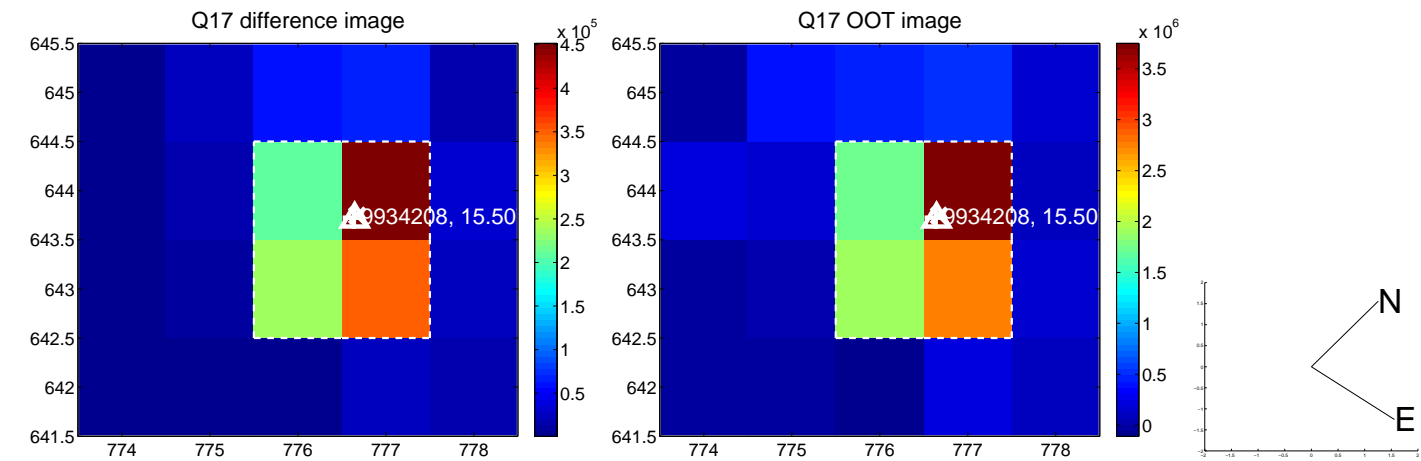
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

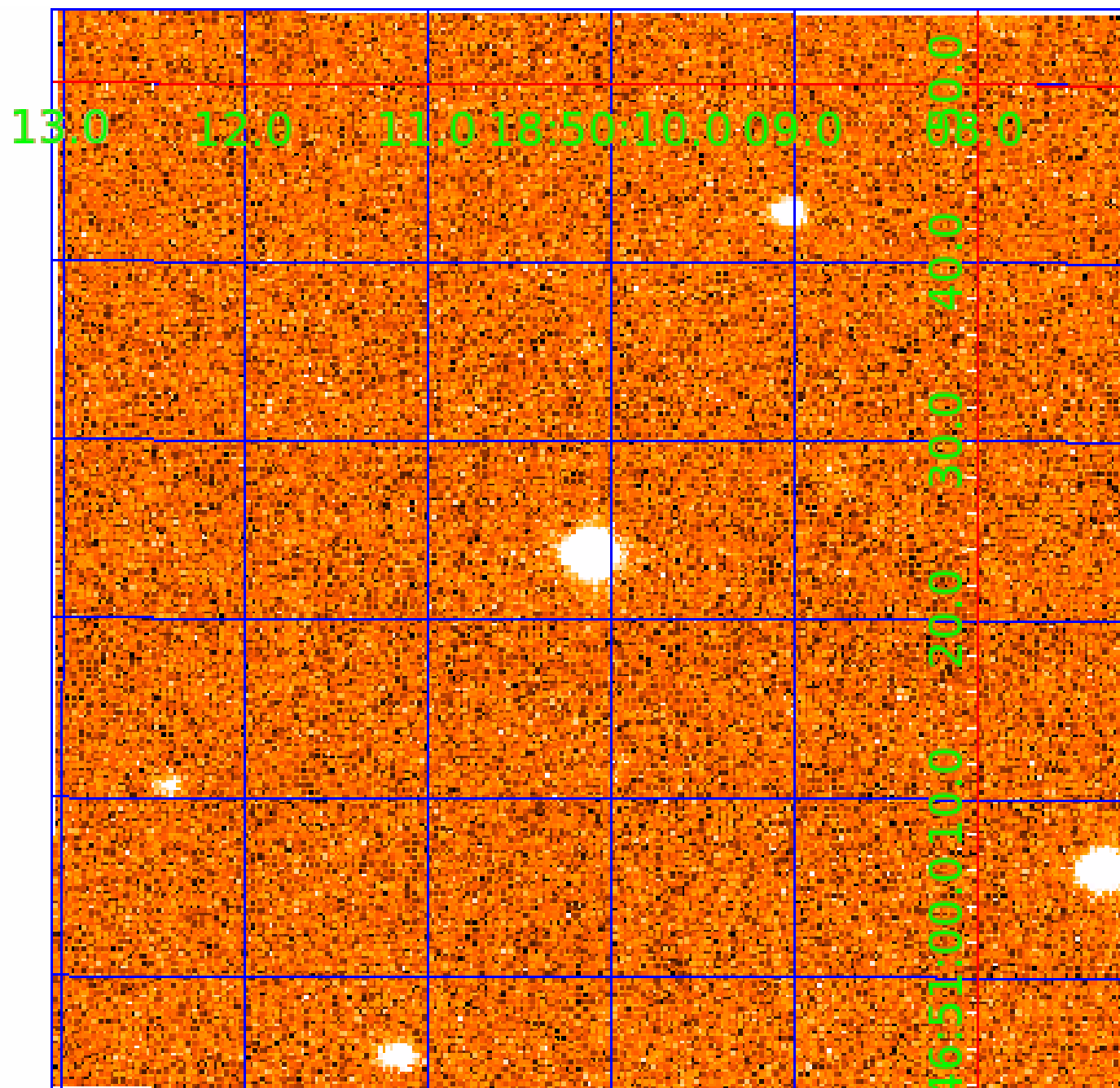


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009934208

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})
009934208-01	OBS	7256.01	9.058488	137.337885	128702.8	4.158	4269.8	2830.0	0.57	4340	20.11	21.19
009934208-02	OBS	No	9.058492	133.327663	8586.0	3.047	286.2	271.0	0.57	4340	5.76	21.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009934208-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—HAS_SEC_TCE
009934208-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

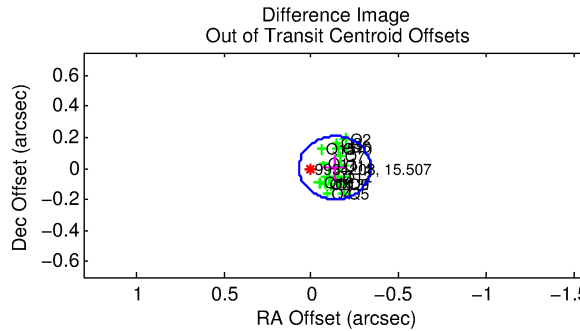
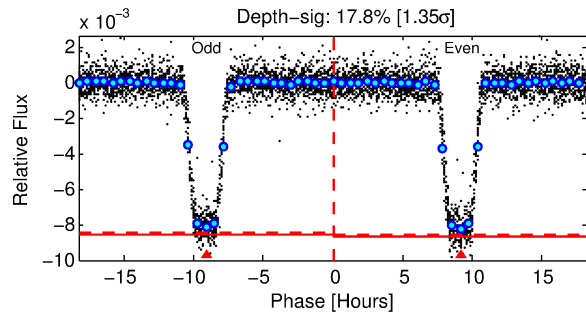
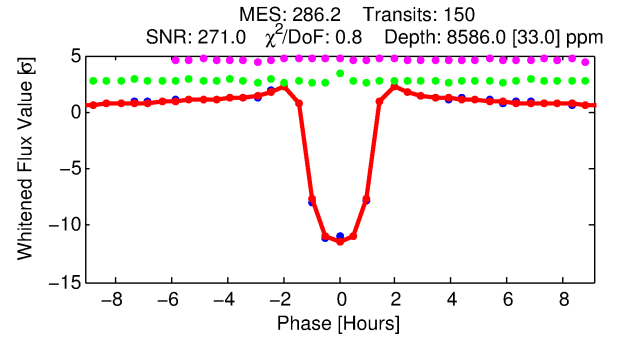
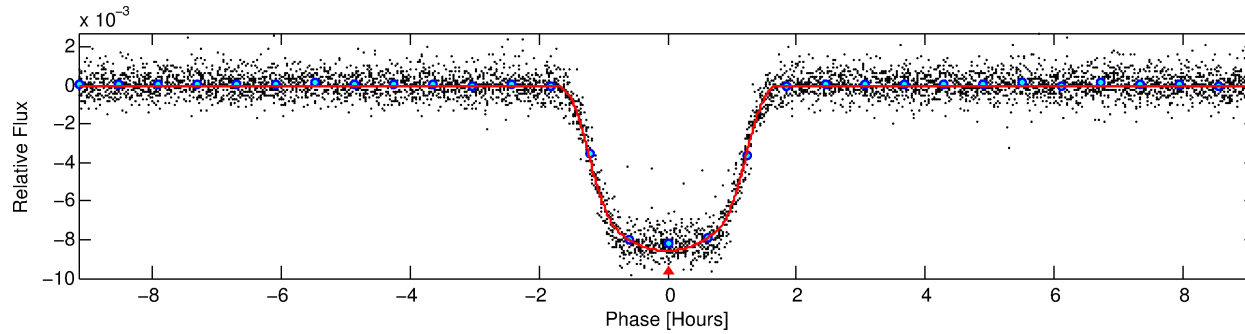
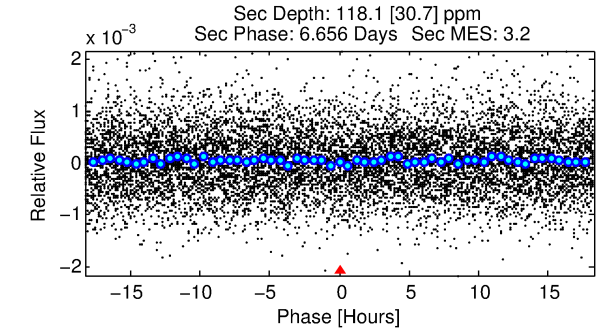
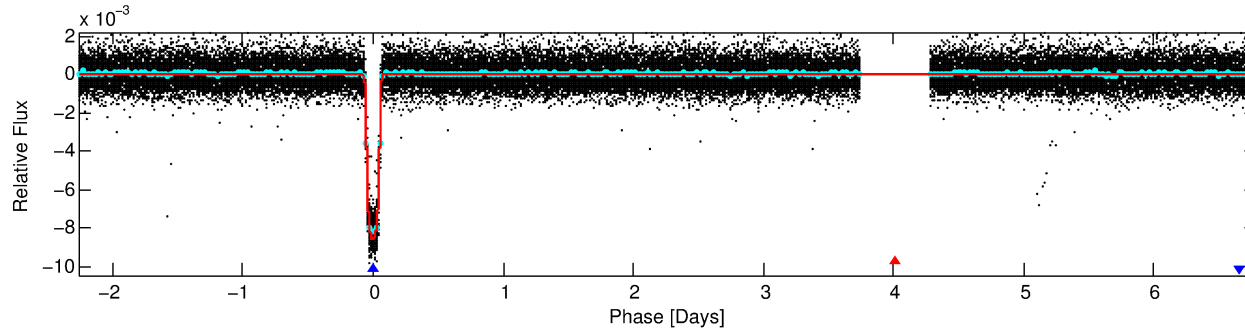
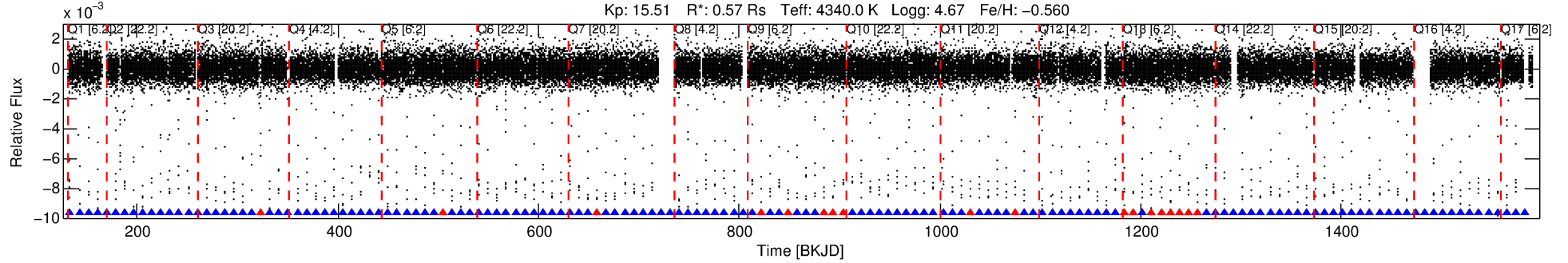
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009934208-02

No Significant Match Found

DV One-Page Summary

KIC: 9934208 Candidate: 2 of 2 Period: 9.058 d
KOI: K07256 Corr: No Ephemeris Match



DV Fit Results:

Period = 9.05849 [0.00000] d
Epoch = 133.3277 [0.0002] BKJD
Rp/R* = 0.0921 [0.0008]
a/R* = 18.45 [0.49]
b = 0.73 [0.02]
Seff = 21.19 [3.47]
Teq = 547 [22] K
Rp = 5.76 [0.56] Re
a = 0.0702 [0.0055] AU
Ag = 9.65 [2.73] [3.17 σ]
Teffp = 1491 [107] K [8.63 σ]

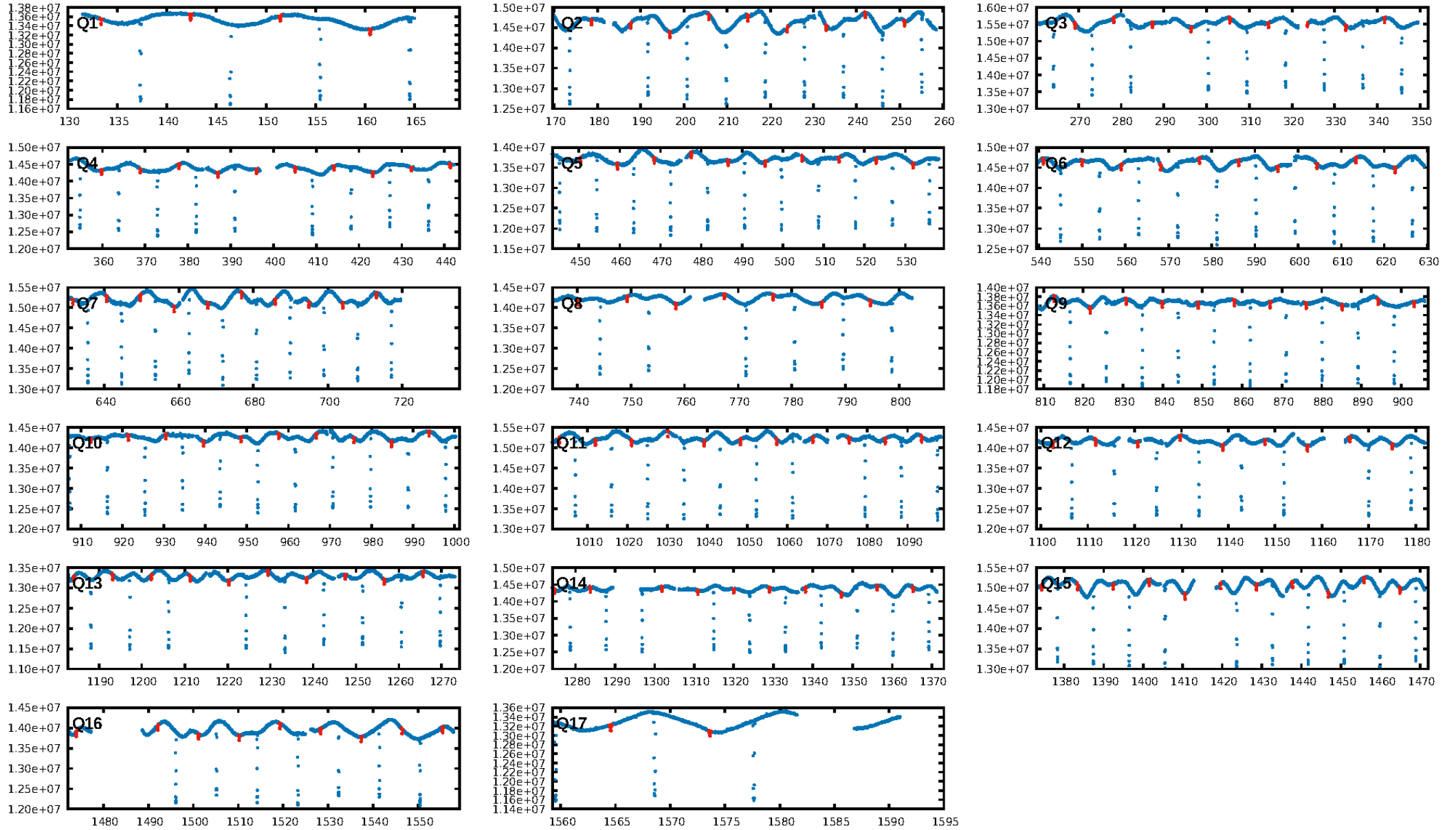
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.88 [126/144]
GhostDiagnostic-chr: 3.993
Centroid-sig: 0.0%
Centroid-so: 0.324 arcsec [6.74 σ]
OotOffset-rm: 0.133 arcsec [1.96 σ]
KicOffset-rm: 0.235 arcsec [3.26 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

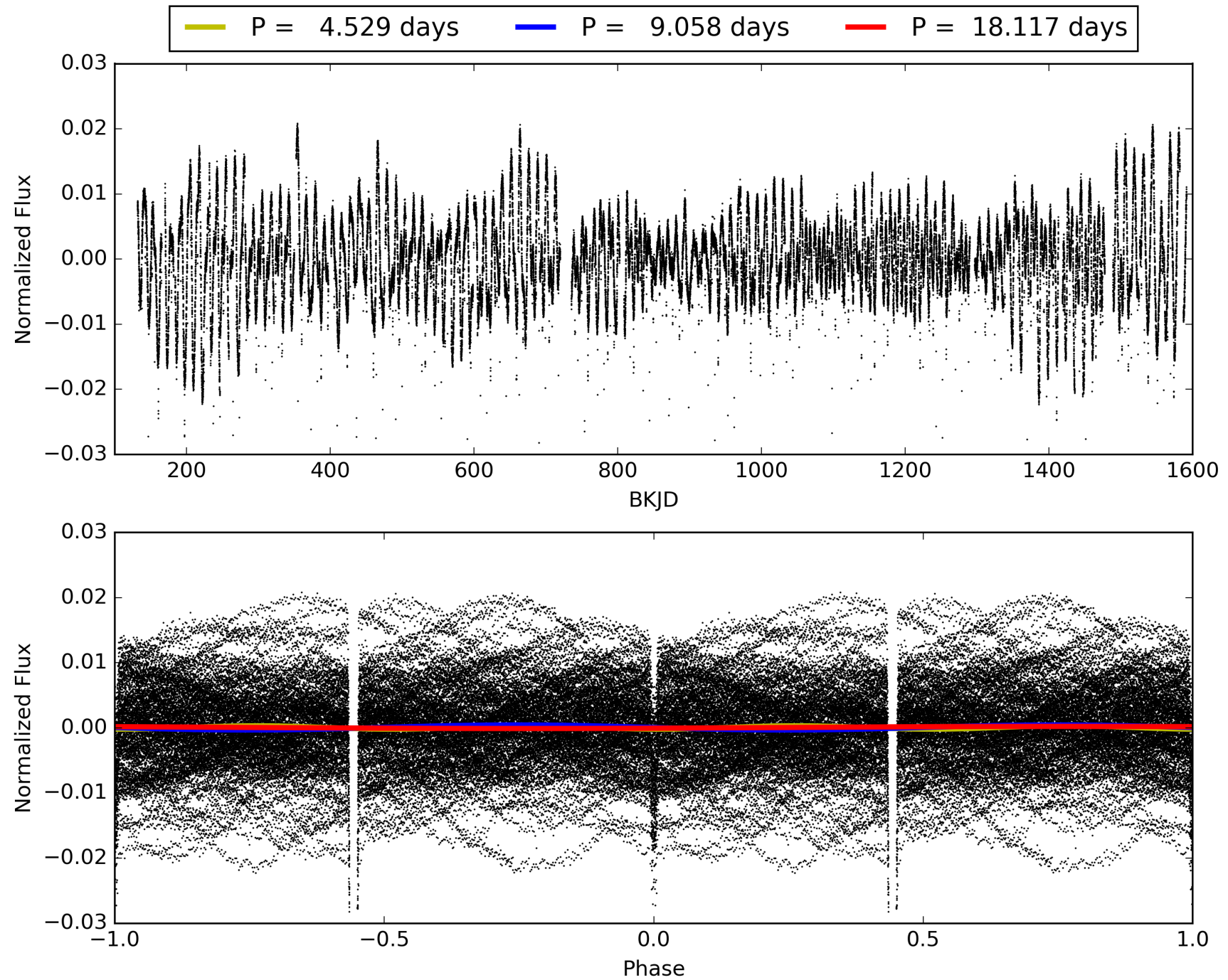
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:17:29 Z

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

TCE 009934208-02, PDC Light Curves

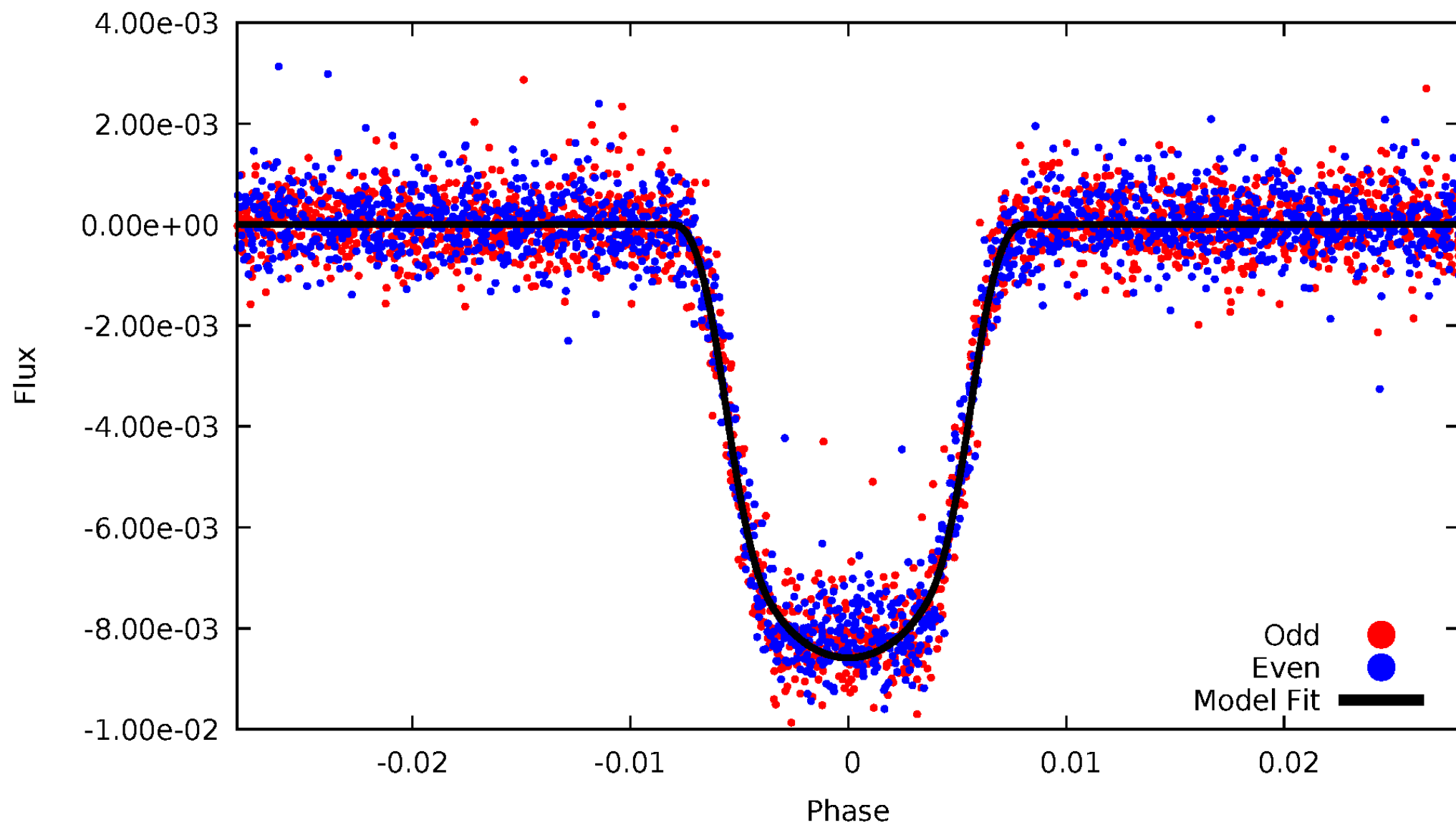


TCE 009934208-02



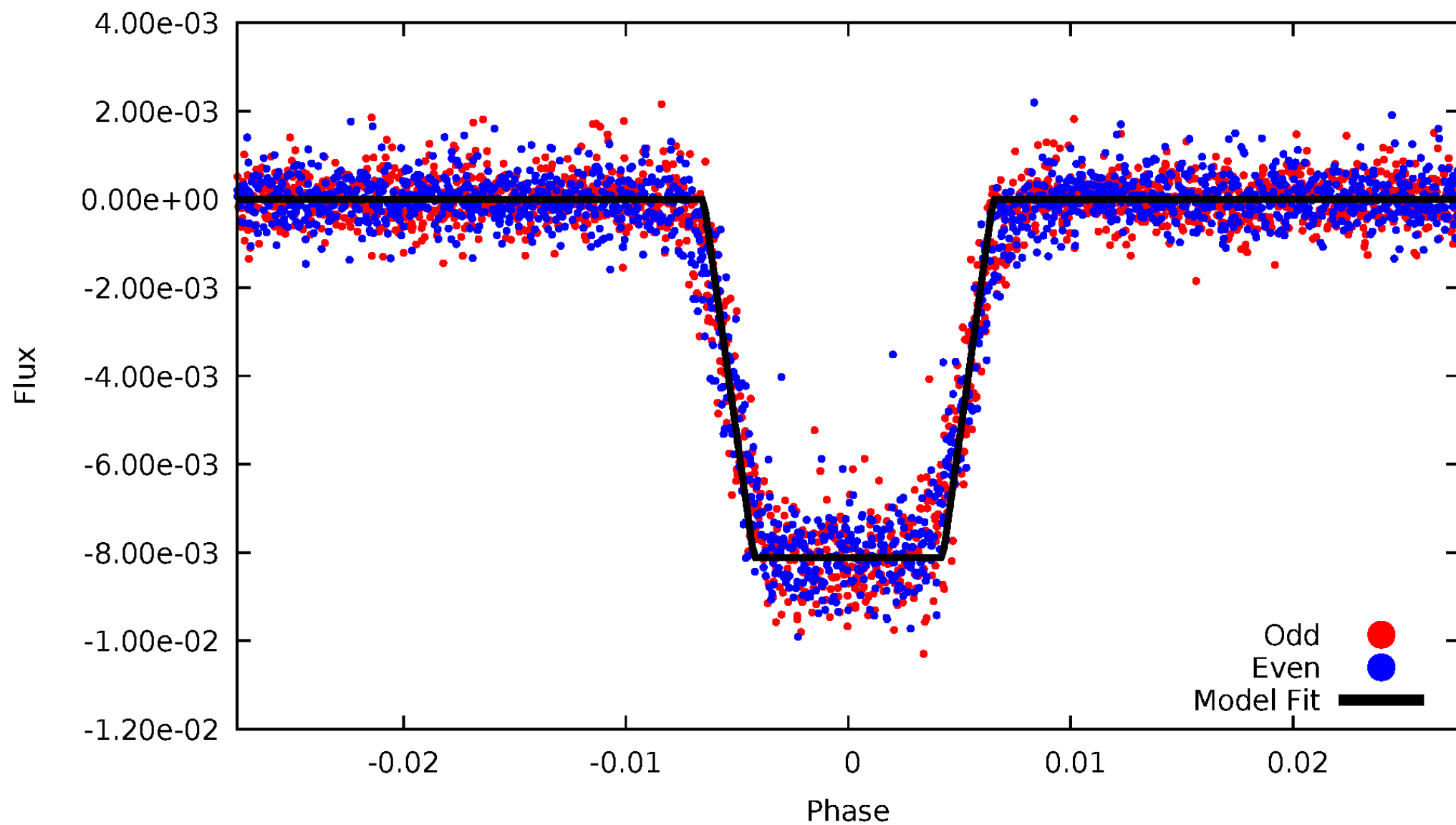
DV Odd/Even

TCE 009934208-02



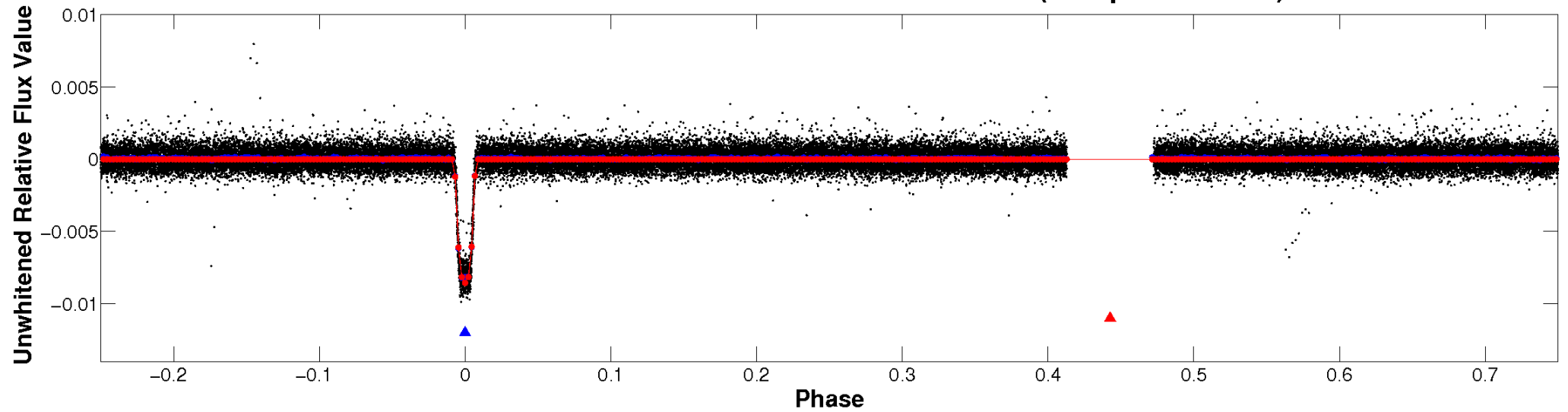
ALT Odd/Even

TCE 009934208-02

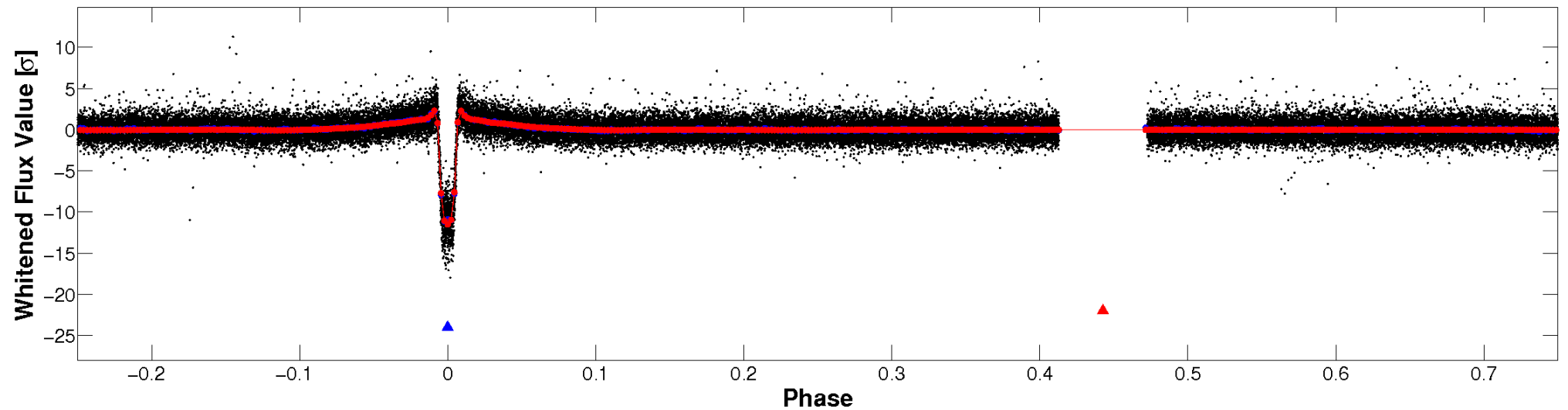


Non-Whitened Vs. Whitened Light Curve

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

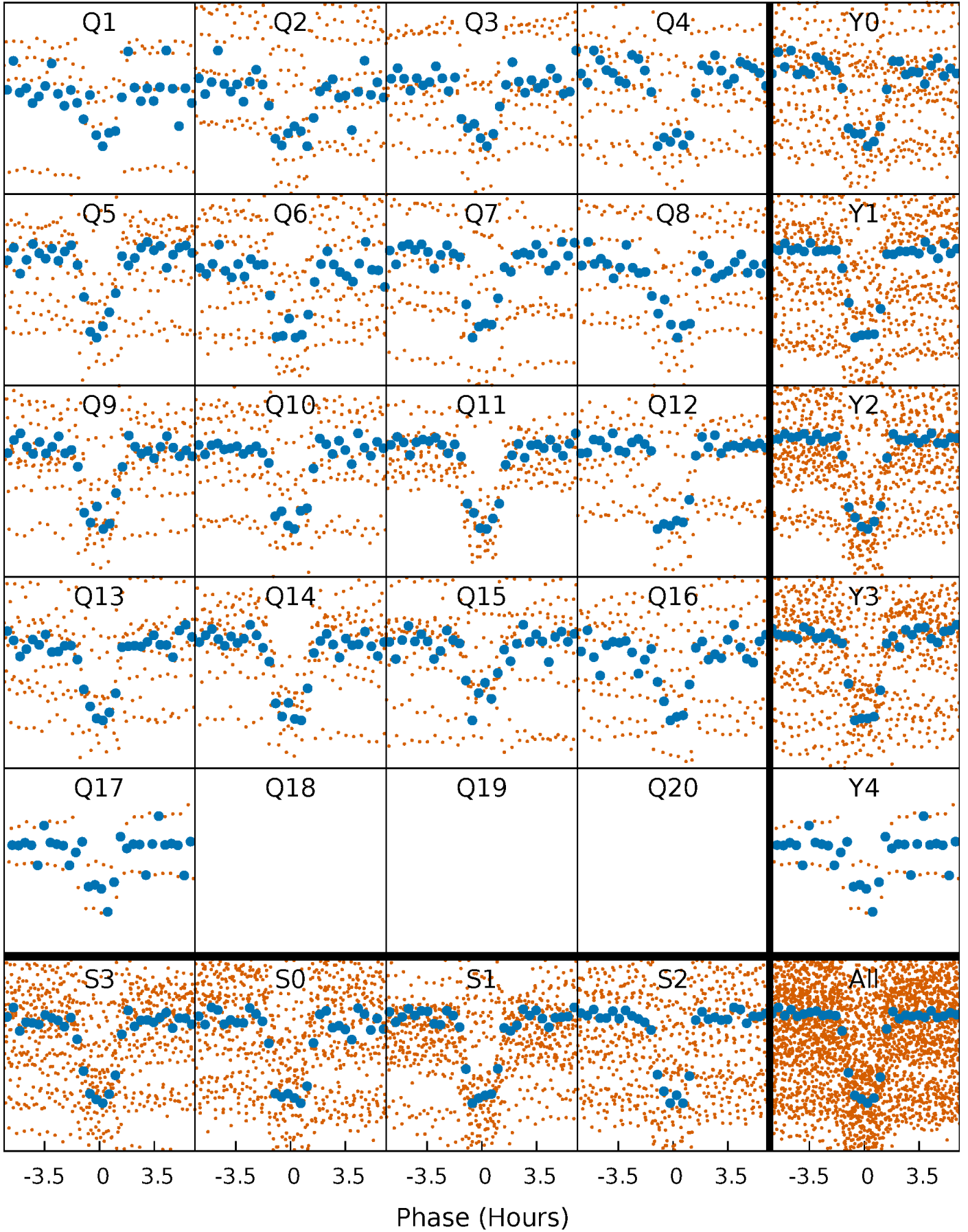


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



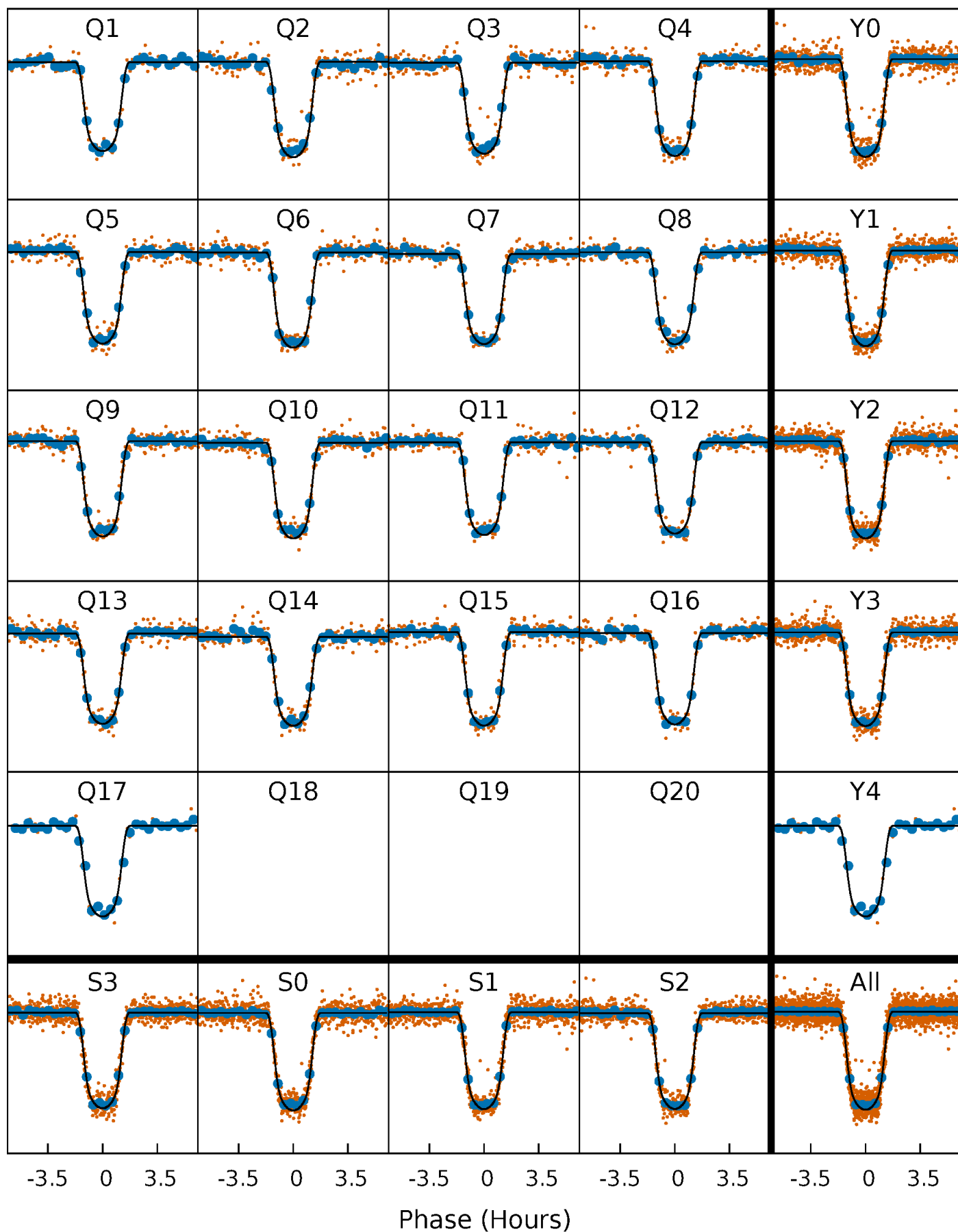
PDC Quarter-Phased Transit Curves

TCE 009934208-02 P= 9.058492 Days $T_0=133.327663$ (BKJD)



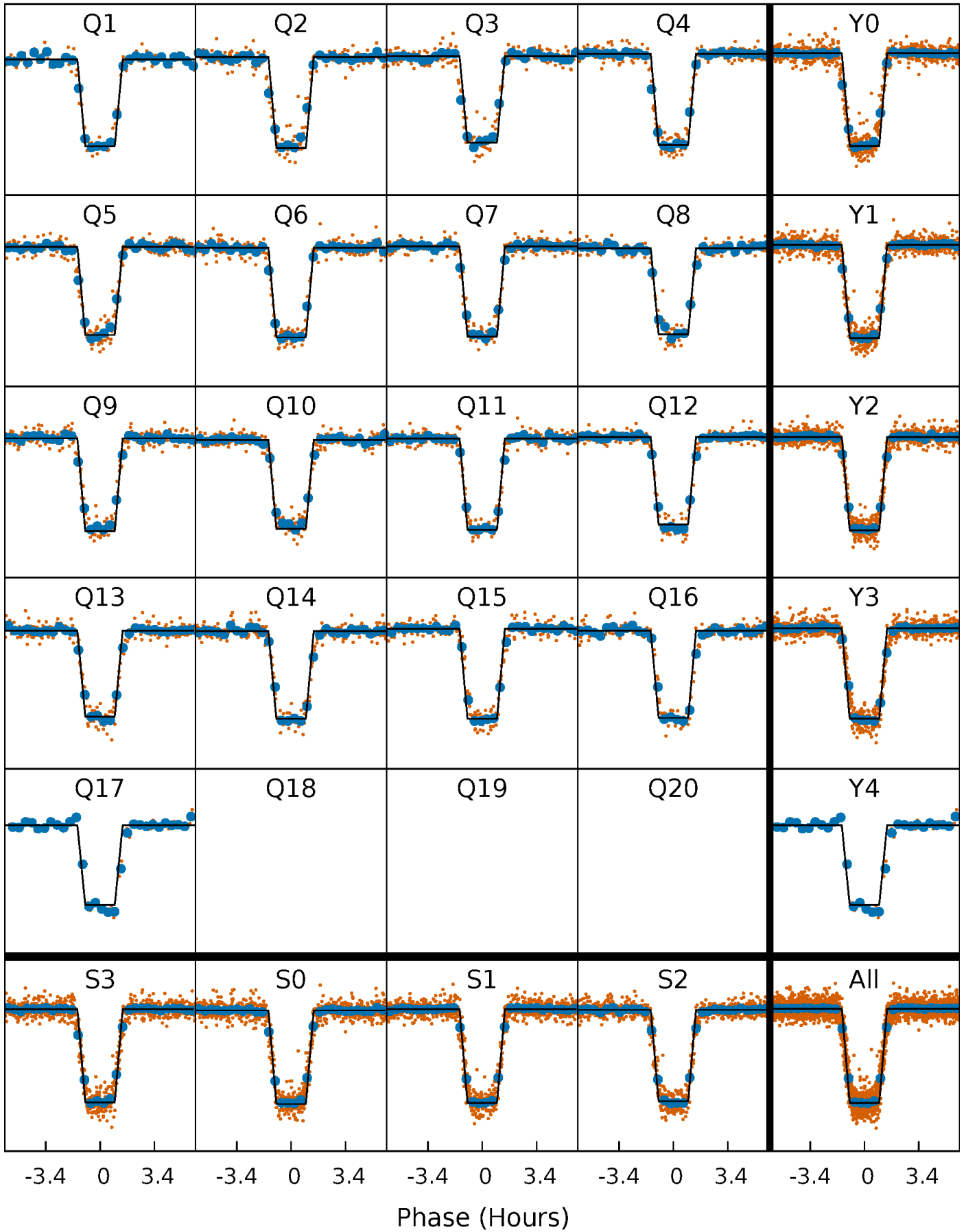
DV Quarter-Phased Transit Curves

TCE 009934208-02 P= 9.058492 Days $T_0=133.327663$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

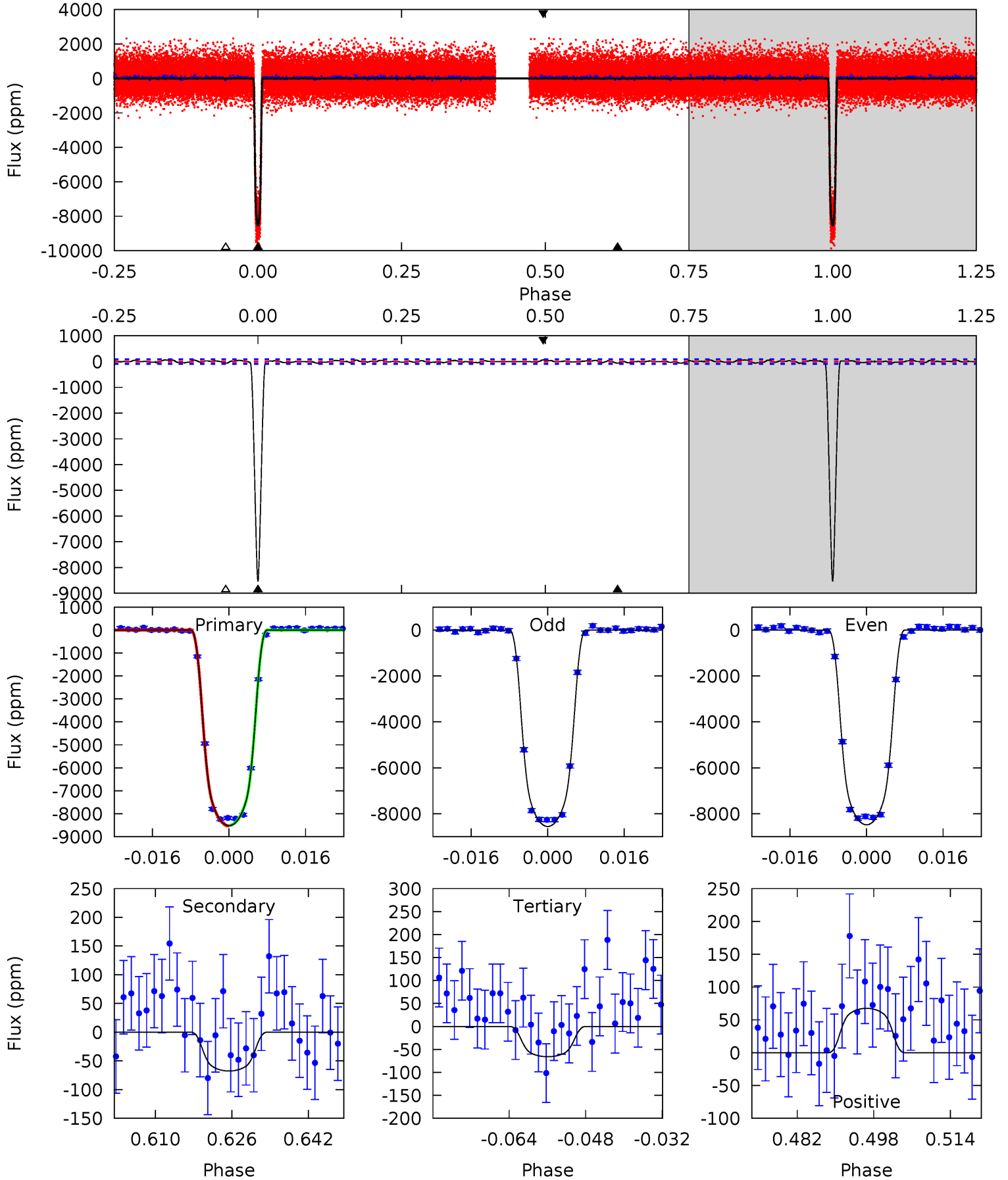
TCE 009934208-02 $P = 9.058434$ Days $T_0 = 133.332393$ (BKJD)



DV Model-Shift Uniqueness Test

009934208-02, P = 9.058492 Days, E = 124.269171 Days

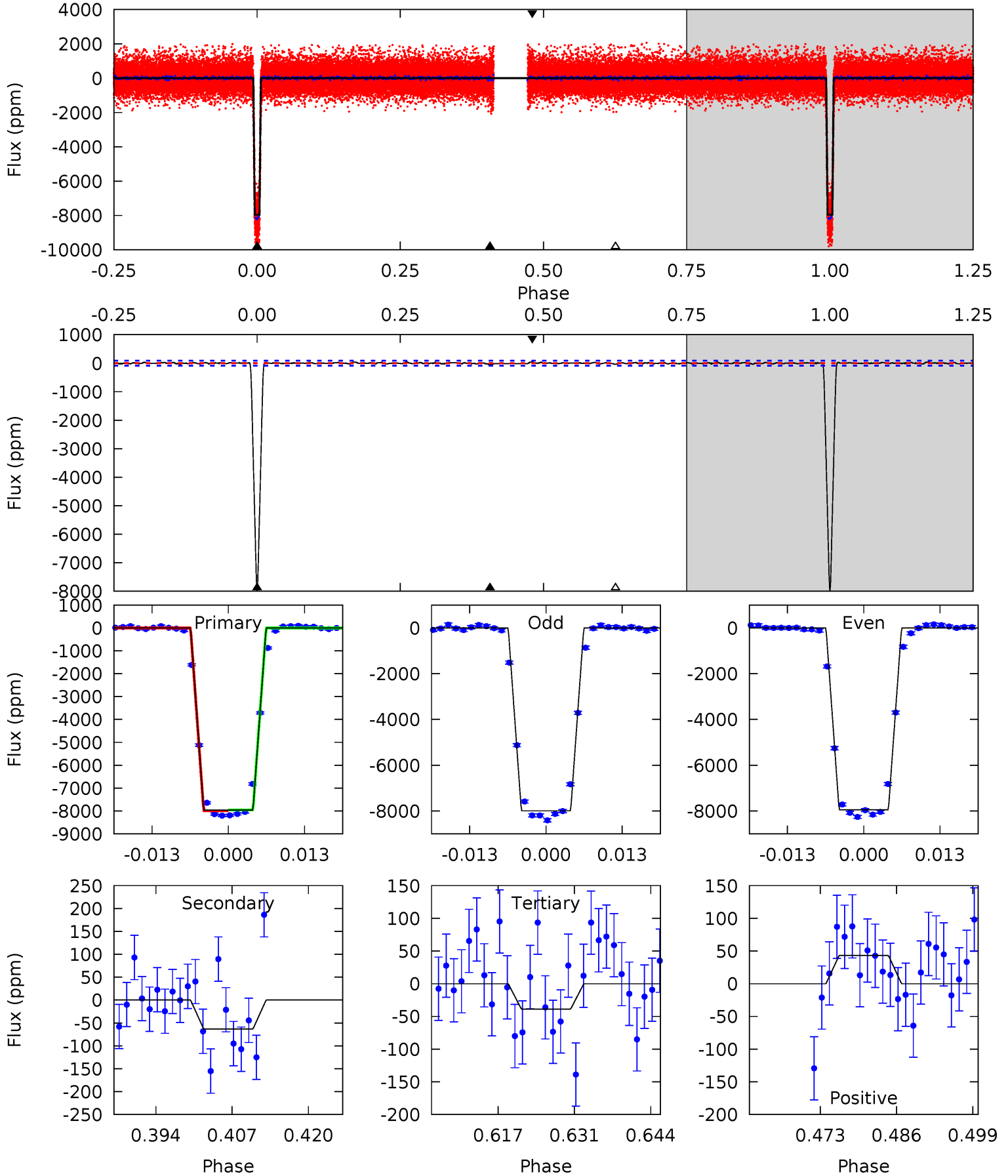
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
479.1	3.80	3.71	3.80	4.93	2.41	1.53	475.4	475.3	0.10	0.00	2.05	0.99	0.01	0.69



Alt Model-Shift Uniqueness Test

009934208-02, P = 9.058434 Days, E = 124.273959 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
460.8	3.66	2.24	2.50	4.97	2.48	0.79	458.5	458.3	1.41	1.16	1.44	1.00	0.01	1.14



Stellar Parameters For KIC 009934208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4340^{+131}_{-131}	$4.671^{+0.058}_{-0.027}$	$-0.560^{+0.300}_{-0.300}$	$0.573^{+0.045}_{-0.056}$	$0.561^{+0.058}_{-0.042}$	$4.203^{+1.048}_{-0.581}$
	+3%/-3%	+1%/-1%	+54%/-54%	+8%/-10%	+10%/-7%	+25%/-14%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009934208-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-68 ± 18	$5.72^{+0.28}_{-0.29}$	761^{+25}_{-27}	2170^{+71}_{-83}	$5.586^{+1.610}_{-1.449}$
Alt.	-63 ± 17	$5.61^{+0.28}_{-0.30}$	760^{+26}_{-26}	2164^{+75}_{-81}	$5.556^{+1.625}_{-1.563}$

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 $A_{obs} \gg 1.0$

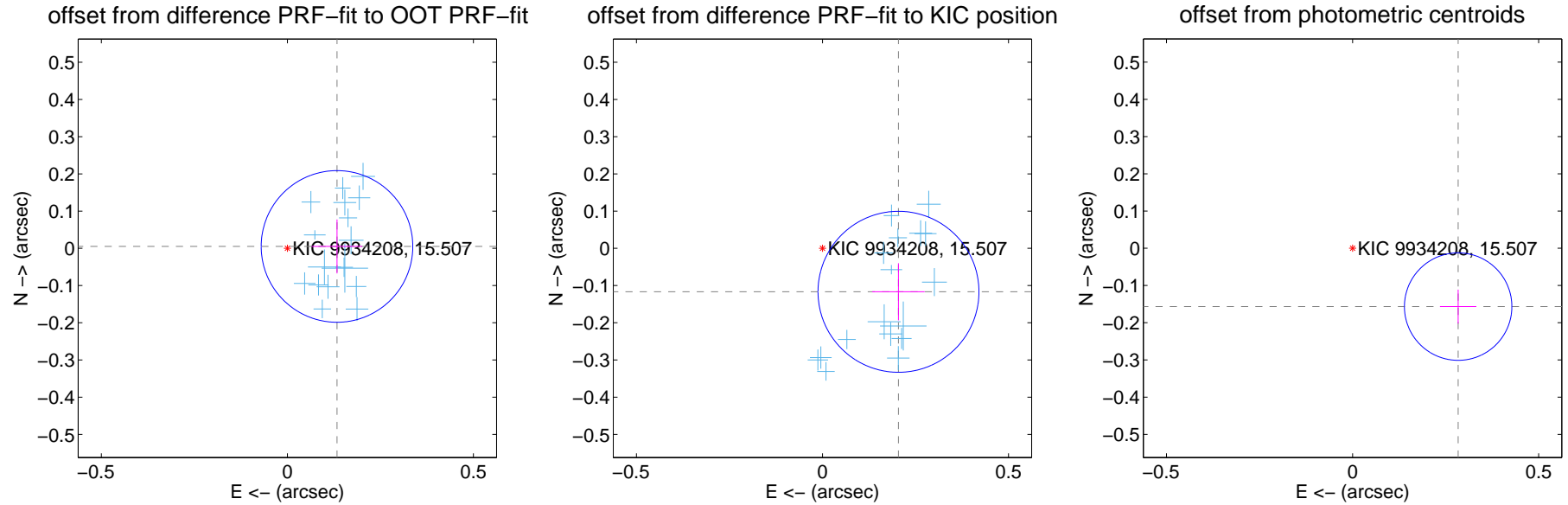
DV Centroid Data

Supplemental centroid analysis for 009934208-02. Kepler magnitude: 15.51. Transit SNR 270.99

There are 17 quarters with good PRF difference image offsets

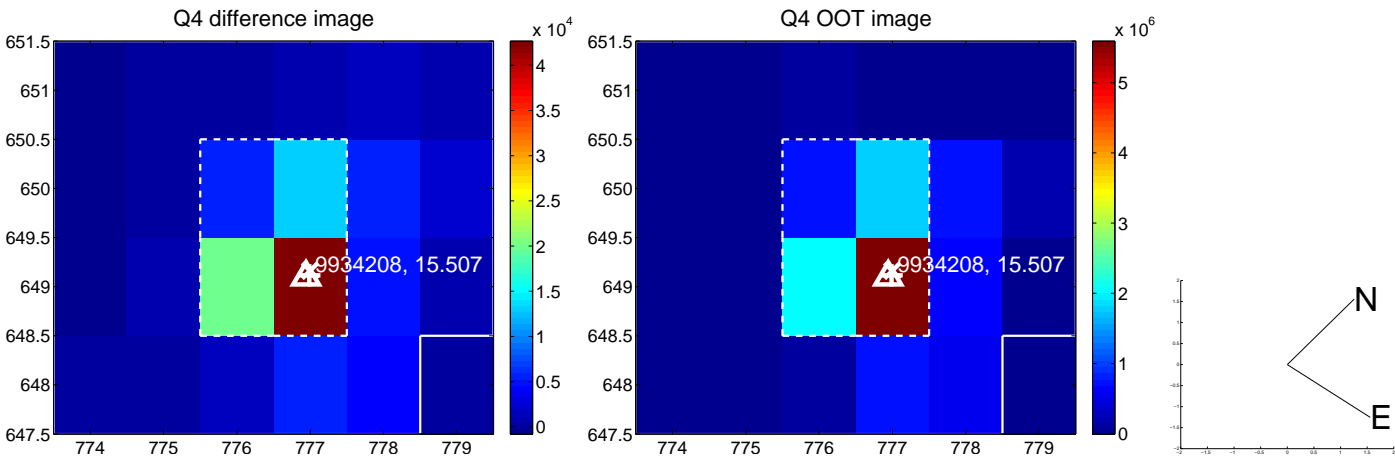
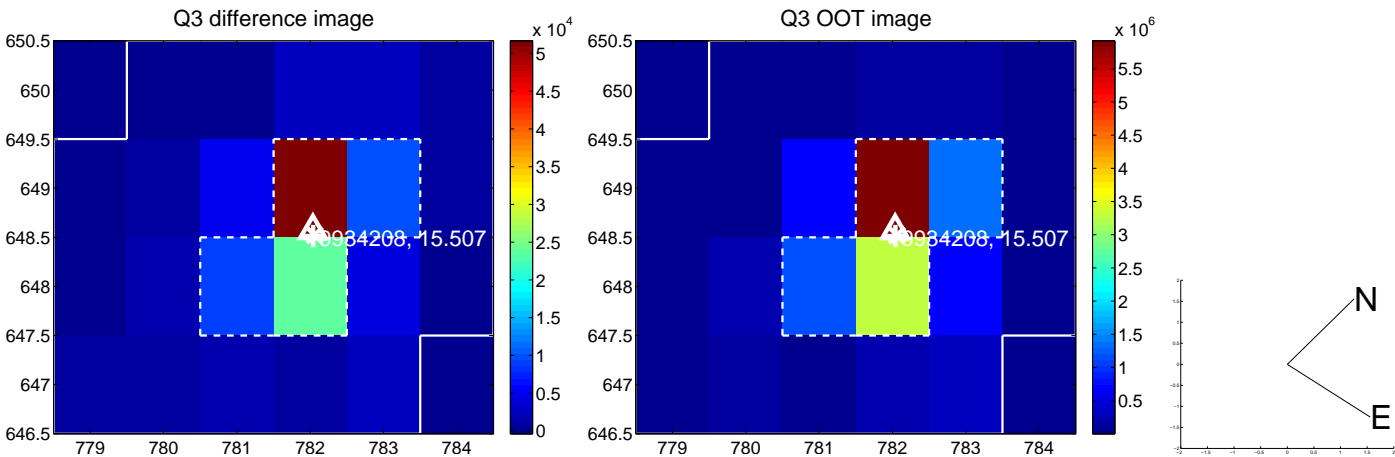
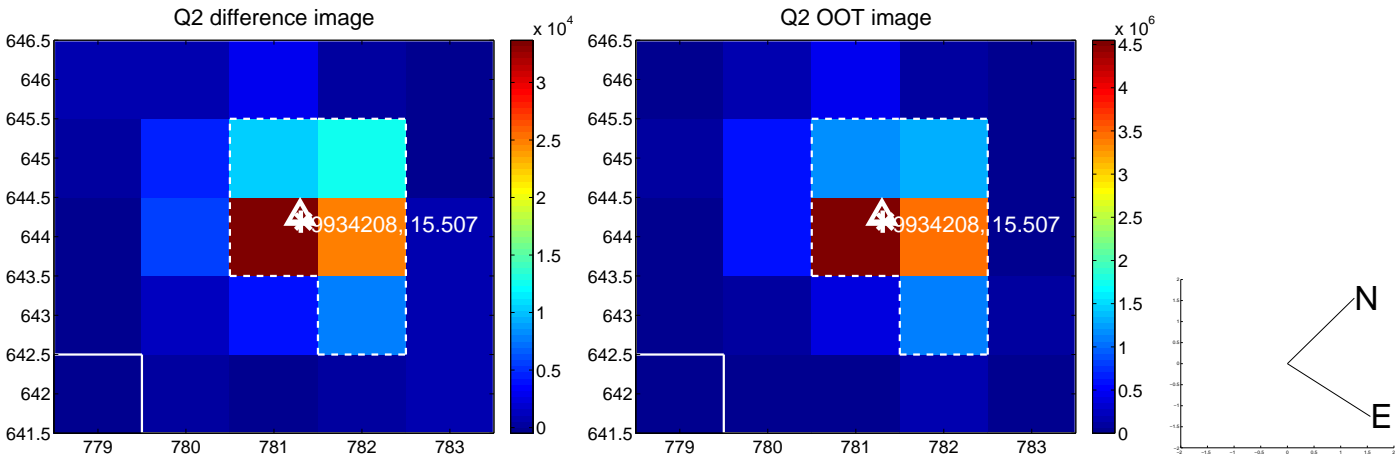
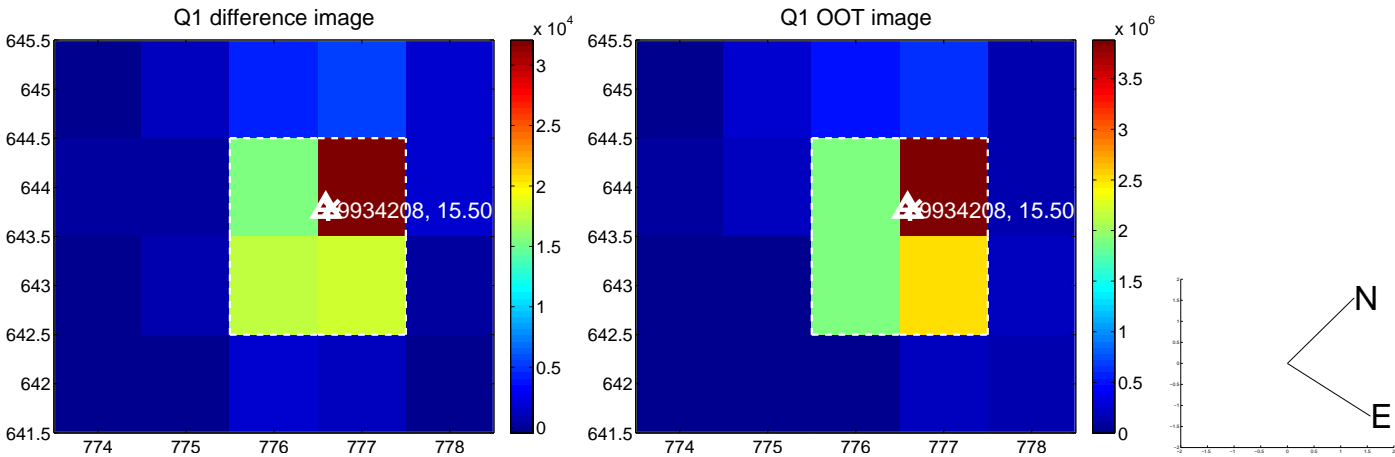
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.133 ± 0.068	1.96	-0.133 ± 0.068	0.005 ± 0.072
PRF-fit source offset from KIC position	0.235 ± 0.072	3.26	-0.204 ± 0.071	-0.117 ± 0.077
photometric centroid source offset	0.32 ± 0.05	6.74	-0.28 ± 0.05	-0.16 ± 0.05

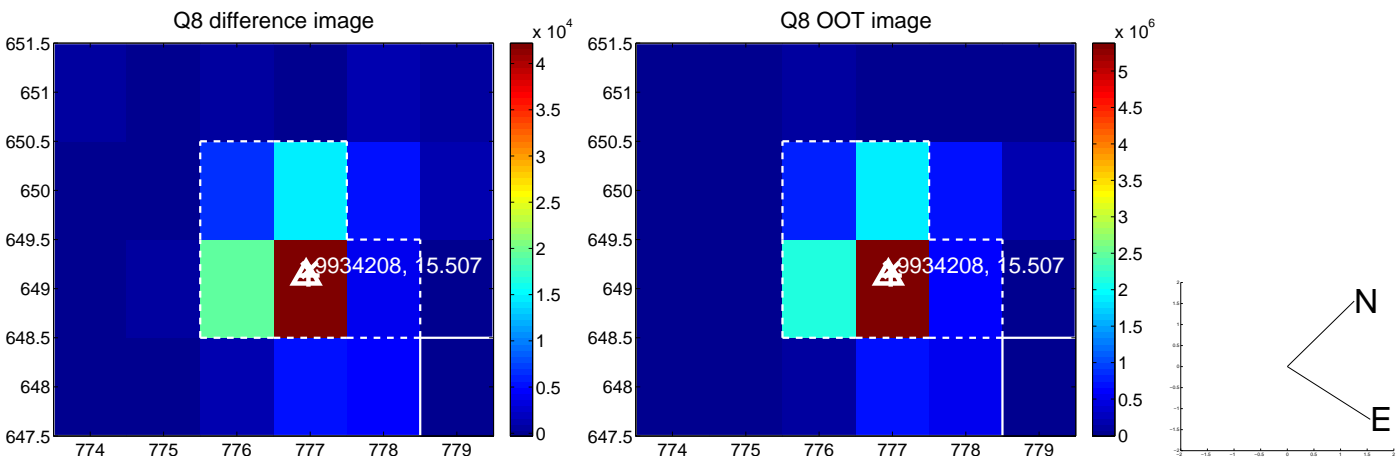
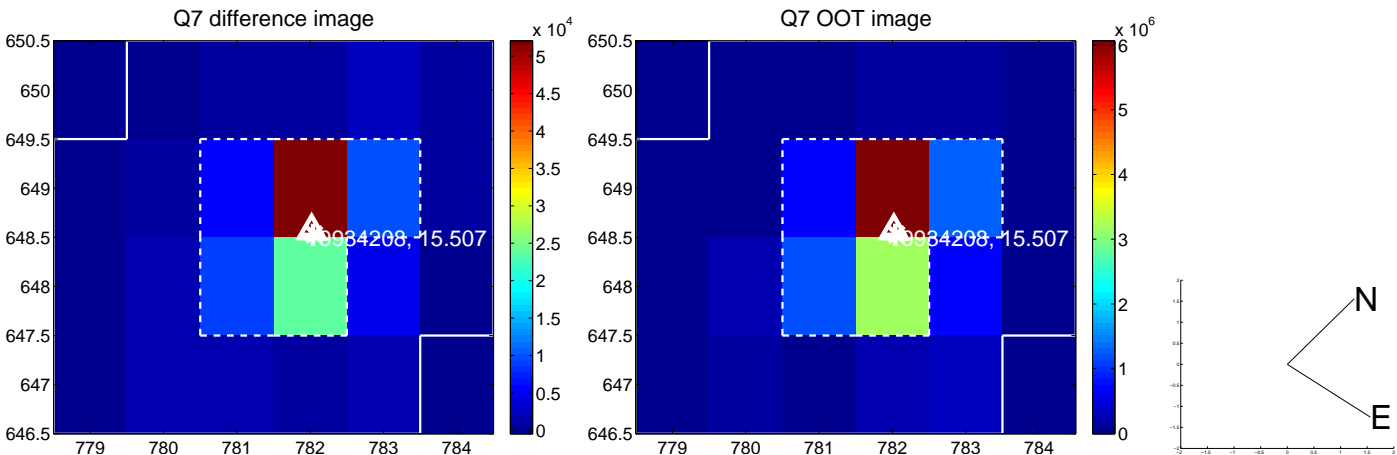
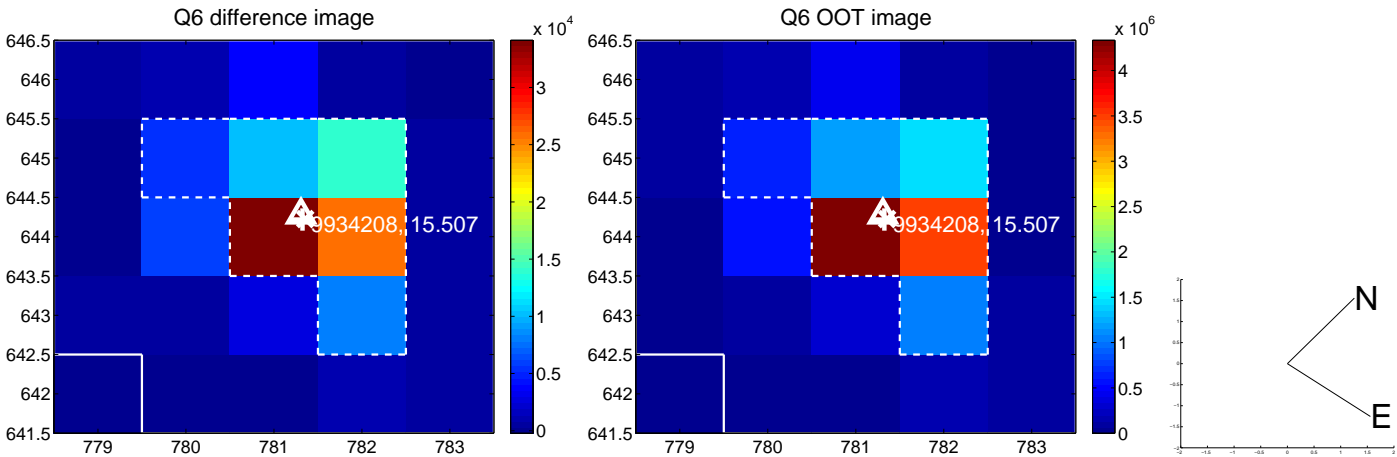
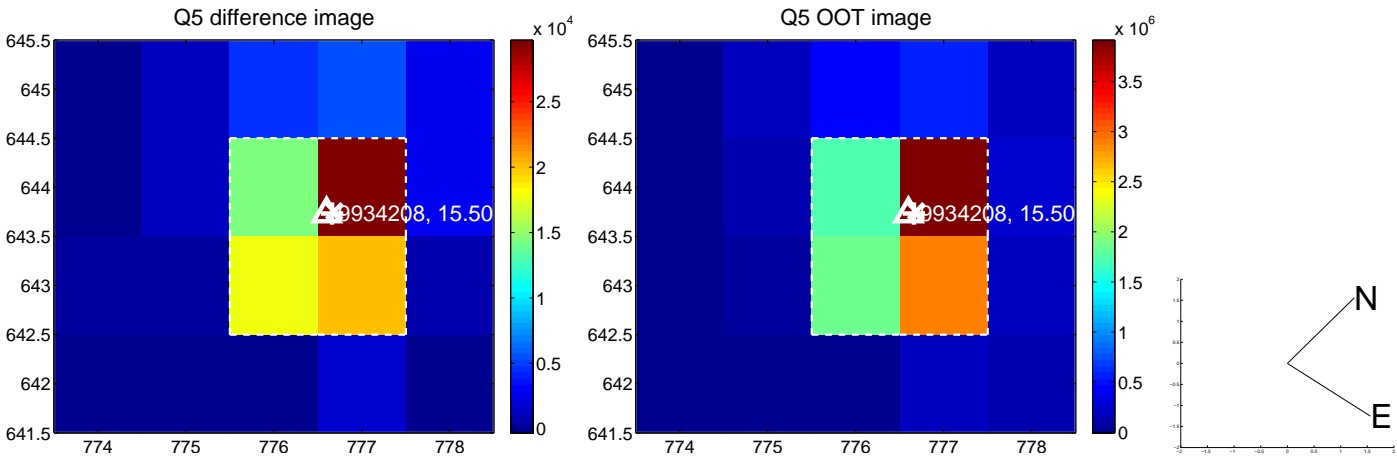


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

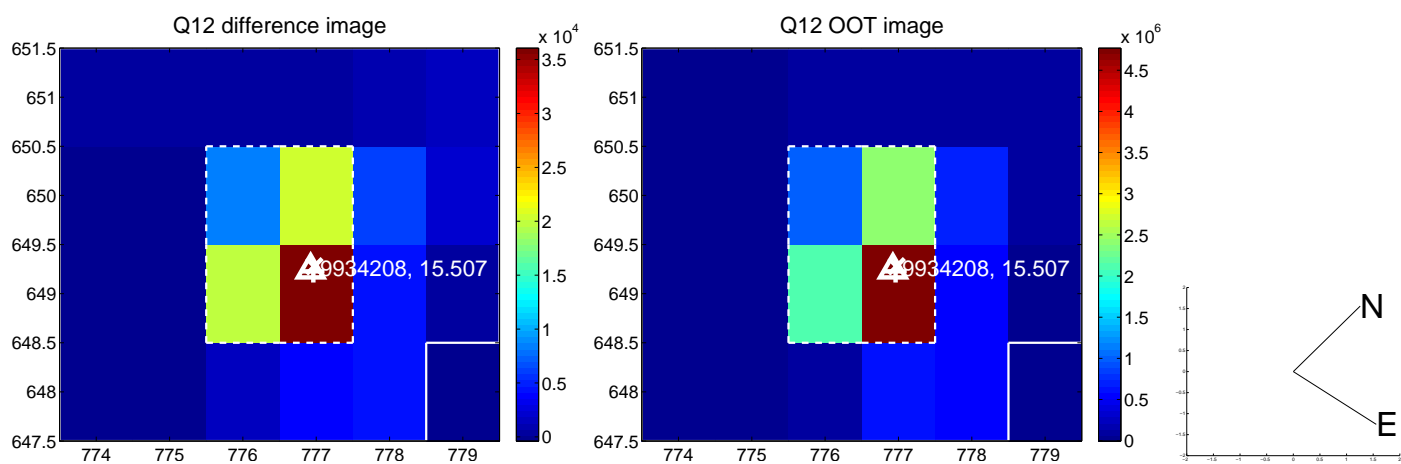
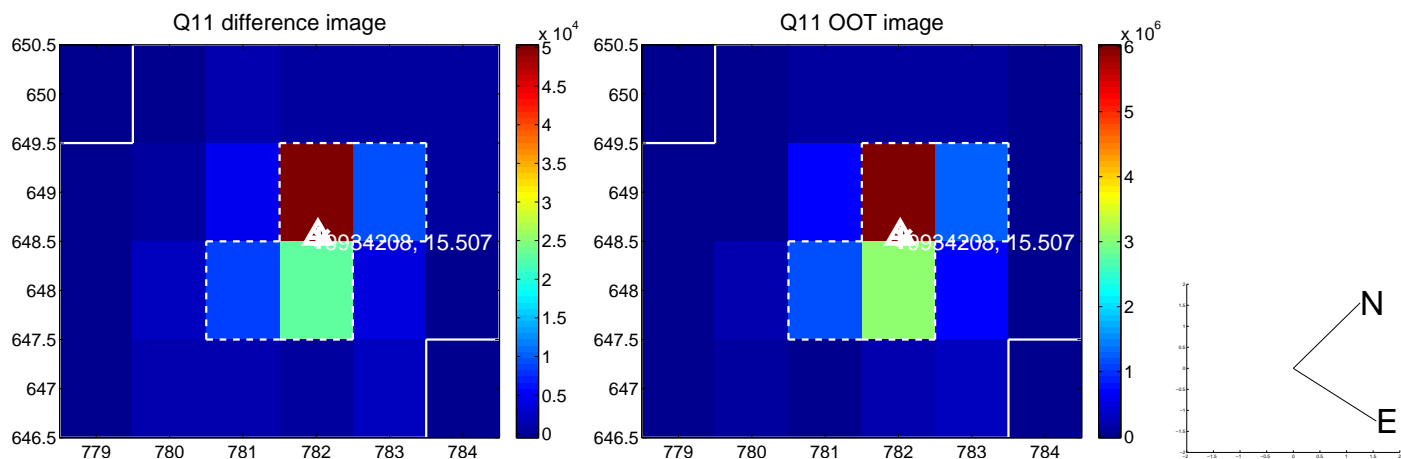
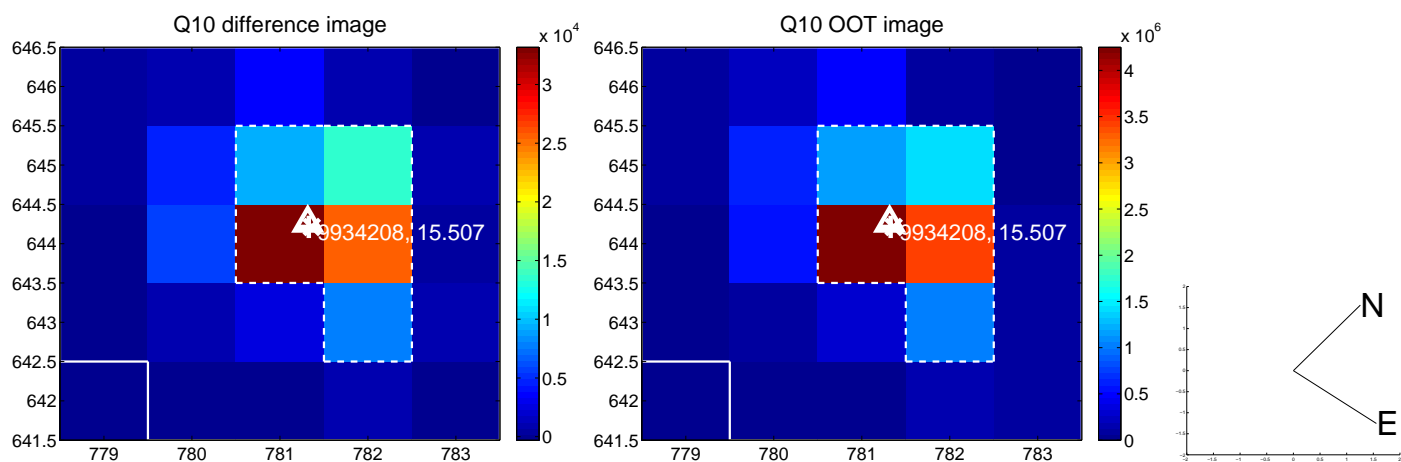
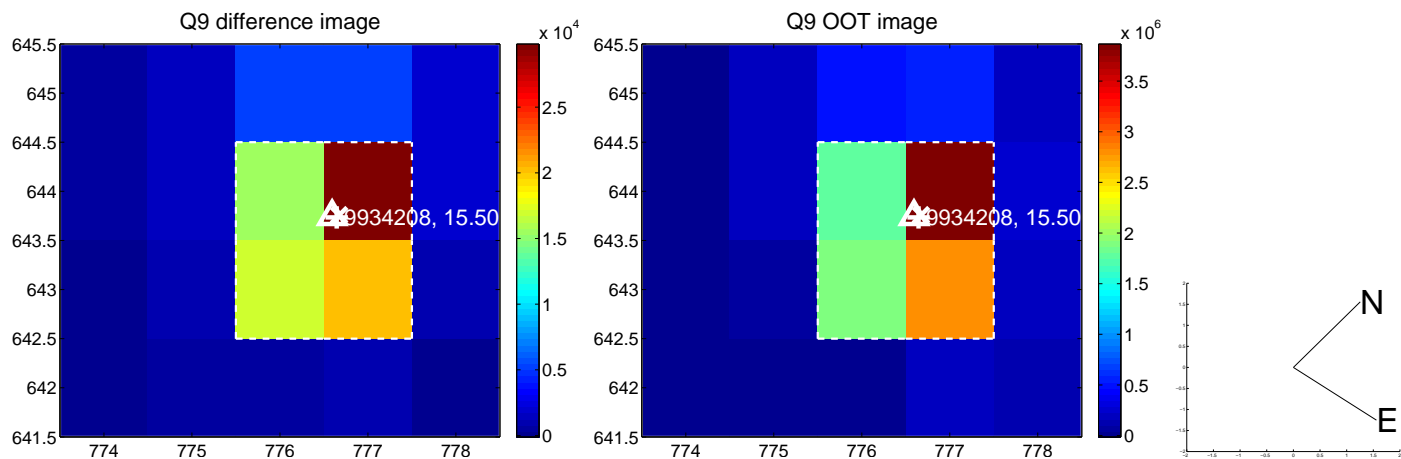
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



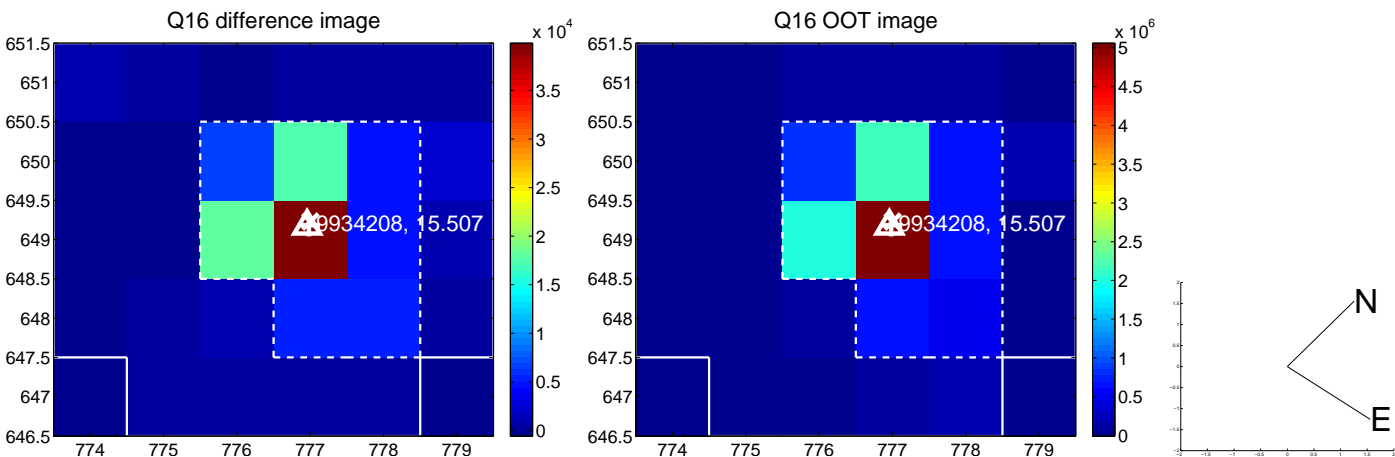
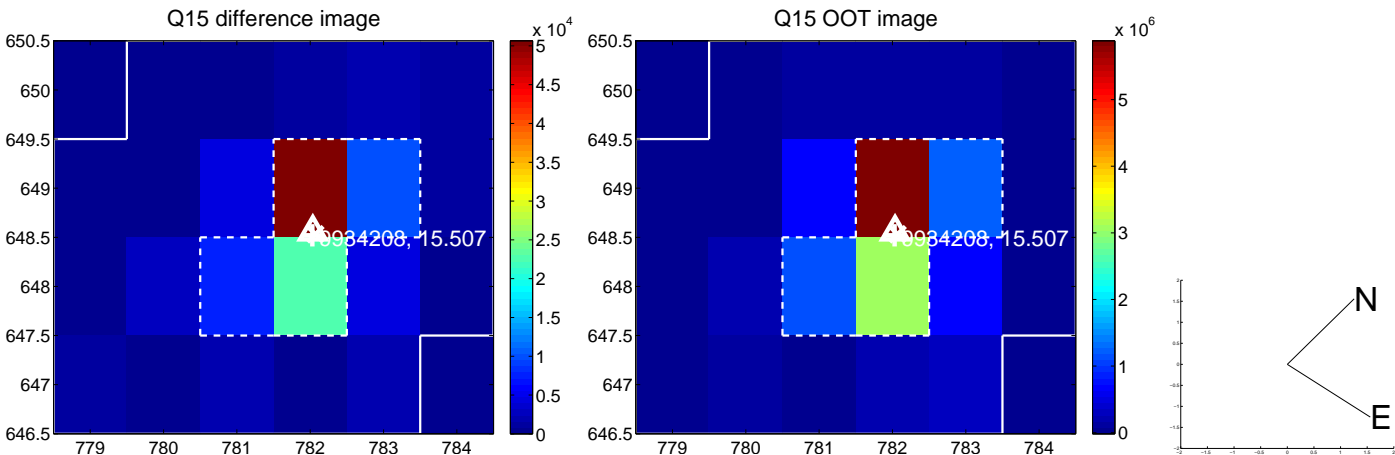
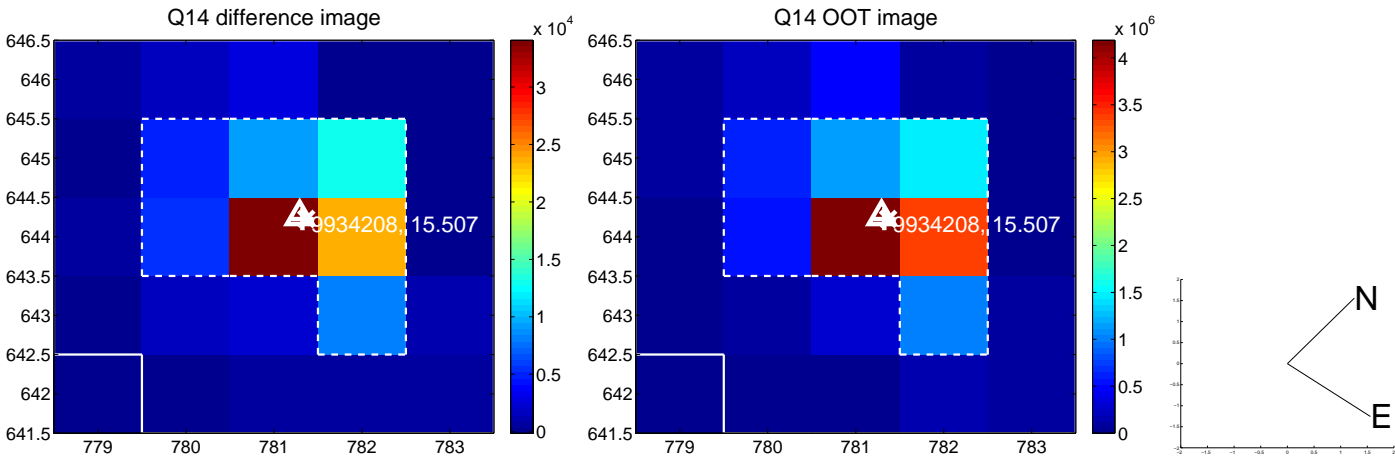
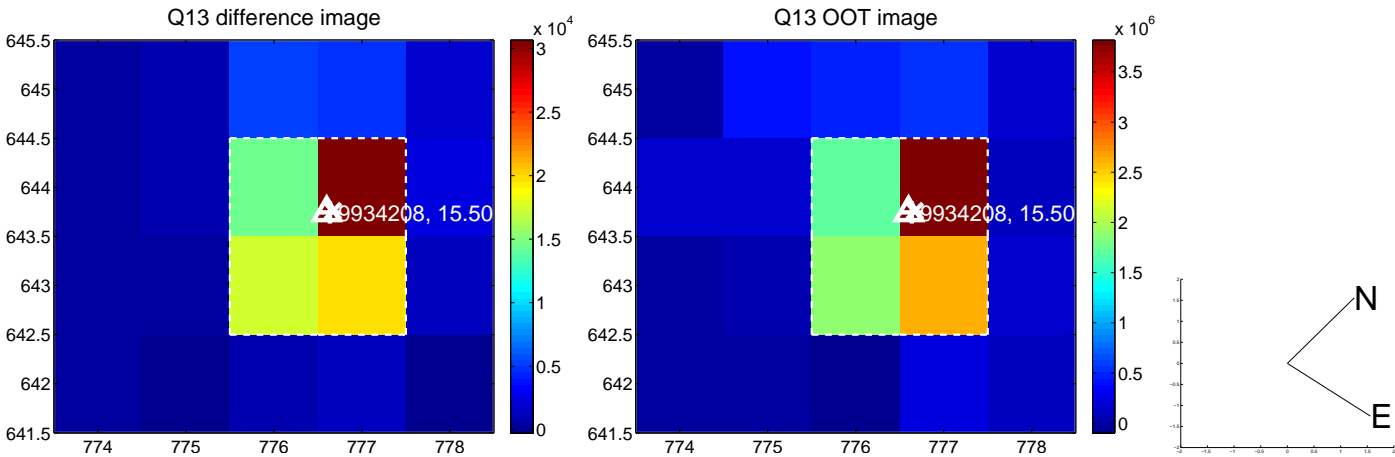
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



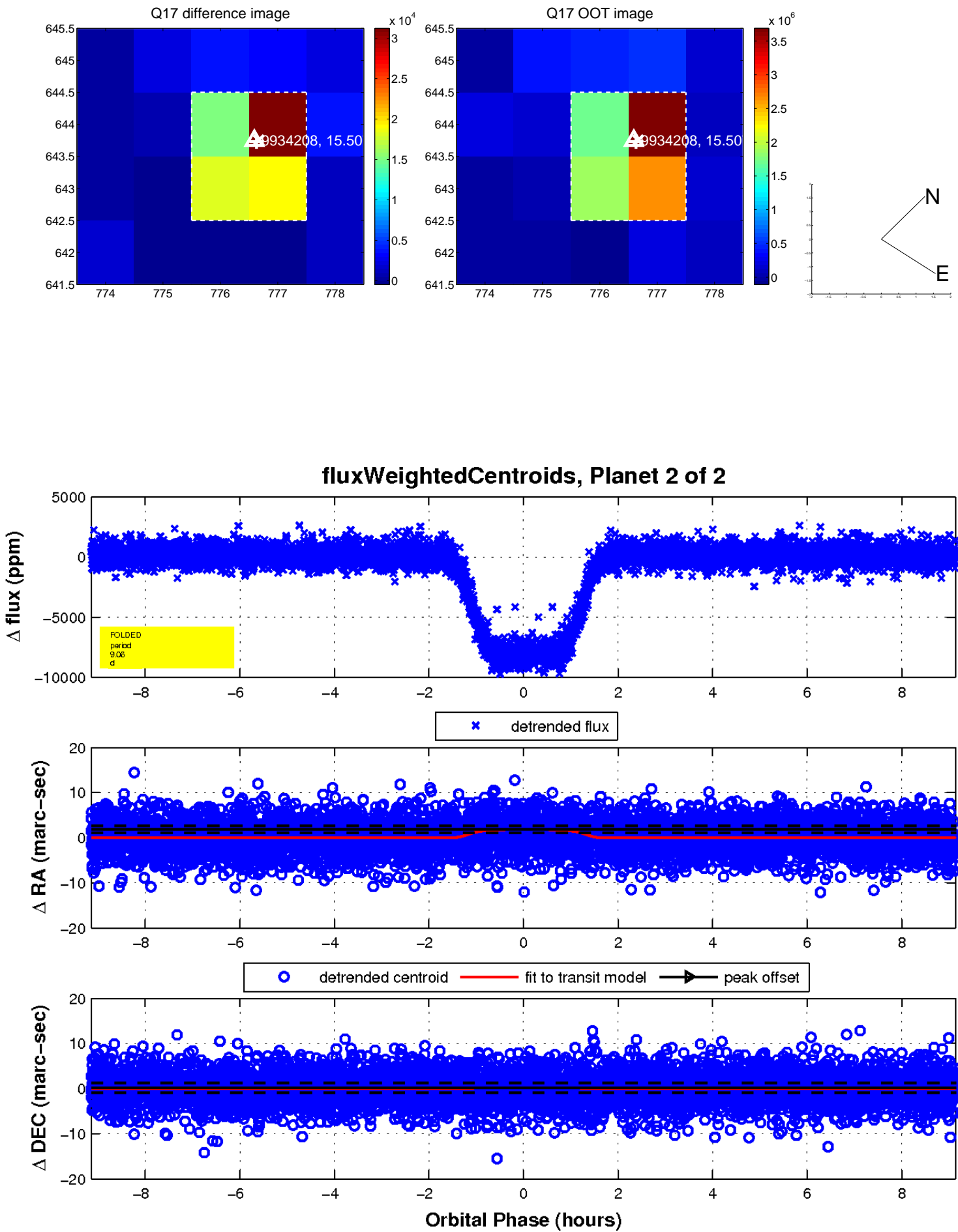
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

