

KIC 009597345

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})
009597345-01	OBS	0711.01	44.699747	174.820354	835.8	6.340	58.8	59.2	1.05	5497	3.23	14.84
009597345-02	OBS	0711.02	3.619296	131.824770	200.3	3.188	40.8	43.6	1.05	5497	1.78	423.56
009597345-03	OBS	0711.03	124.525584	254.170921	650.7	9.864	28.5	34.3	1.05	5497	2.89	3.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597345-01	OBS	PC	0.48	0	0	0	0	CENT_KIC_POS
009597345-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
009597345-03	OBS	PC	0.77	0	0	0	0	CENT_KIC_POS

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

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

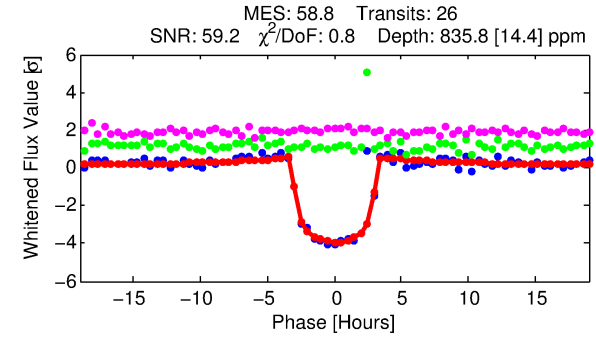
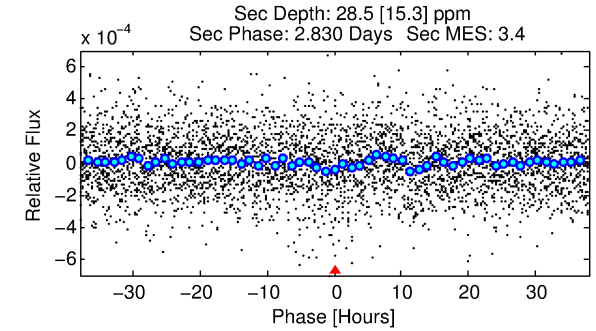
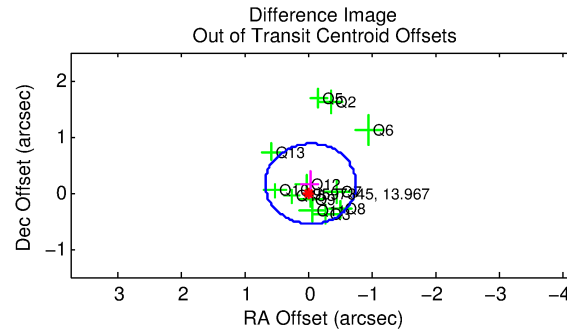
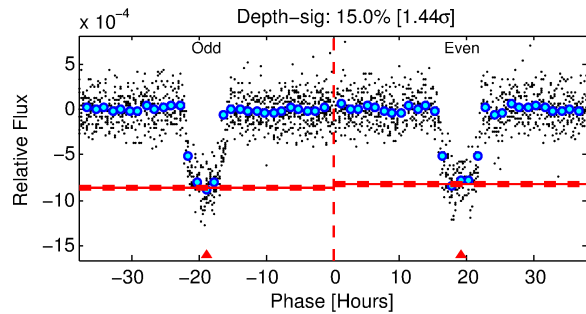
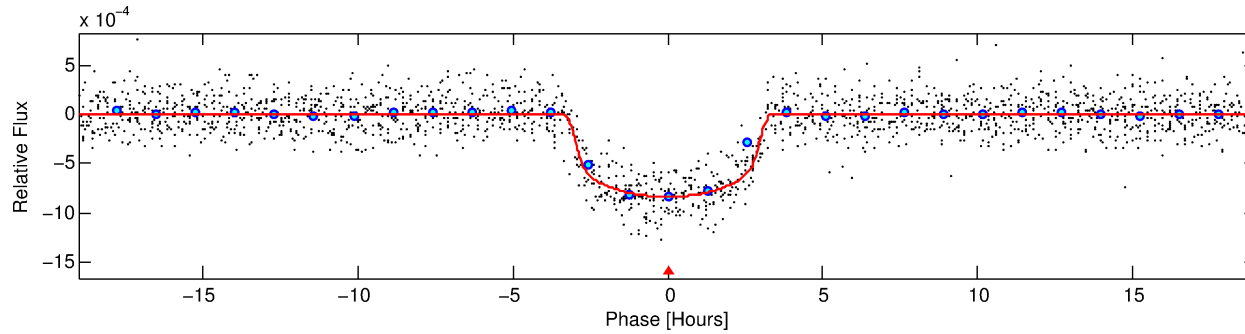
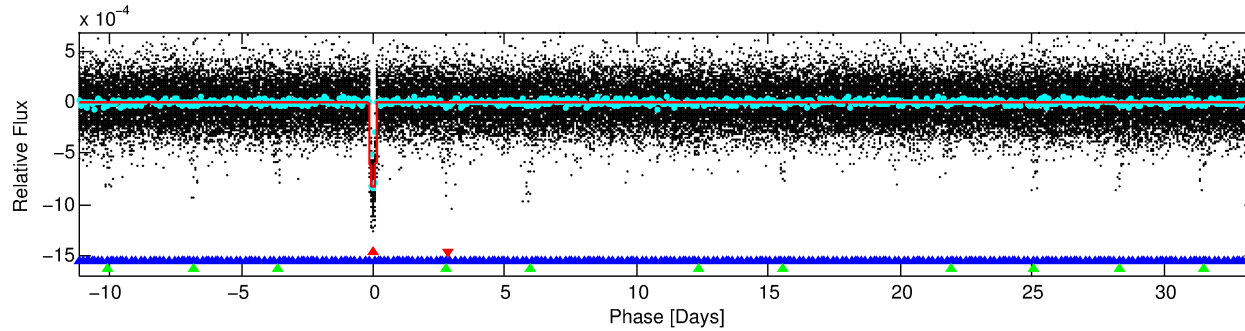
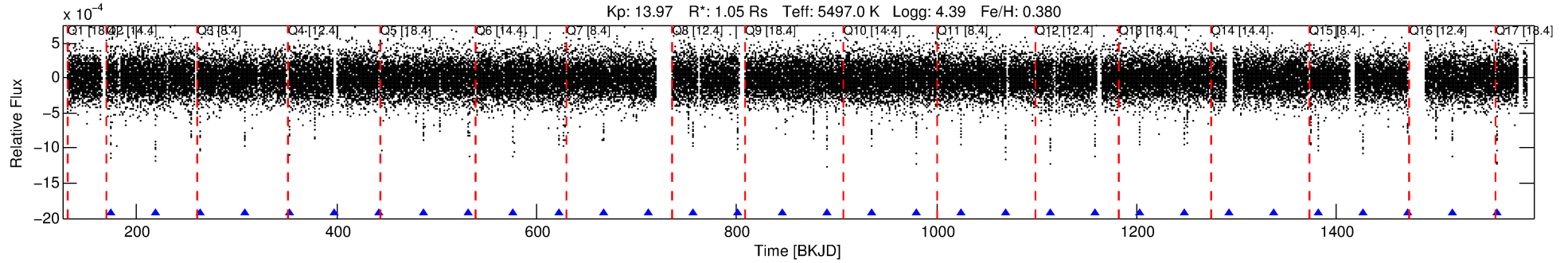
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009597345-01

No Significant Match Found

DV One-Page Summary

KIC: 9597345 Candidate: 1 of 3 Period: 44.700 d
KOI: K00711.01 Name: Kepler-218c Corr: 0.989



DV Fit Results:

Period = 44.69975 [0.00011] d
Epoch = 174.8204 [0.0020] BKJD
Rp/R* = 0.0283 [0.0030]
a/R* = 40.39 [16.58]
b = 0.70 [0.30]
Seff = 14.84 [3.16]
Teff = 500 [27] K
Rp = 3.23 [0.61] Re
a = 0.2456 [0.0326] AU
Ag = 90.75 [55.36] [1.62 σ]
Teffp = 2388 [348] K [5.41 σ]

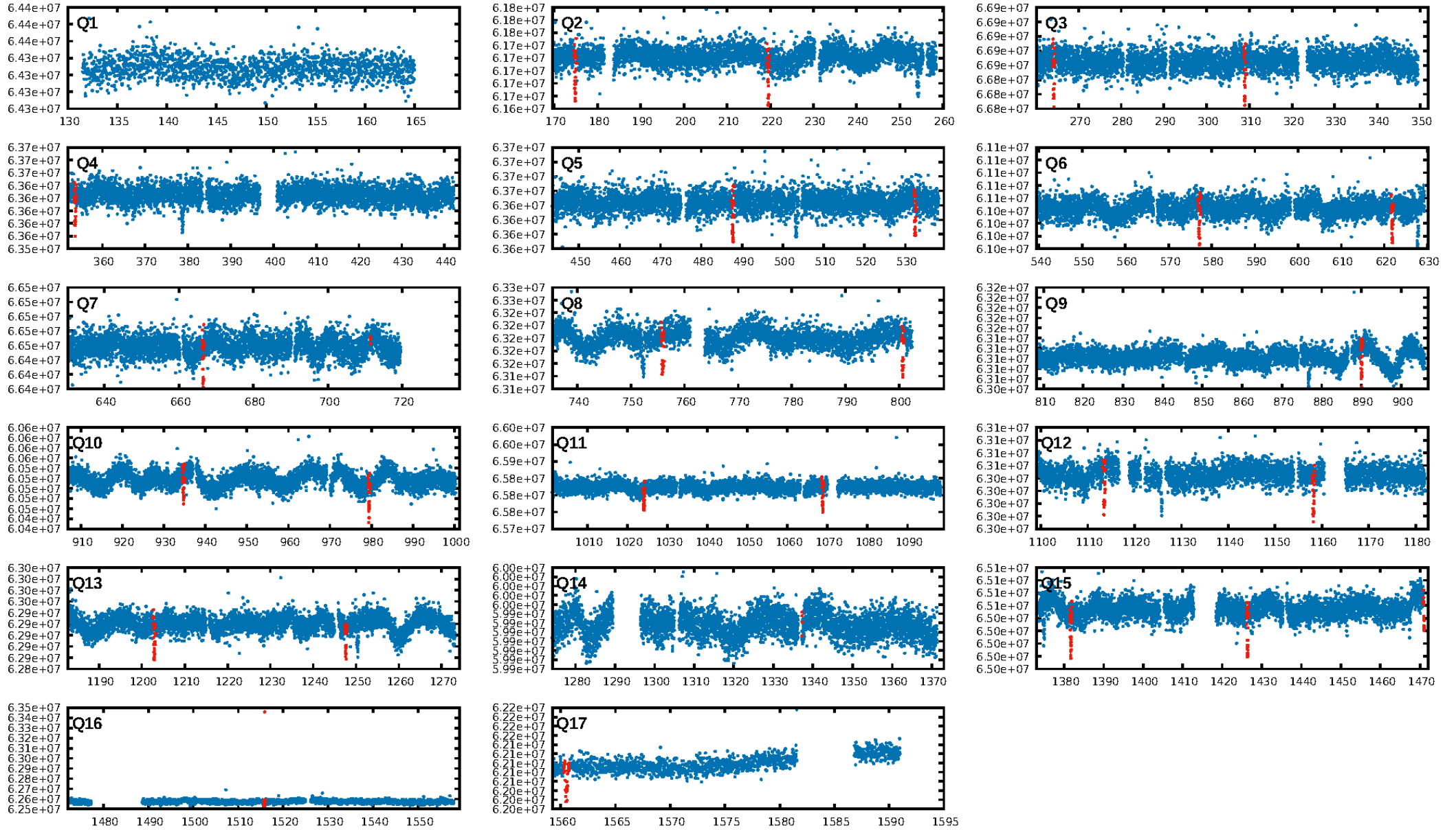
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [138.93 σ]
LongPeriod-sig: 100.0% [163.38 σ]
ModelChiSquare2-sig: 79.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [25/25]
GhostDiagnostic-chr: 11.1
Centroid-sig: 5.3%
Centroid-so: 0.437 arcsec [2.07 σ]
OotOffset-rm: 0.160 arcsec [0.67 σ]
KicOffset-rm: 0.538 arcsec [2.66 σ]
OotOffset-st: 3/4/2/3 [12]
KicOffset-st: 3/4/2/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

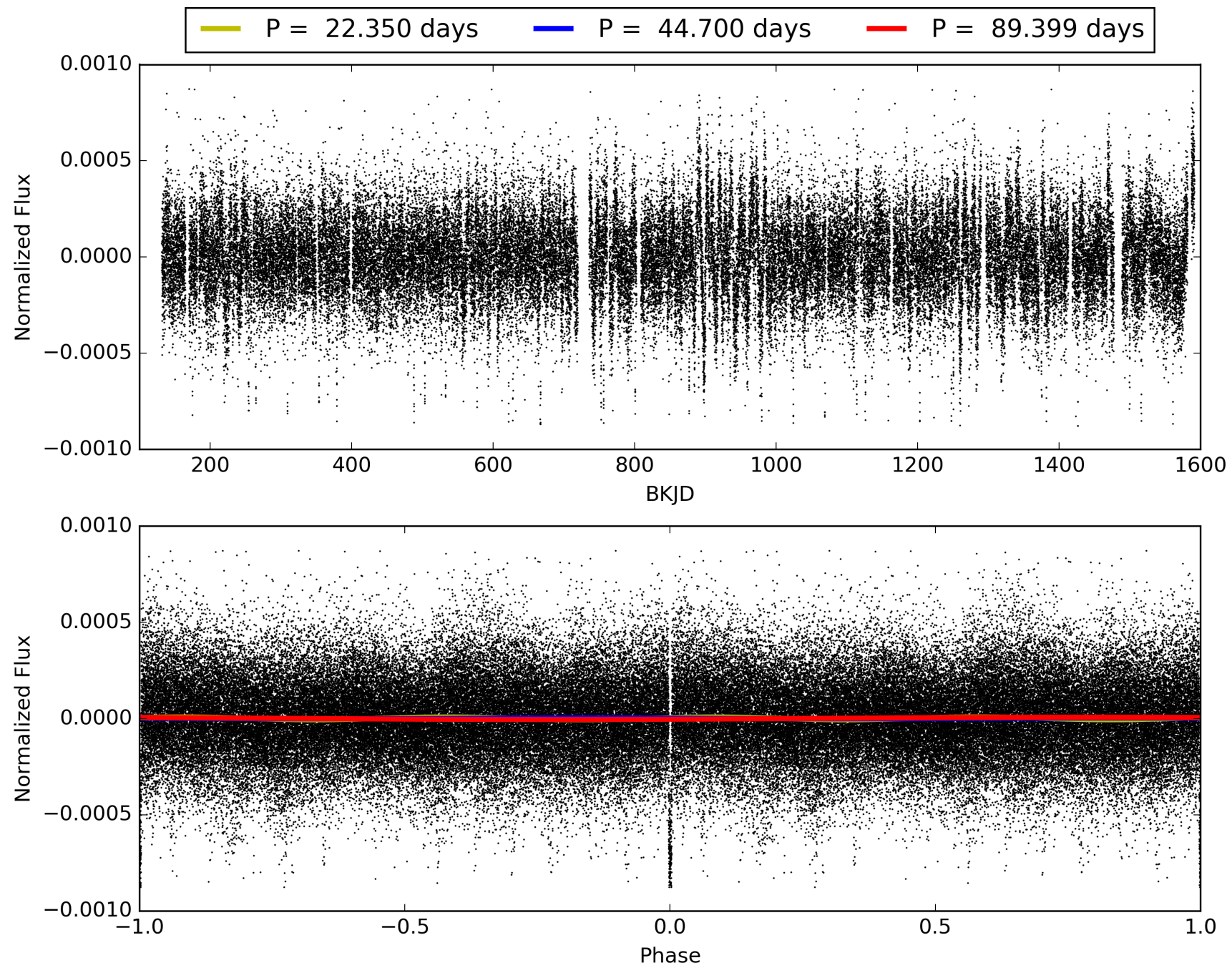
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:30:18 Z

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

TCE 009597345-01, PDC Light Curves

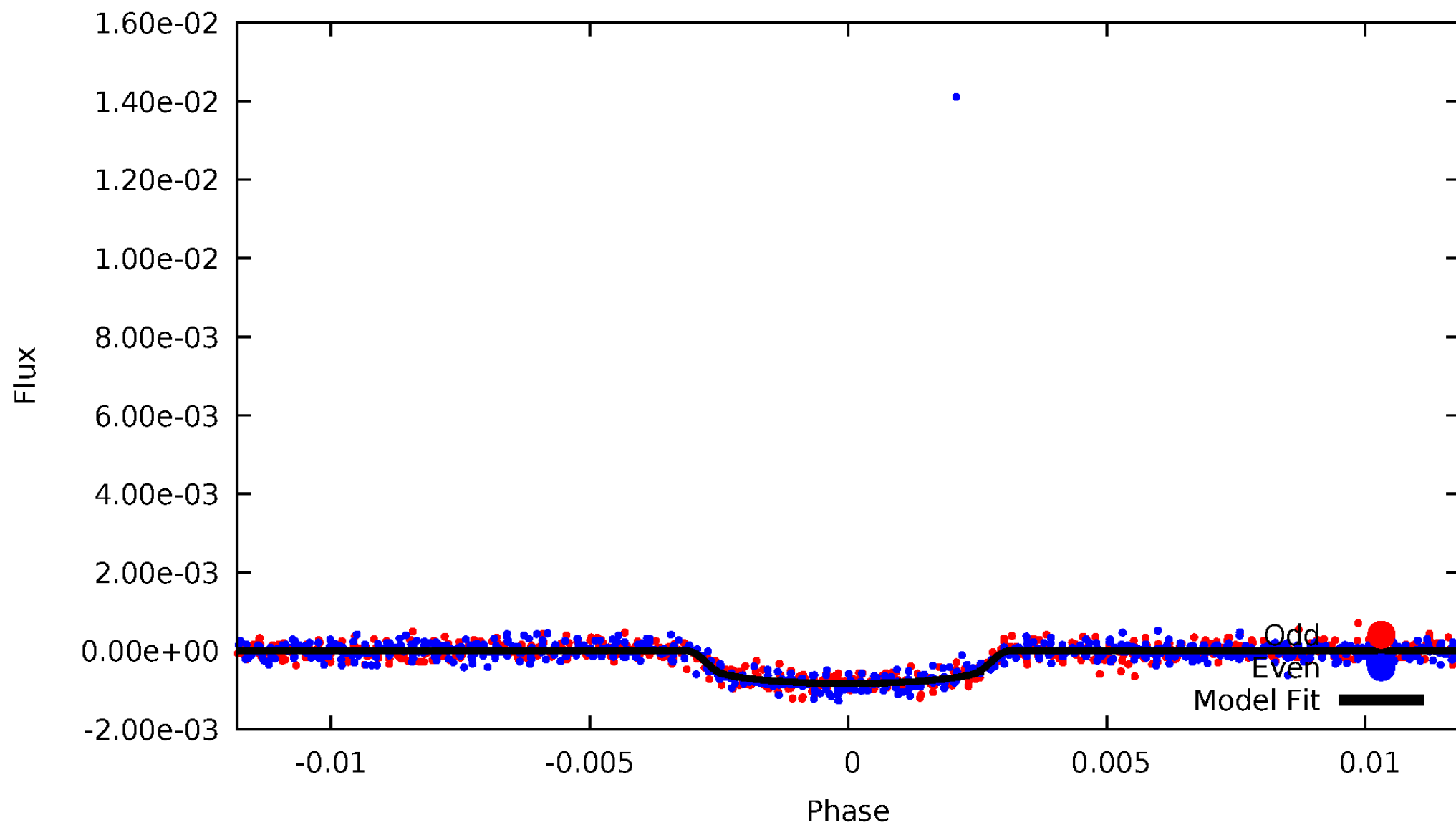


TCE 009597345-01



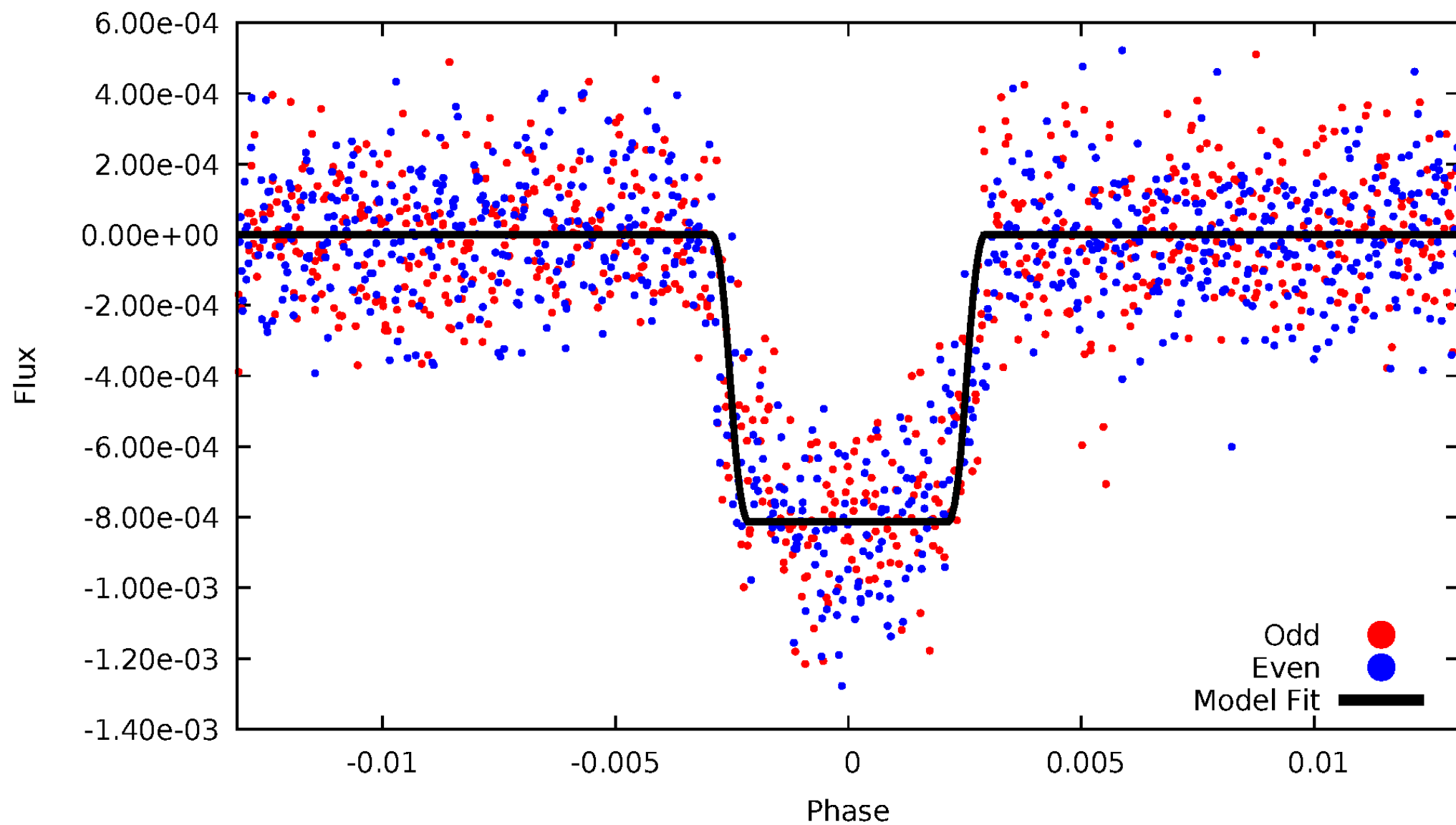
DV Odd/Even

TCE 009597345-01



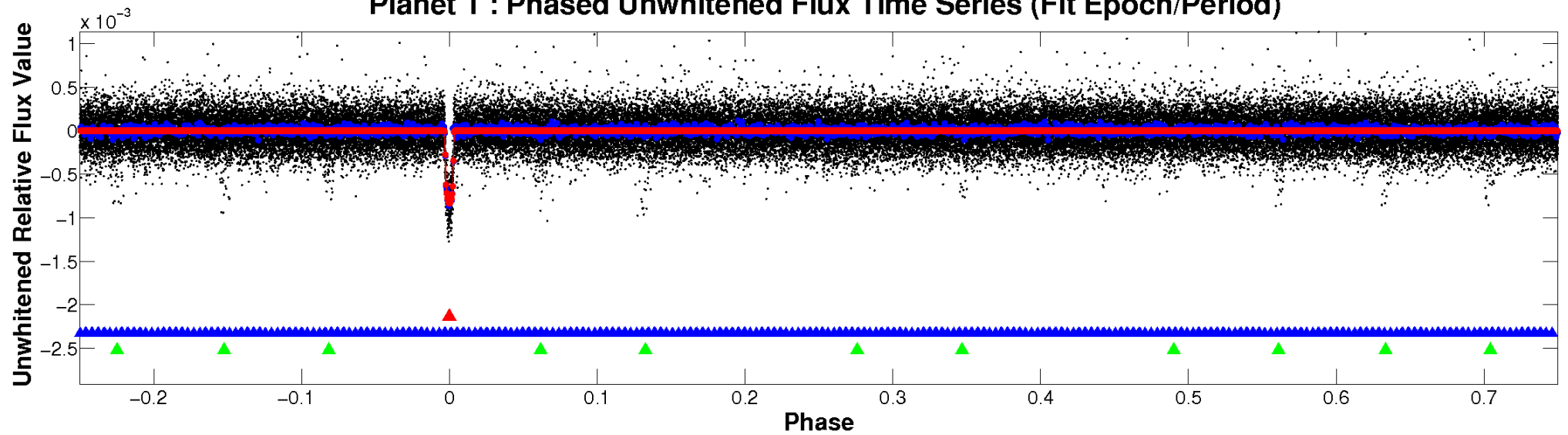
ALT Odd/Even

TCE 009597345-01

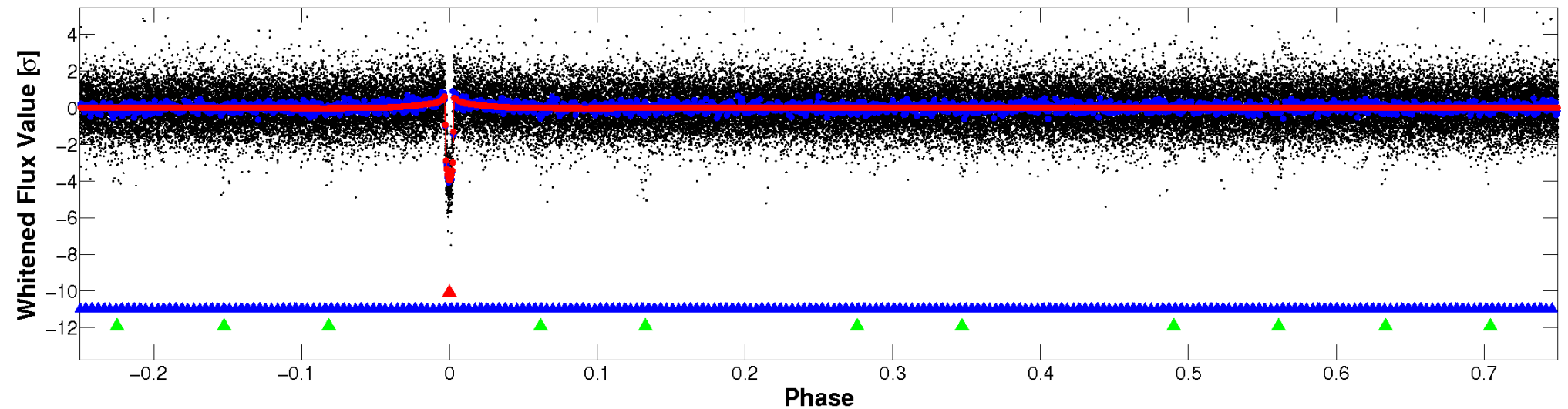


Non-Whitened Vs. Whitened Light Curve

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

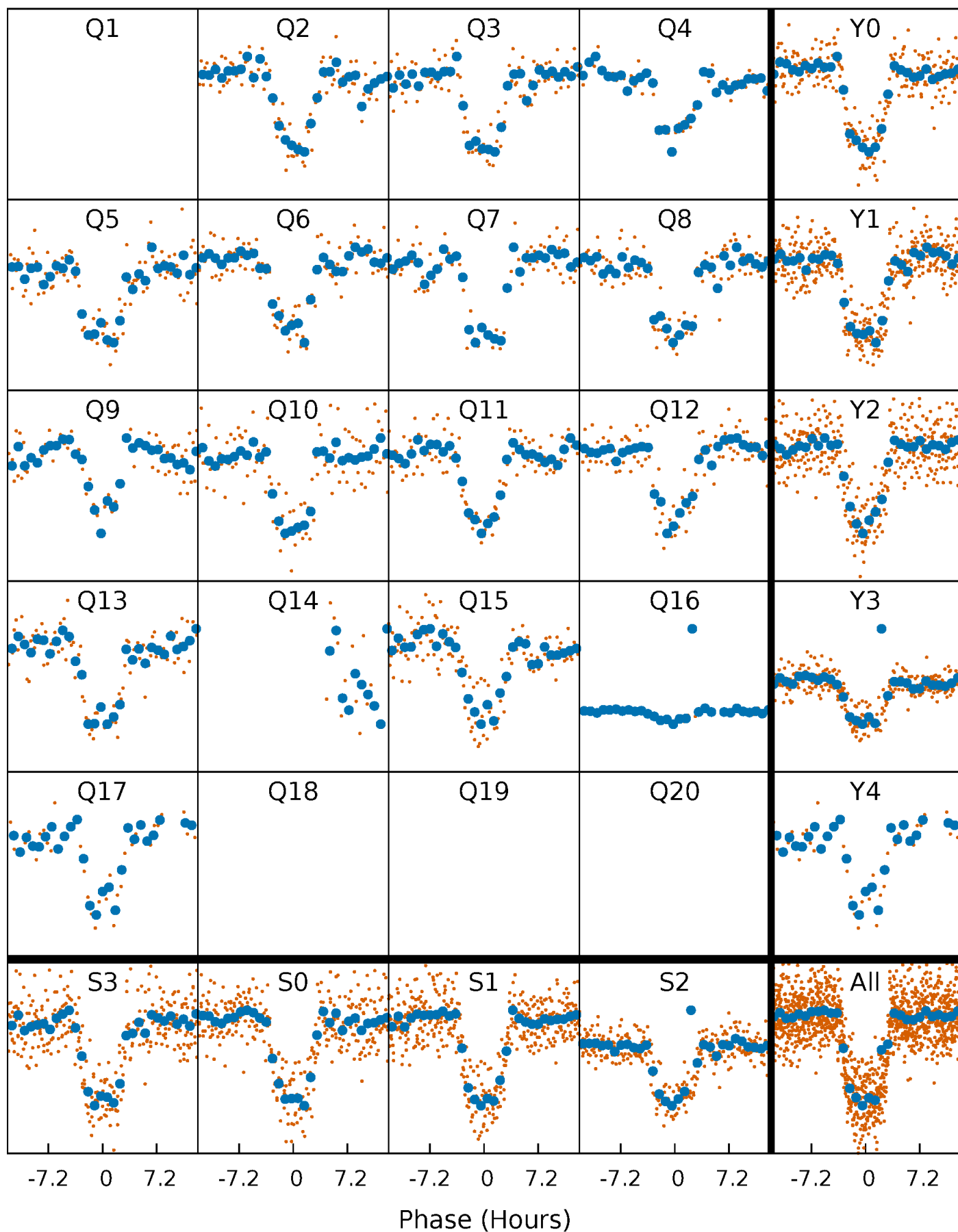


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



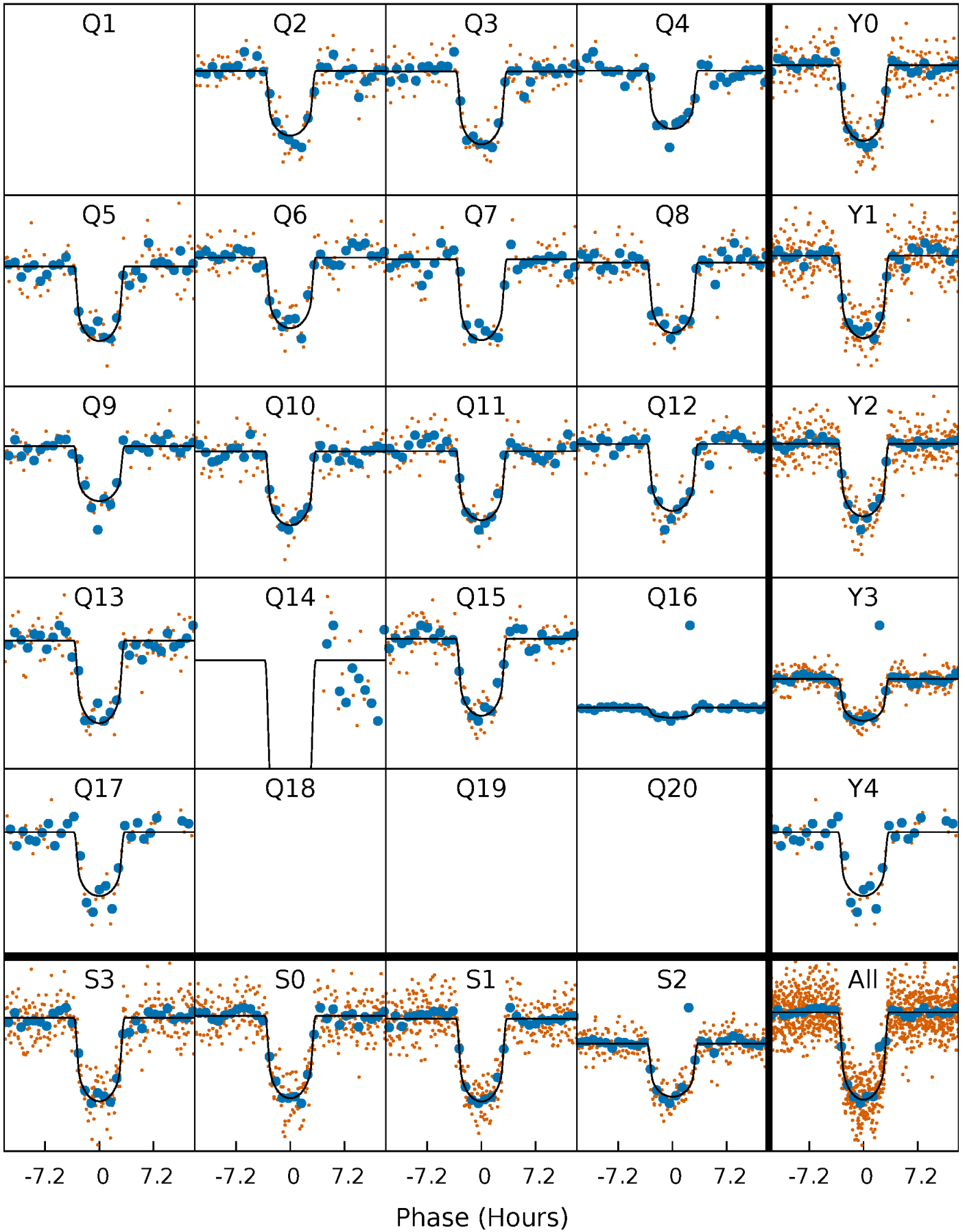
PDC Quarter-Phased Transit Curves

TCE 009597345-01 P= 44.699747 Days $T_0=174.820354$ (BKJD)



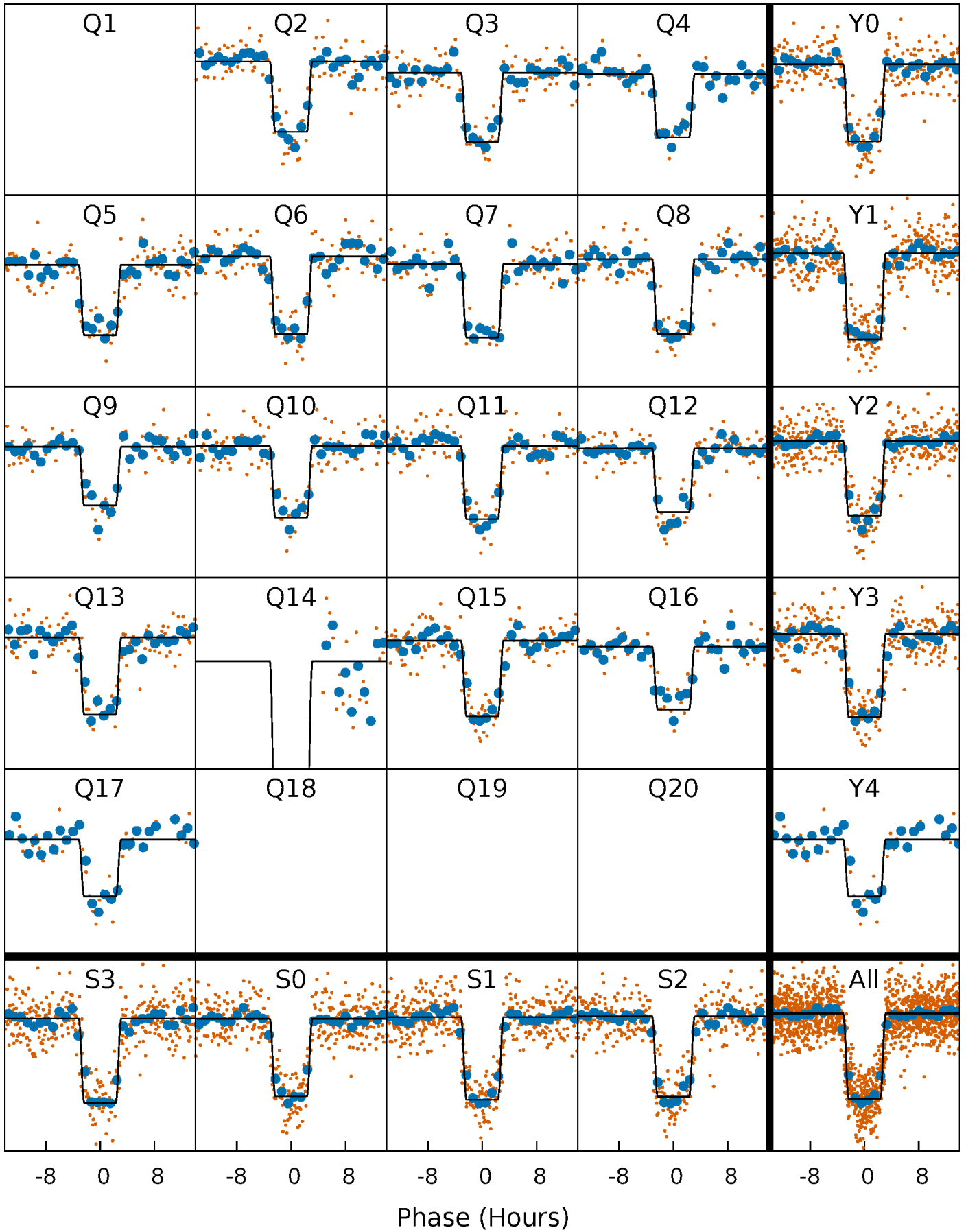
DV Quarter-Phased Transit Curves

TCE 009597345-01 P= 44.699747 Days $T_0=174.820354$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

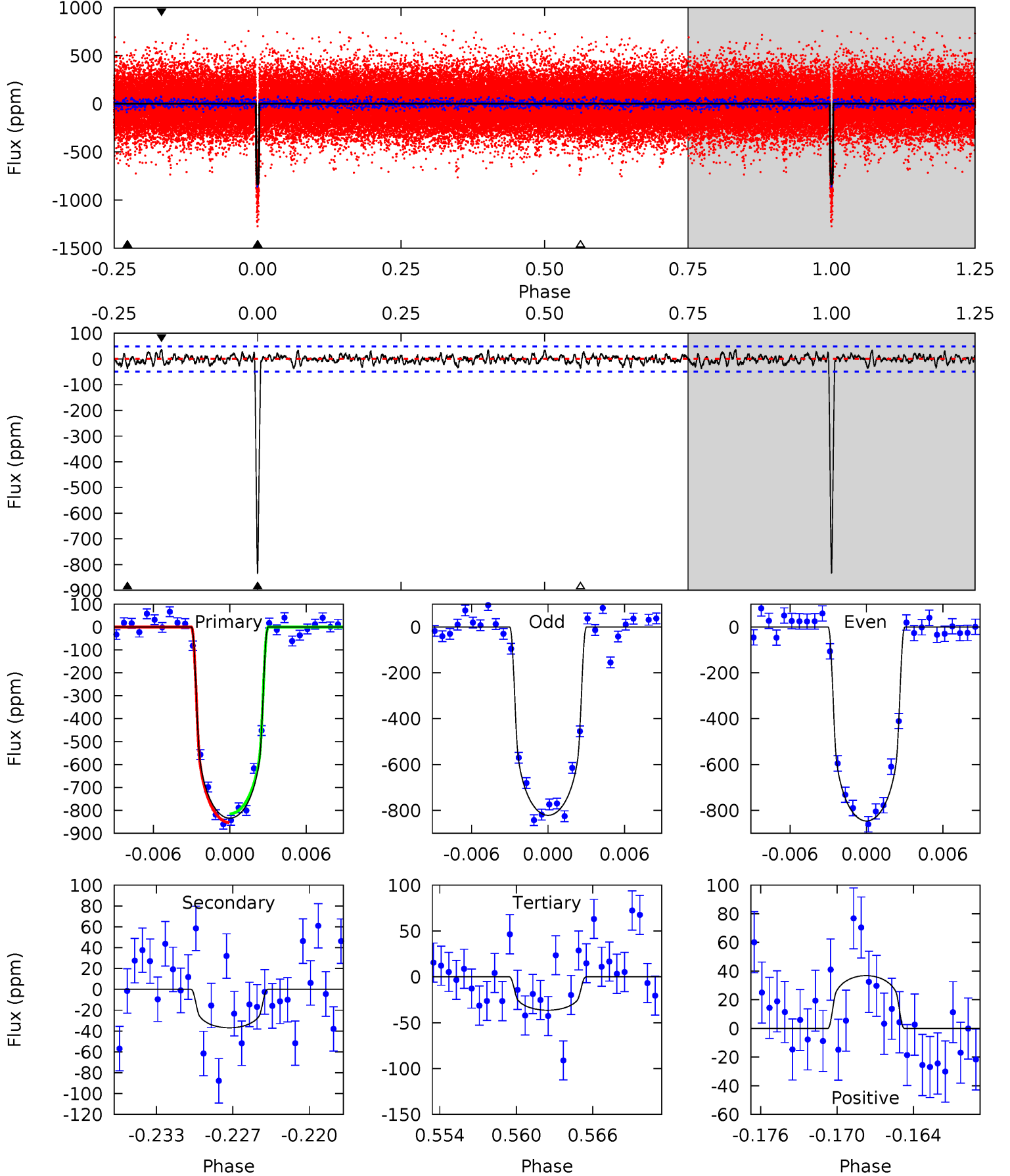
TCE 009597345-01 P= 44.698822 Days $T_0=174.832859$ (BKJD)



DV Model-Shift Uniqueness Test

009597345-01, P = 44.699747 Days, E = 130.120607 Days

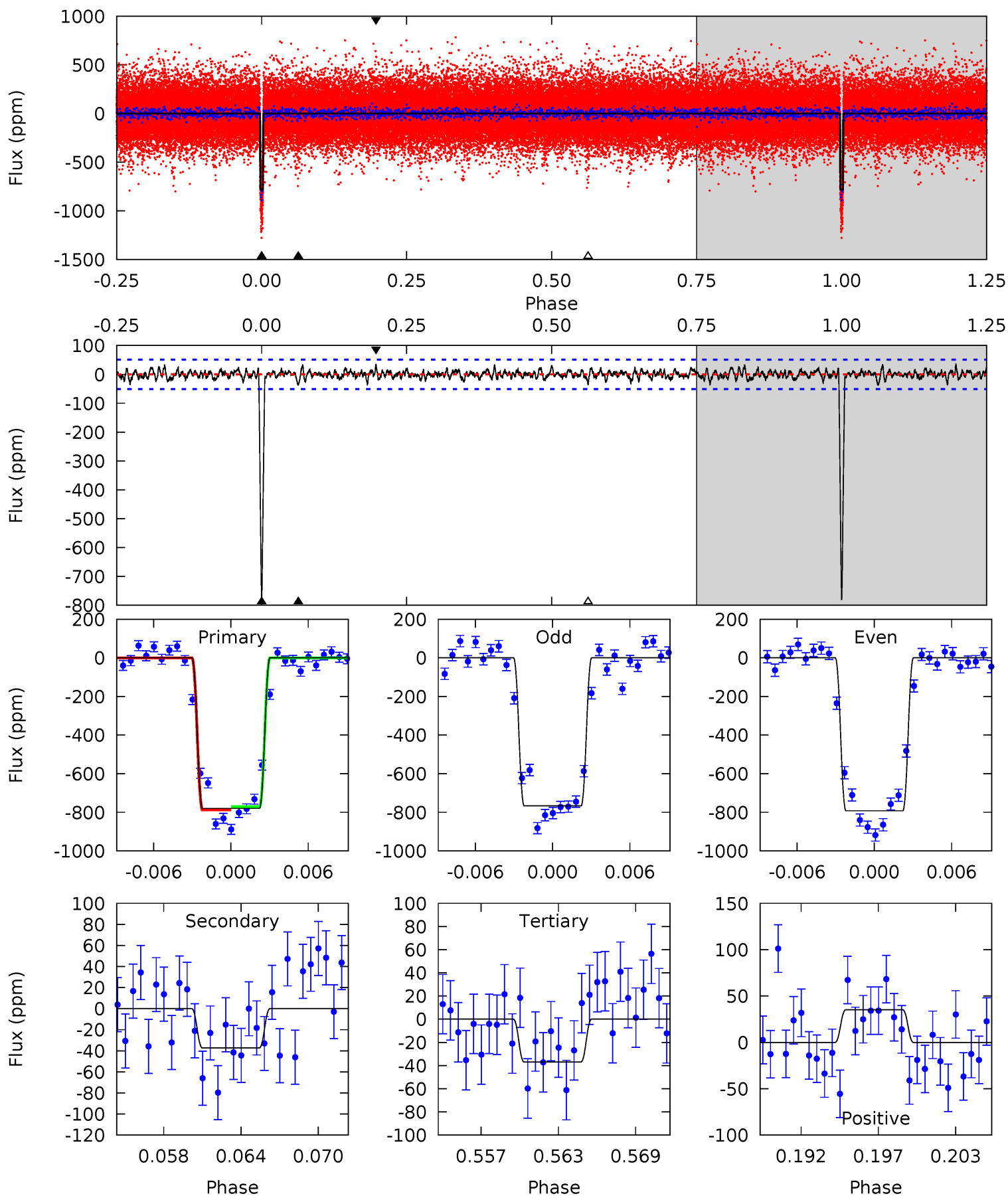
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
86.7	3.84	3.78	3.83	5.11	2.73	1.24	82.9	82.8	0.06	0.01	1.29	0.95	0.04	2.00



Alt Model-Shift Uniqueness Test

009597345-01, P = 44.698822 Days, E = 130.134037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.7	3.77	3.73	3.55	5.13	2.76	1.06	75.0	75.1	0.04	0.22	1.26	1.01	0.04	0.86



Stellar Parameters For KIC 009597345

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5497^{+109}_{-109}	$4.394^{+0.090}_{-0.110}$	$0.380^{+0.100}_{-0.150}$	$1.046^{+0.161}_{-0.111}$	$0.988^{+0.049}_{-0.055}$	$1.216^{+0.439}_{-0.381}$
	+2%/-2%	+2%/-3%	+26%/-39%	+15%/-11%	+5%/-6%	+36%/-31%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 009597345-01 / KOI 0711.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37 ± 10	$3.24^{+0.44}_{-0.41}$	700^{+32}_{-25}	3146^{+161}_{-170}	114^{+51}_{-38}
Alt.	-37 ± 10	$3.28^{+0.44}_{-0.42}$	700^{+34}_{-26}	3138^{+173}_{-173}	113^{+51}_{-39}

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

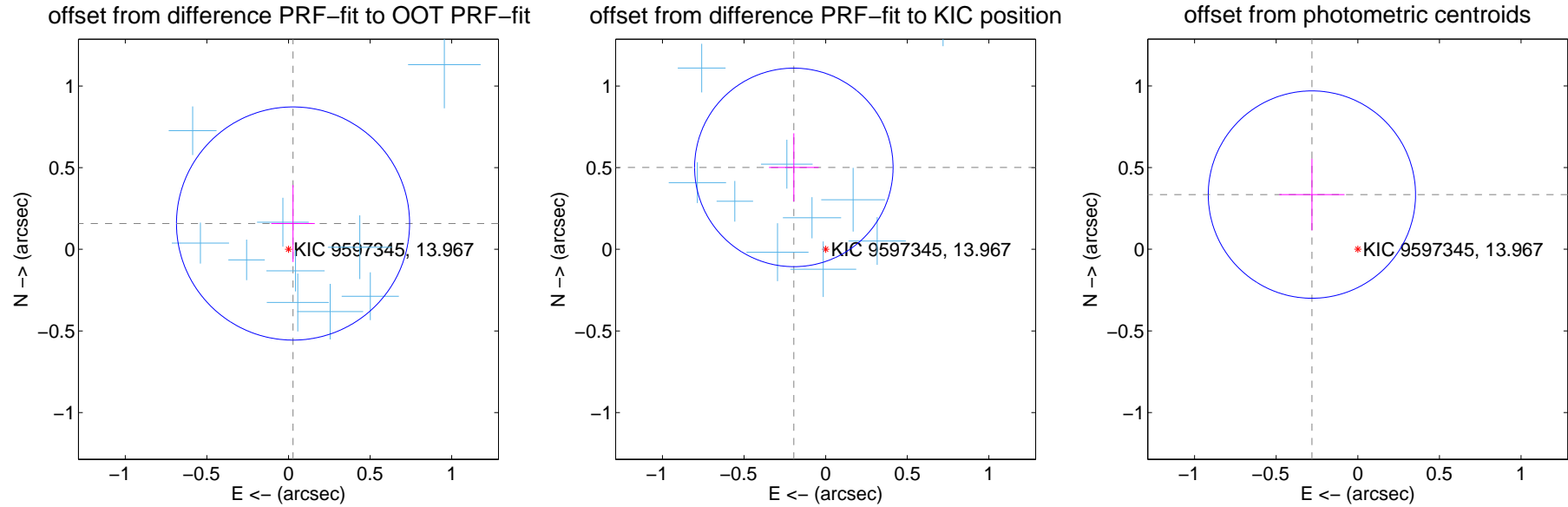
DV Centroid Data

Supplemental centroid analysis for 009597345-01. Kepler magnitude: 13.97. Transit SNR 59.19

There are 12 quarters with good PRF difference image offsets

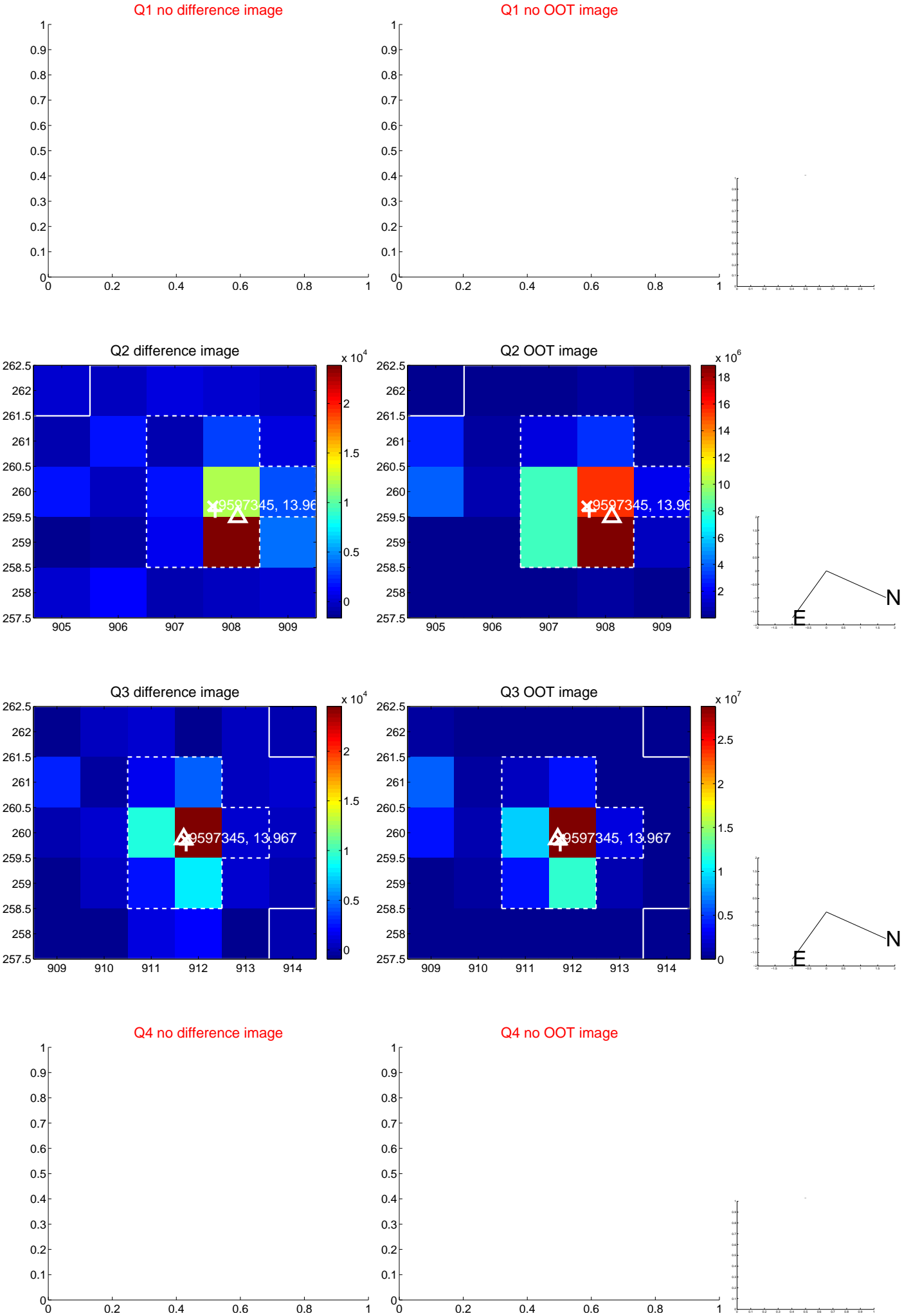
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.160 ± 0.238	0.67	-0.028 ± 0.133	0.158 ± 0.236
PRF-fit source offset from KIC position	0.538 ± 0.203	2.66	0.195 ± 0.152	0.502 ± 0.209
photometric centroid source offset	0.44 ± 0.21	2.07	0.28 ± 0.20	0.33 ± 0.22

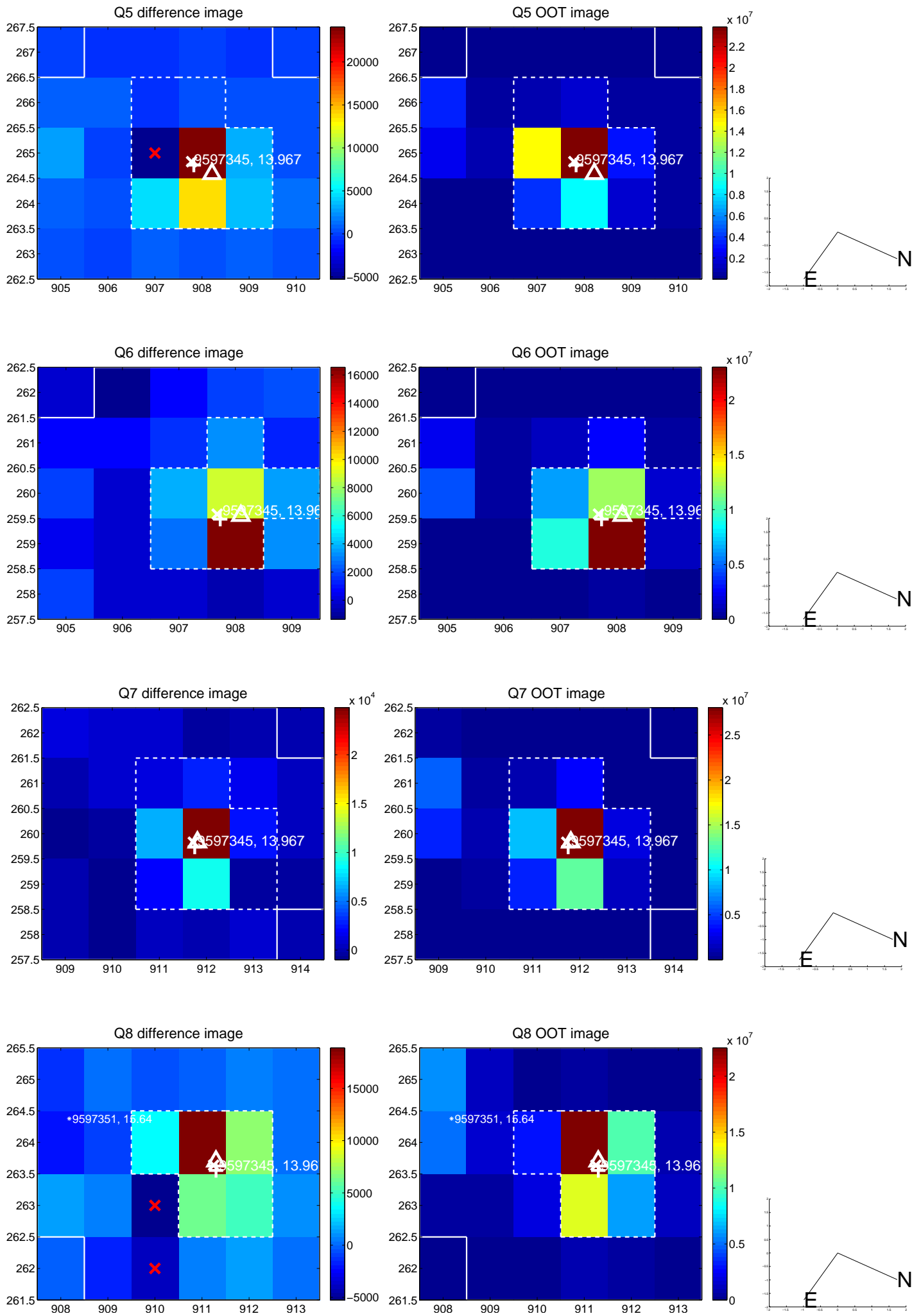


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

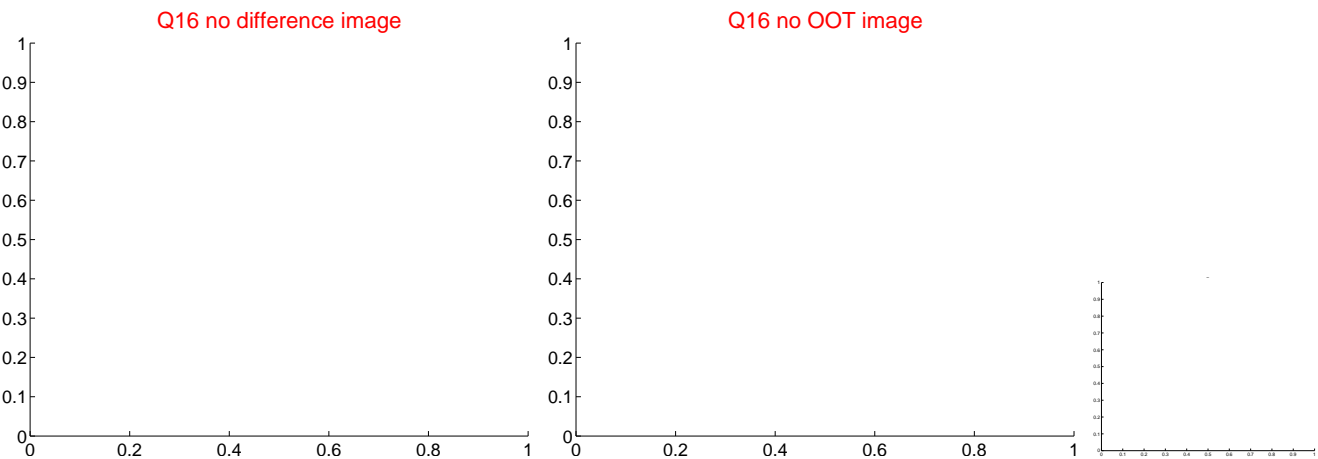
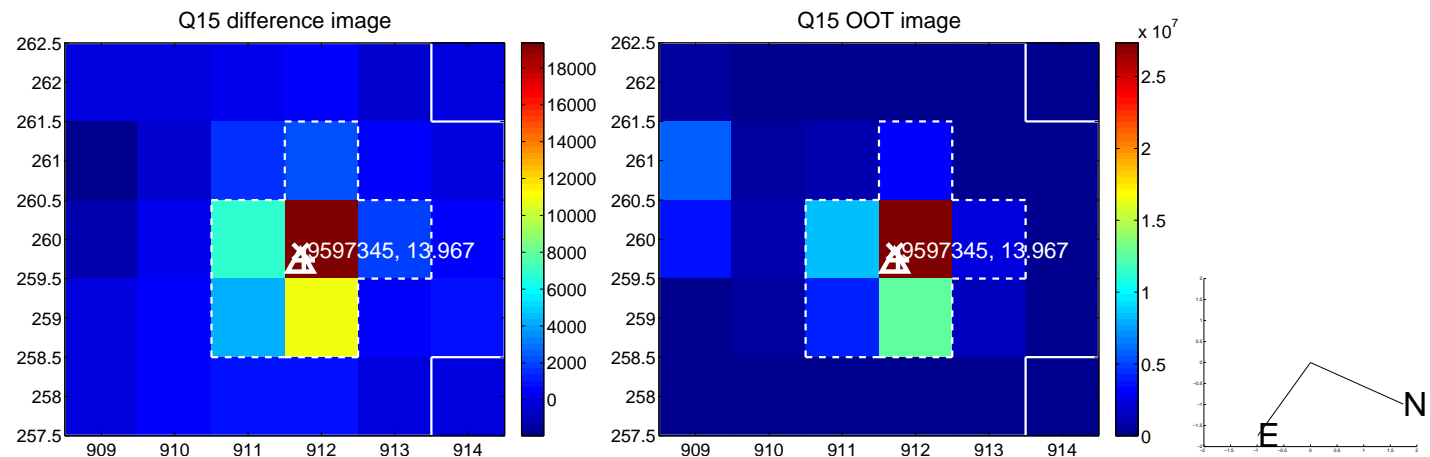
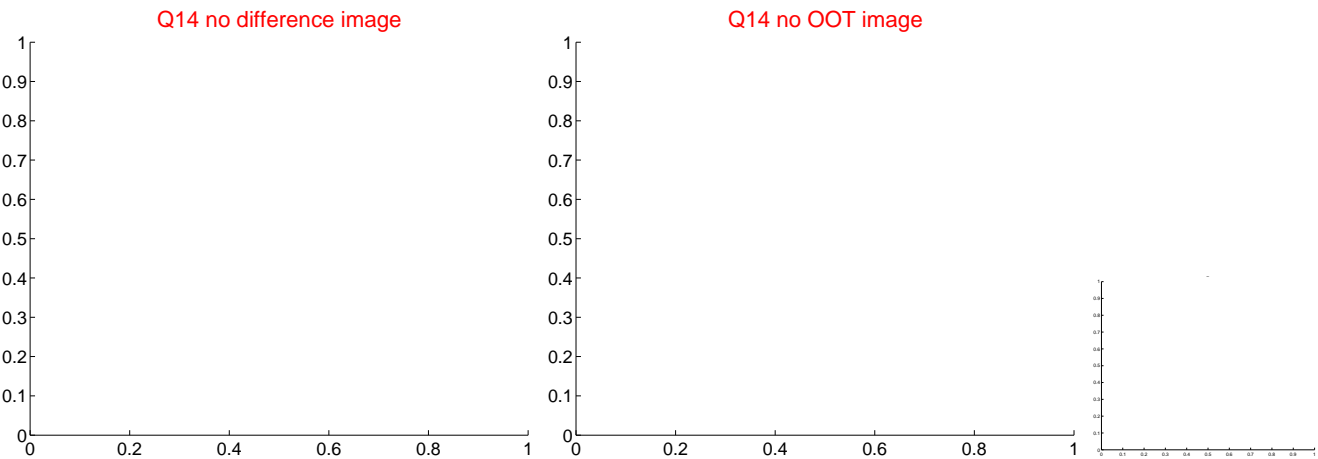
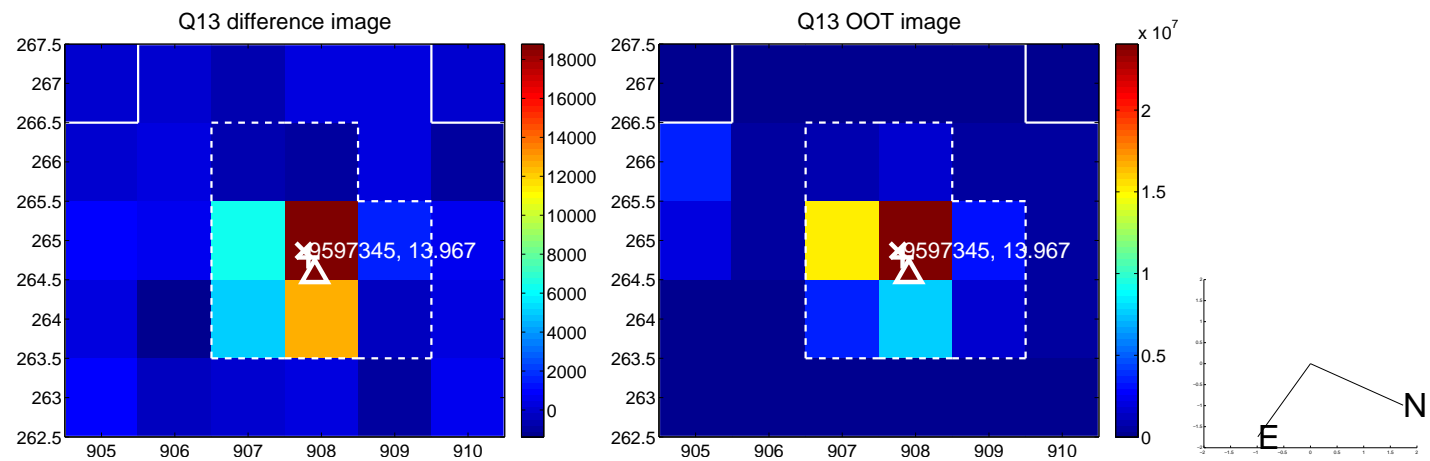
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



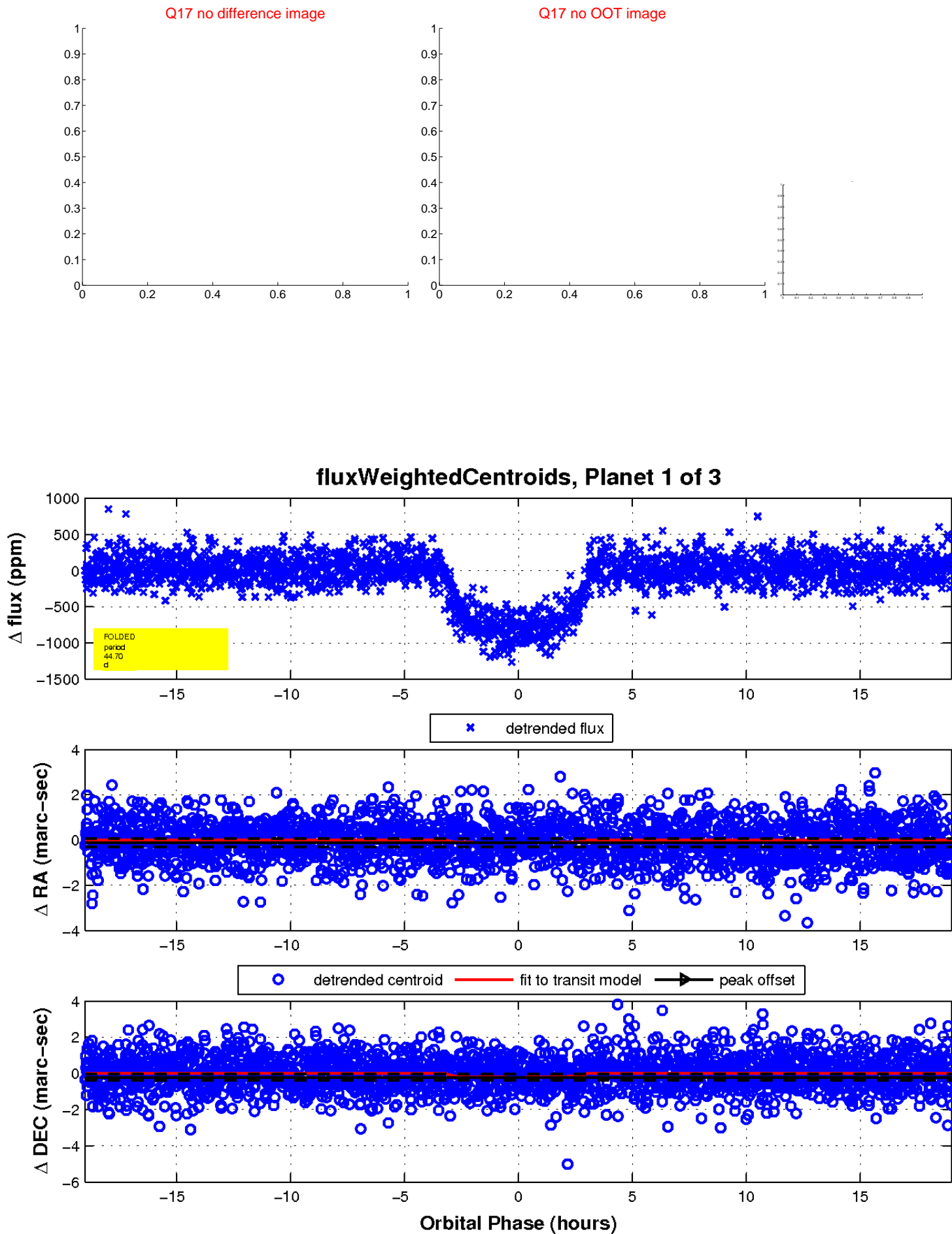
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



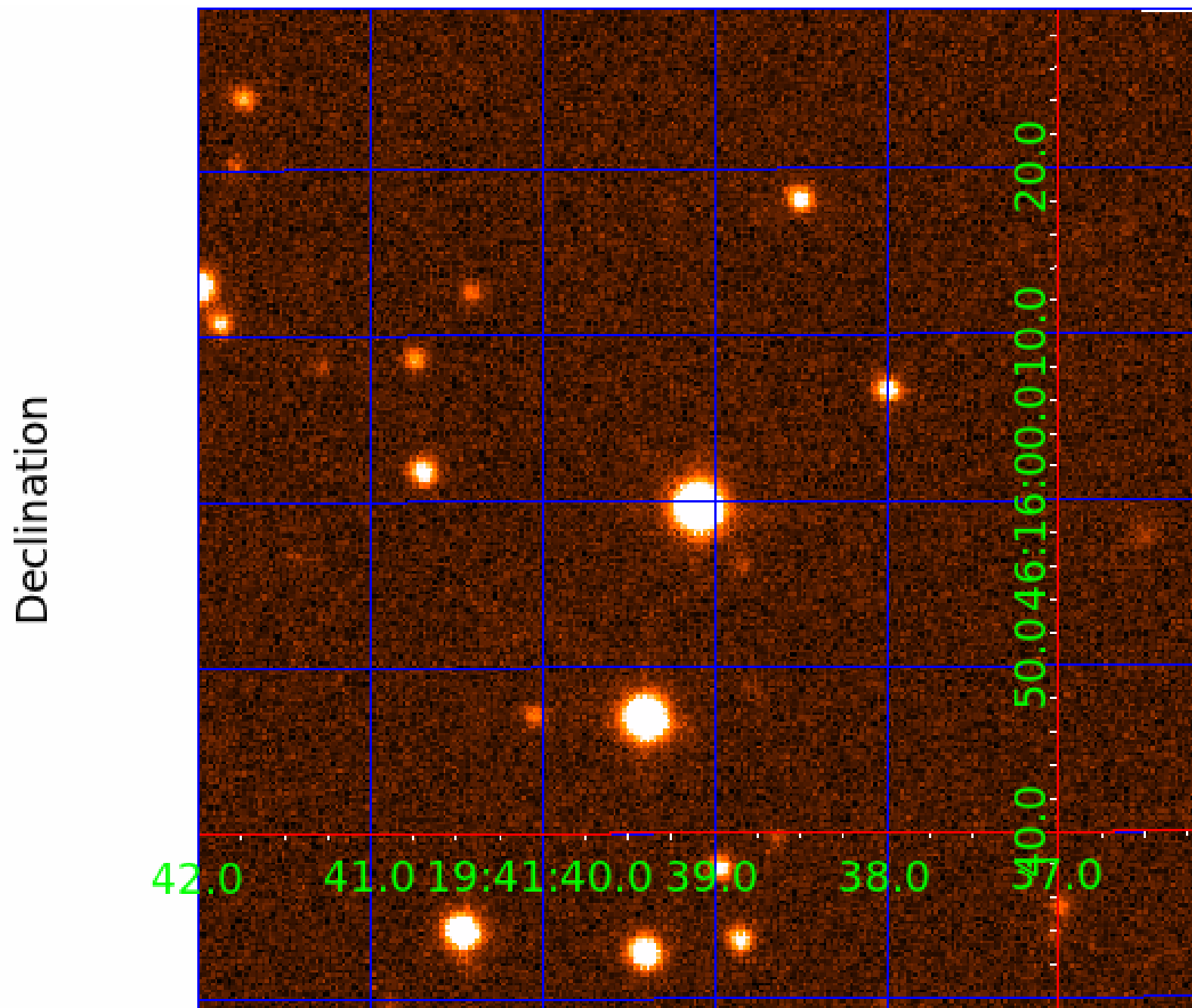
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009597345

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})
009597345-01	OBS	0711.01	44.699747	174.820354	835.8	6.340	58.8	59.2	1.05	5497	3.23	14.84
009597345-02	OBS	0711.02	3.619296	131.824770	200.3	3.188	40.8	43.6	1.05	5497	1.78	423.56
009597345-03	OBS	0711.03	124.525584	254.170921	650.7	9.864	28.5	34.3	1.05	5497	2.89	3.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597345-01	OBS	PC	0.48	0	0	0	0	CENT_KIC_POS
009597345-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
009597345-03	OBS	PC	0.77	0	0	0	0	CENT_KIC_POS

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

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

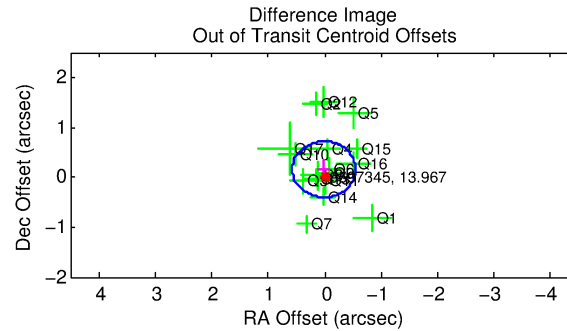
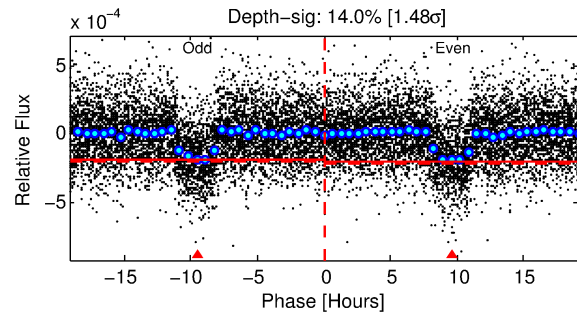
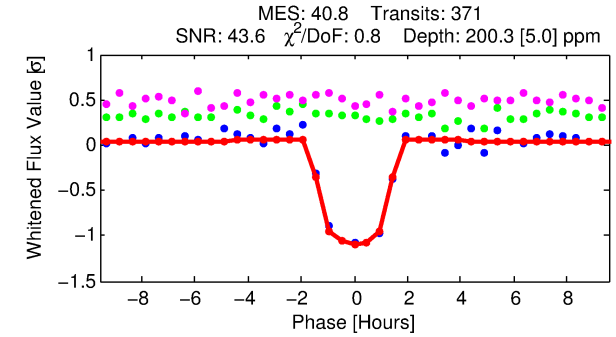
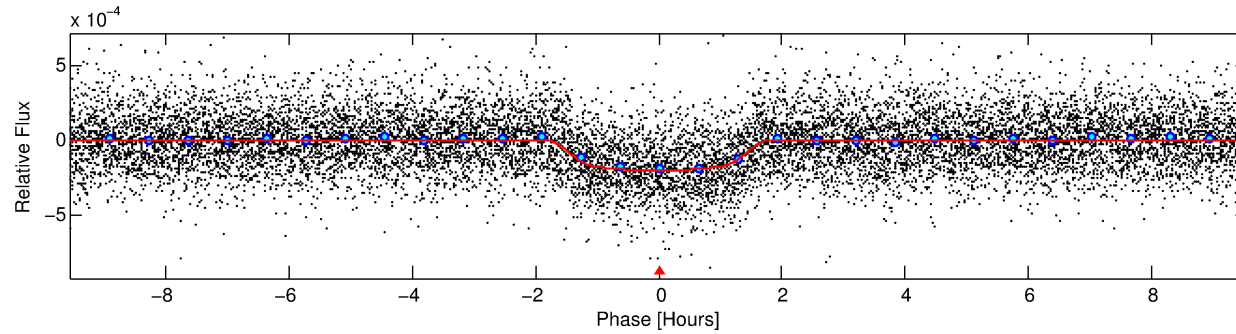
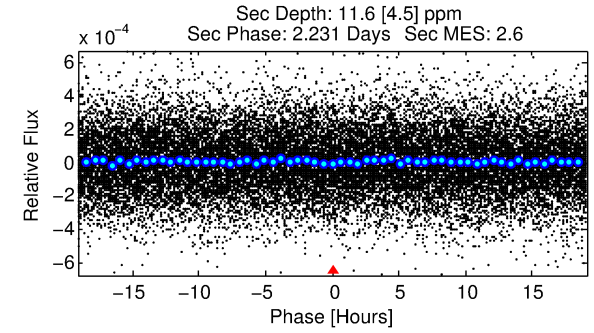
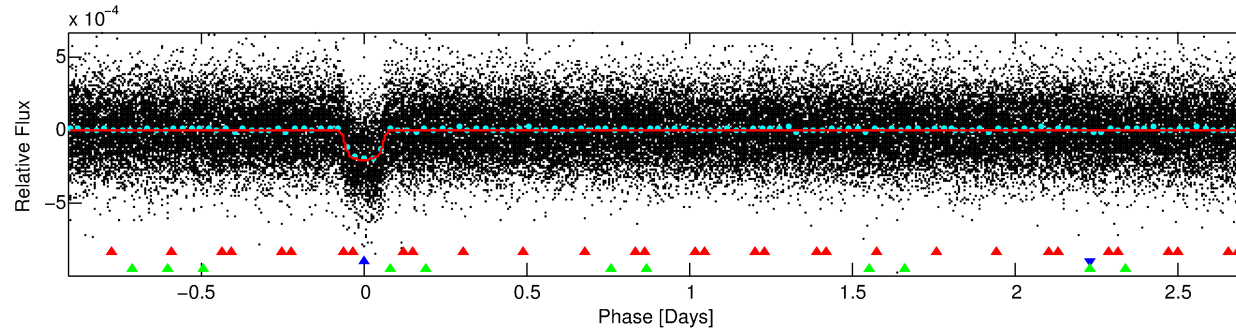
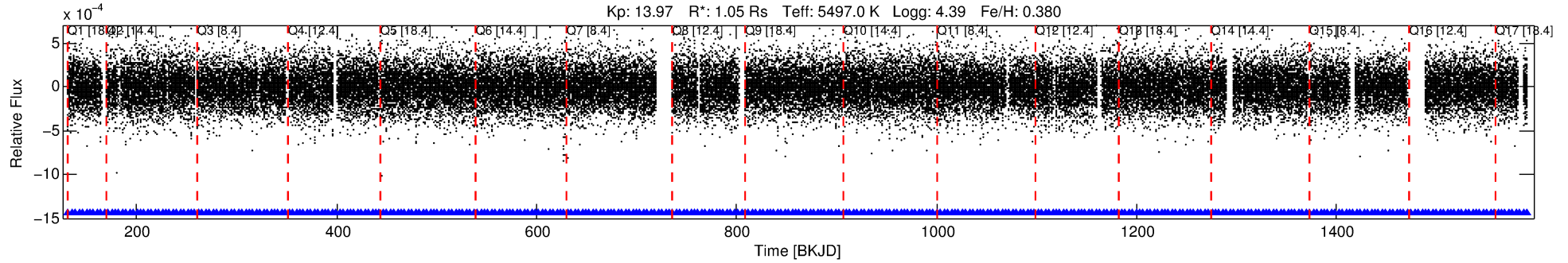
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009597345-02

No Significant Match Found

DV One-Page Summary

KIC: 9597345 Candidate: 2 of 3 Period: 3.619 d
KOI: K00711.02 Name: Kepler-218b Corr: 0.981



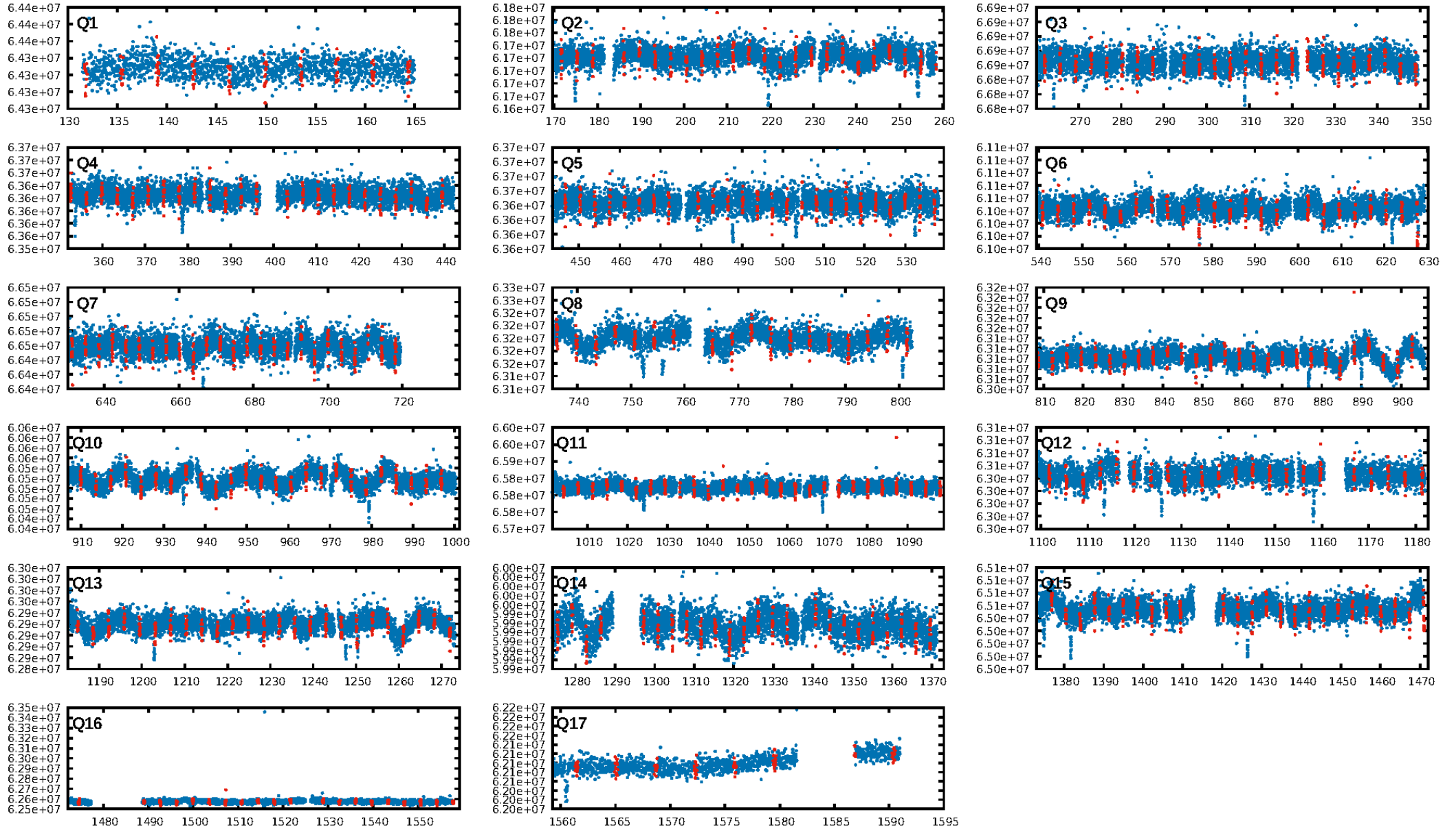
DV Fit Results:

Period = 3.61930 [0.00001] d
Epoch = 131.8248 [0.0012] BKJD
Rp/R* = 0.0156 [0.0023]
a/R* = 4.20 [2.47]
b = 0.90 [0.14]
Seff = 423.56 [90.18]
Teq = 1157 [62] K
Rp = 1.78 [0.38] Re
a = 0.0460 [0.0061] AU
Ag = 4.23 [2.20] [1.46σ]
Teffp = 2564 [314] K [4.41σ]

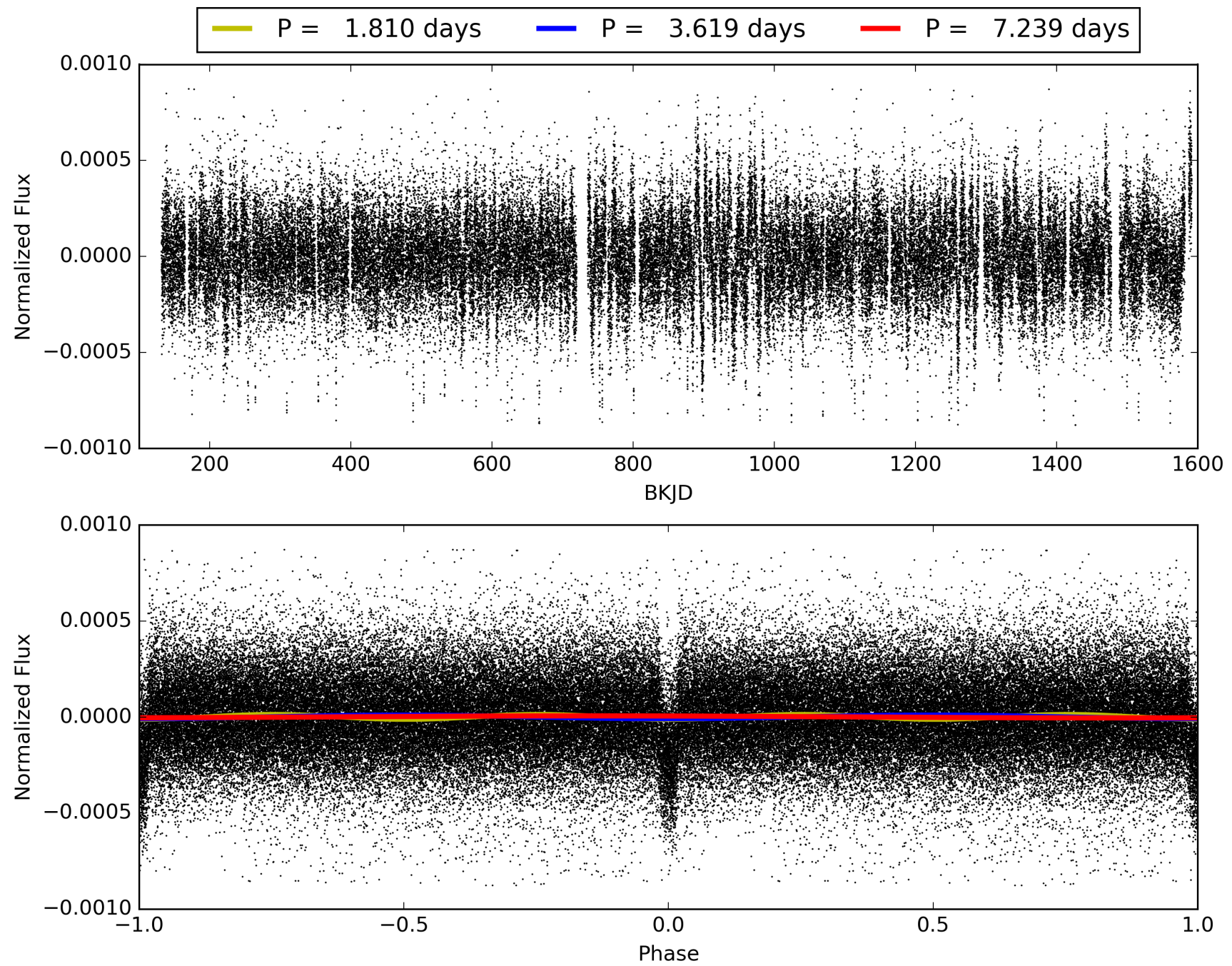
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [138.93σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [353/353]
GhostDiagnostic-chr: 8.905
Centroid-sig: 82.3%
Centroid-so: 0.237 arcsec [0.79σ]
OotOffset-rm: 0.157 arcsec [0.84σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.552 arcsec [3.12σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009597345-02, PDC Light Curves

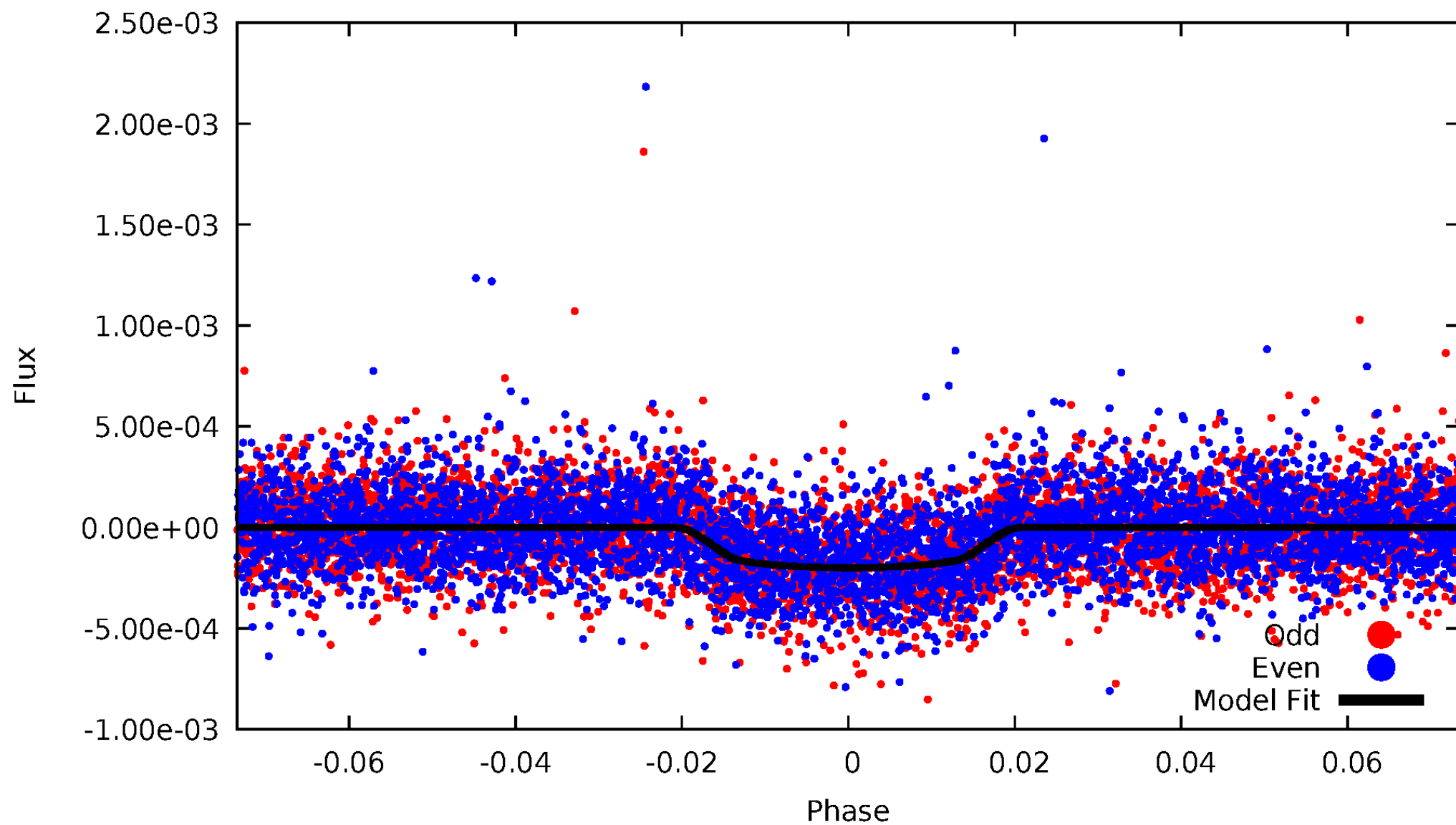


TCE 009597345-02



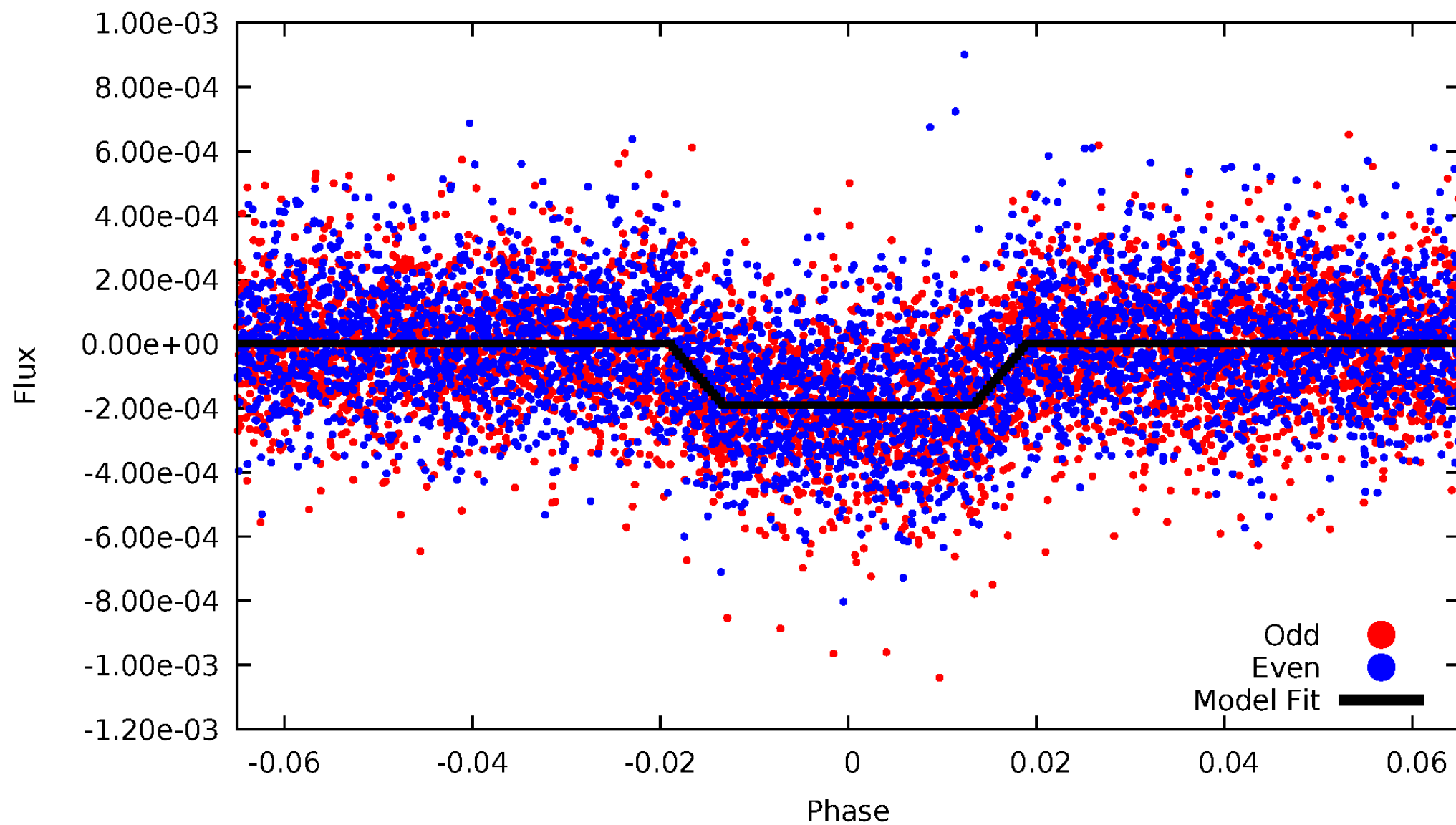
DV Odd/Even

TCE 009597345-02



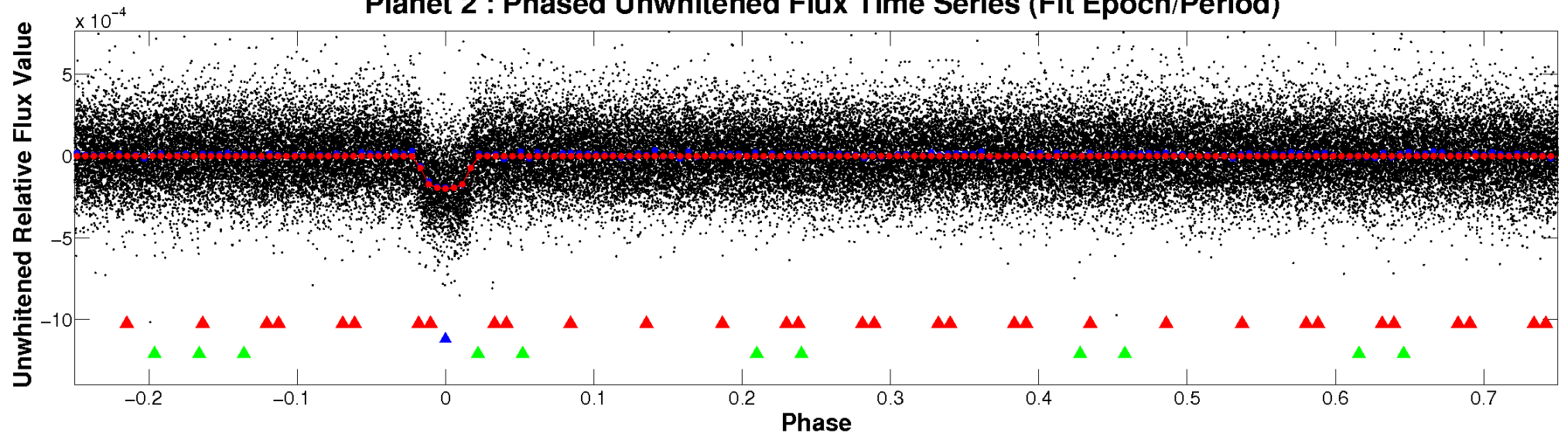
ALT Odd/Even

TCE 009597345-02

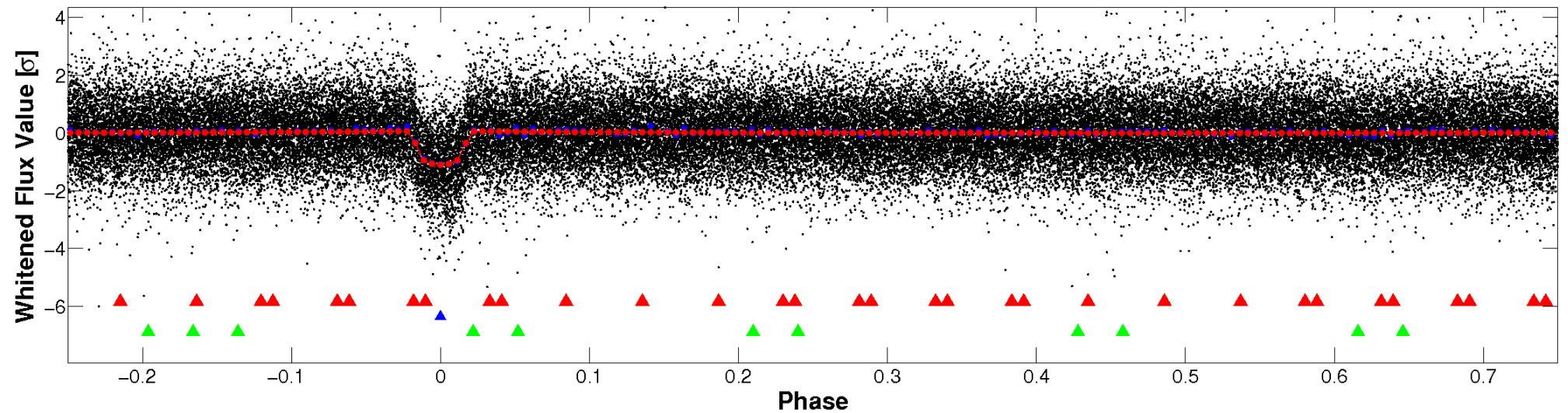


Non-Whitened Vs. Whitened Light Curve

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

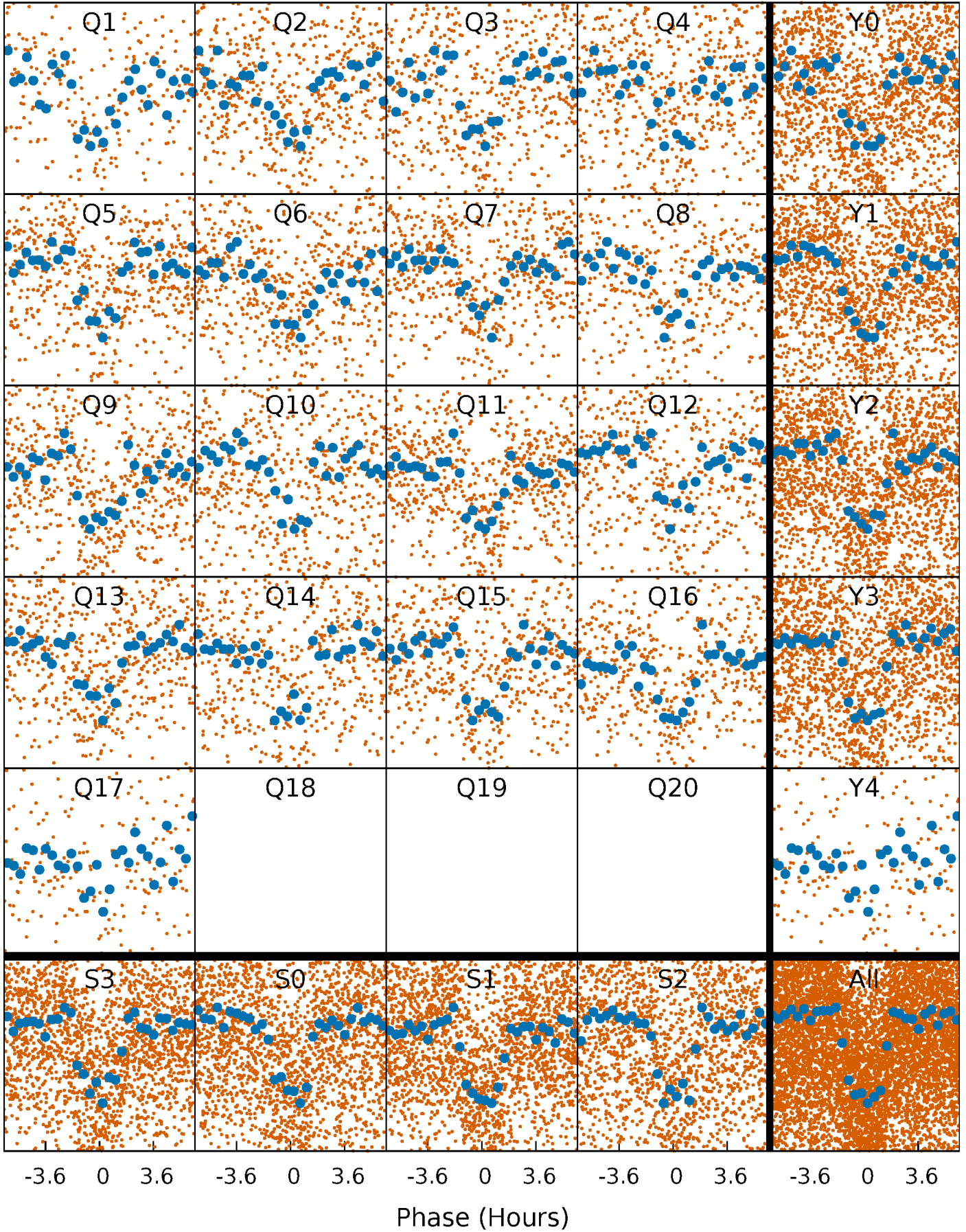


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



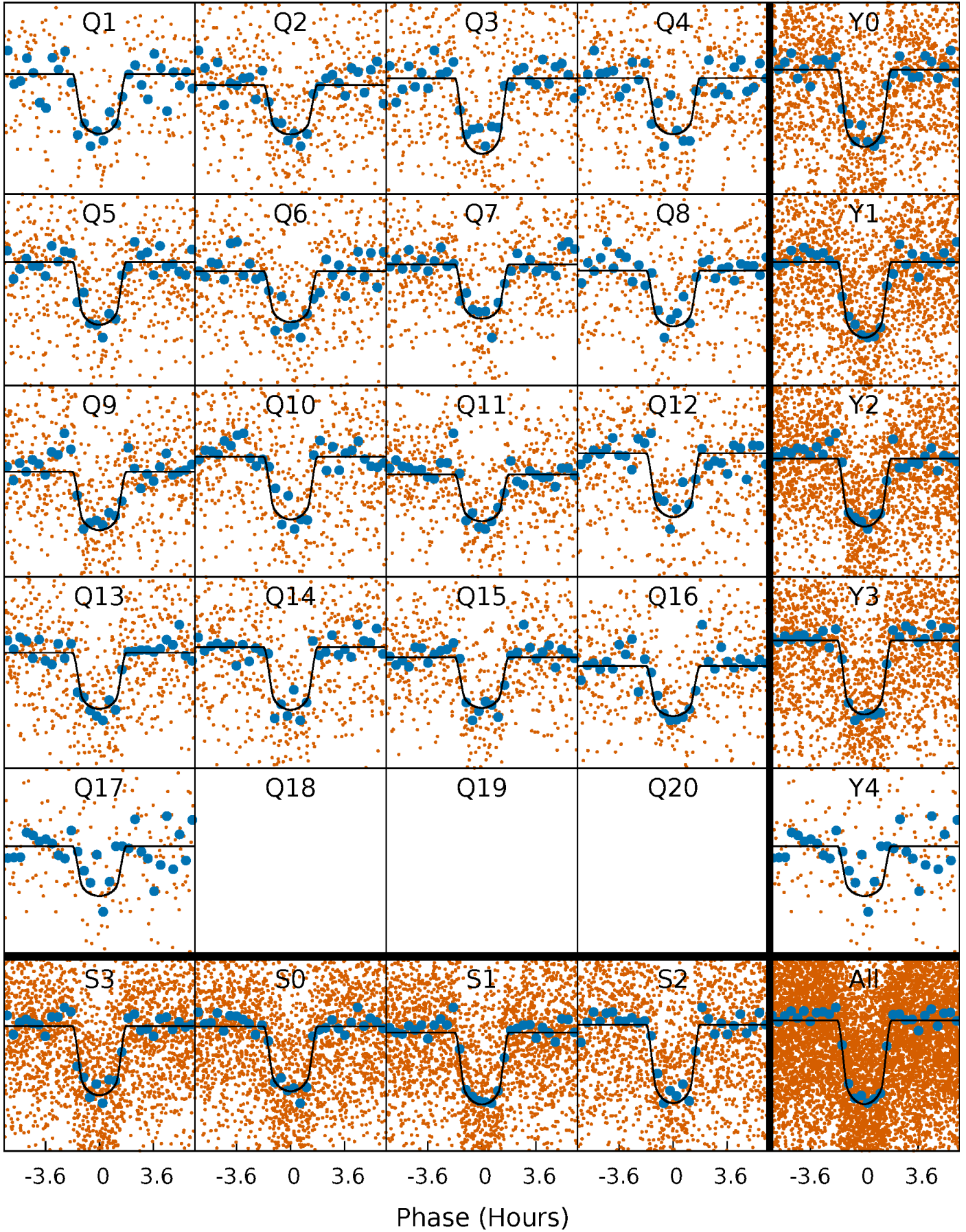
PDC Quarter-Phased Transit Curves

TCE 009597345-02 P= 3.619296 Days $T_0=131.824770$ (BKJD)



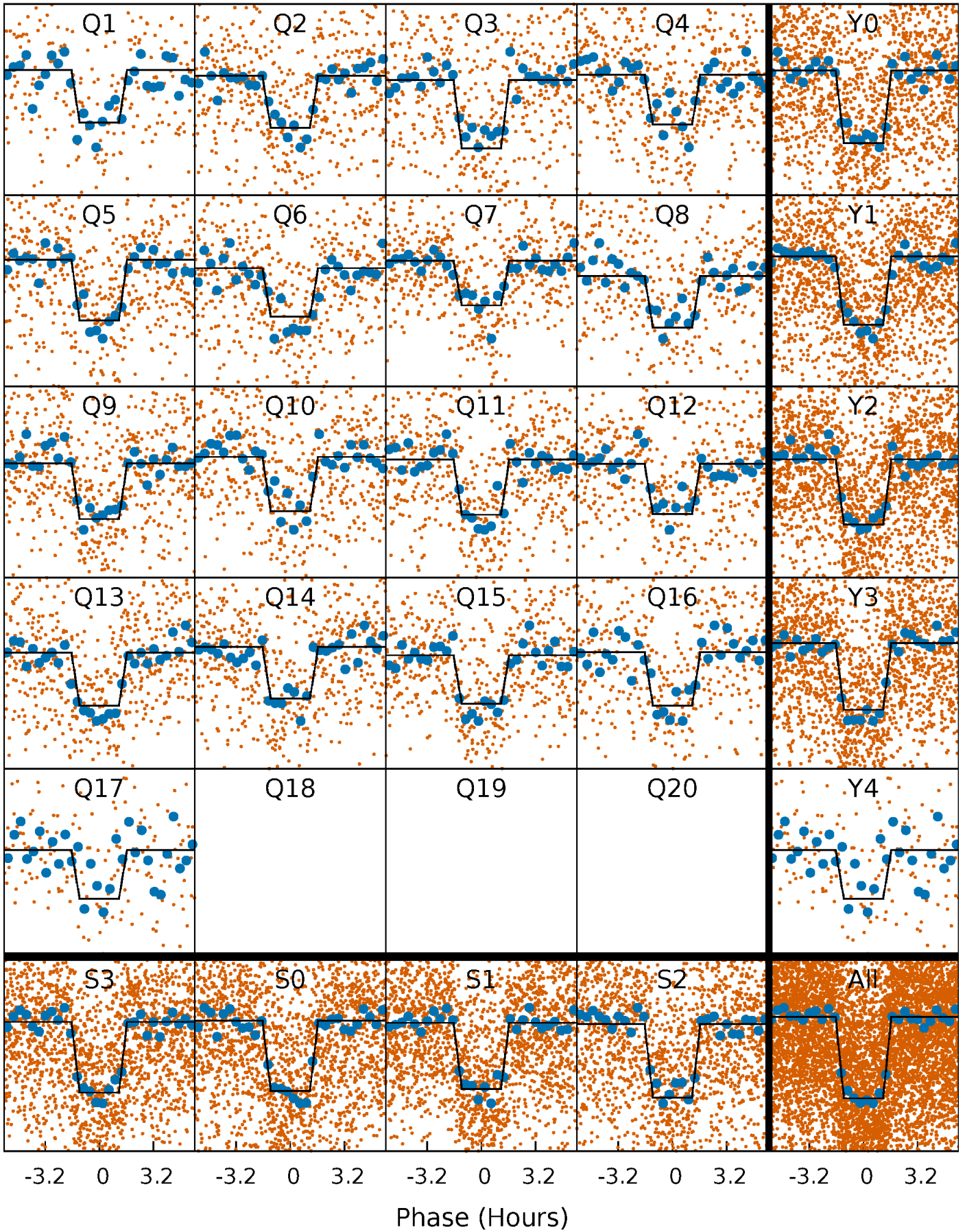
DV Quarter-Phased Transit Curves

TCE 009597345-02 P= 3.619296 Days $T_0=131.824770$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

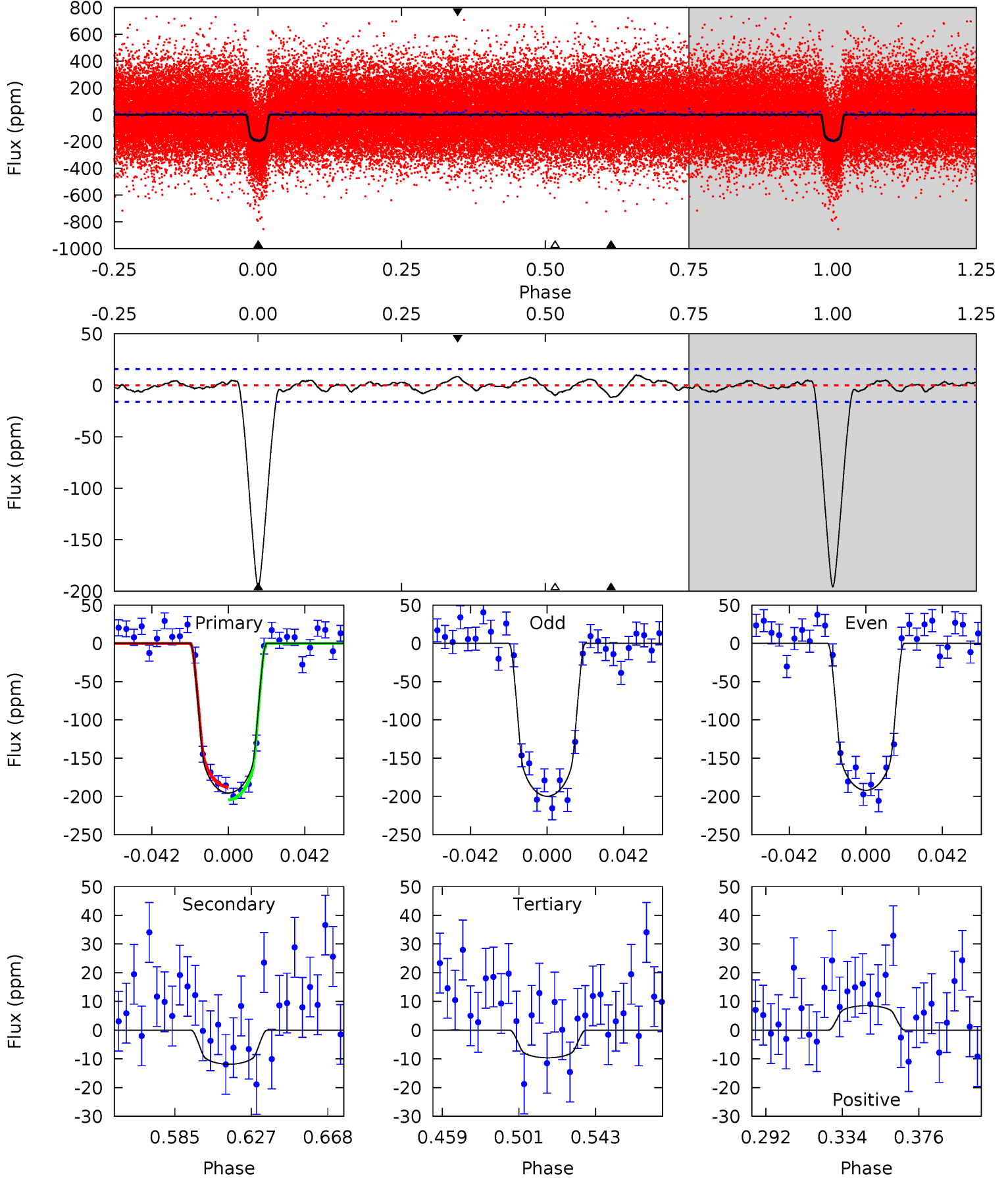
TCE 009597345-02 P= 3.619316 Days $T_0=131.821425$ (BKJD)



DV Model-Shift Uniqueness Test

009597345-02, P = 3.619296 Days, E = 128.205474 Days

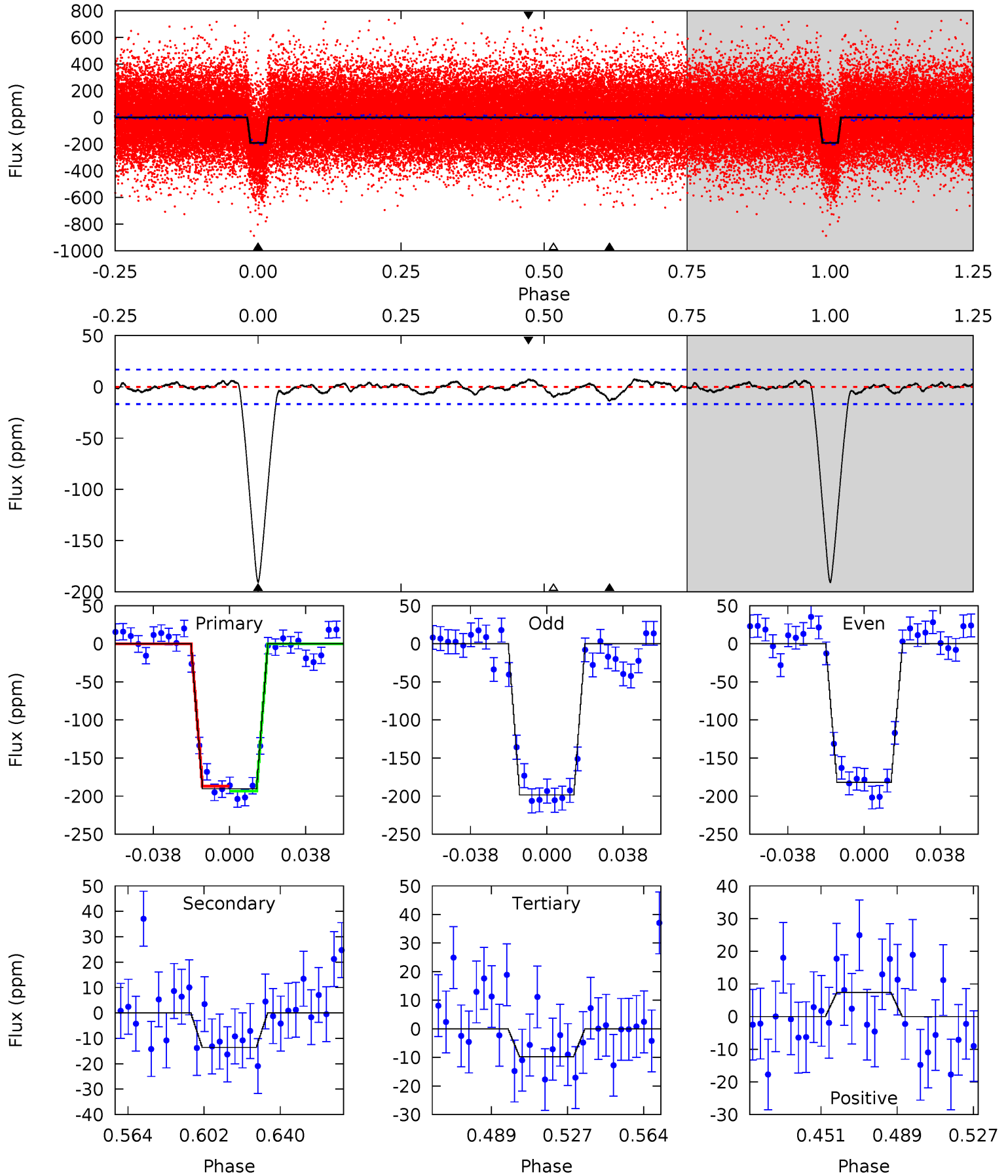
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.4	3.54	2.88	2.55	4.74	2.04	1.17	55.5	55.9	0.67	0.99	1.16	0.99	0.05	2.55



Alt Model-Shift Uniqueness Test

009597345-02, P = 3.619316 Days, E = 128.202109 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.9	3.84	2.76	2.09	4.77	2.08	1.00	51.2	51.8	1.09	1.75	2.32	1.04	0.04	0.92



Stellar Parameters For KIC 009597345

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5497^{+109}_{-109}	$4.394^{+0.090}_{-0.110}$	$0.380^{+0.100}_{-0.150}$	$1.046^{+0.161}_{-0.111}$	$0.988^{+0.049}_{-0.055}$	$1.216^{+0.439}_{-0.381}$
	+2%/-2%	+2%/-3%	+26%/-39%	+15%/-11%	+5%/-6%	+36%/-31%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 009597345-02 / KOI 0711.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 3	$1.78^{+0.30}_{-0.26}$	1616^{+66}_{-58}	3123^{+214}_{-209}	$4.193^{+2.251}_{-1.606}$
Alt.	-14 ± 4	$1.60^{+0.32}_{-0.29}$	1620^{+74}_{-60}	3315^{+253}_{-233}	$6.004^{+3.618}_{-2.231}$

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 $A_{obs} \gg 1.0$

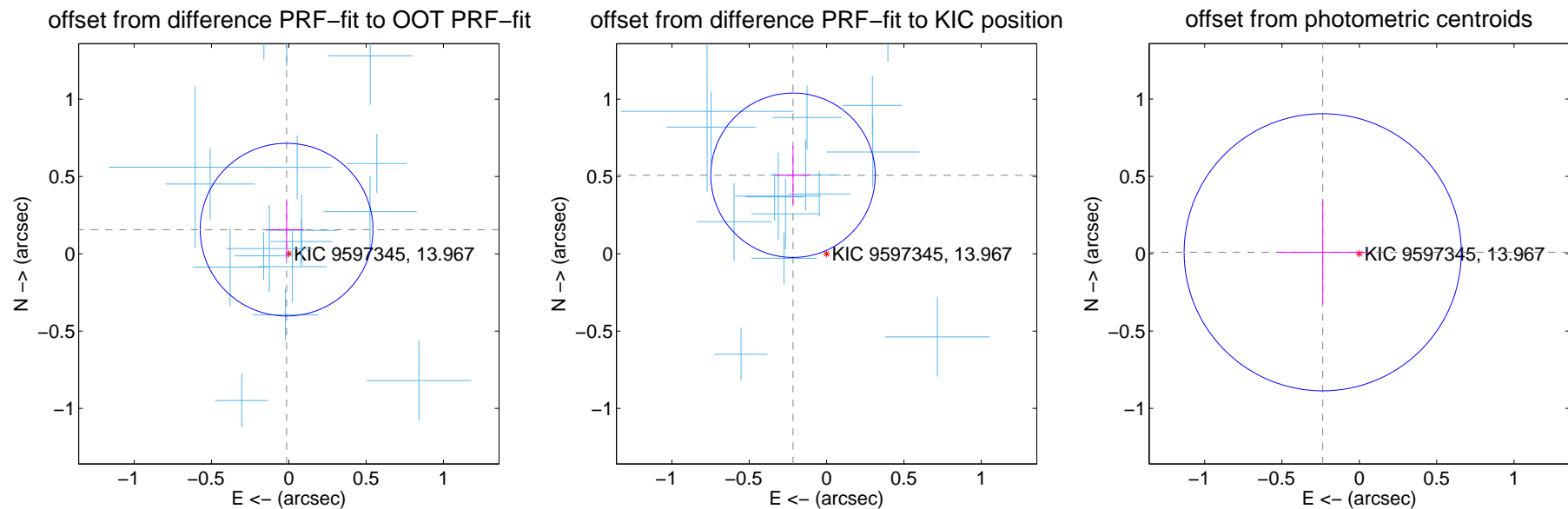
DV Centroid Data

Supplemental centroid analysis for 009597345-02. Kepler magnitude: 13.97. Transit SNR 43.62

There are 17 quarters with good PRF difference image offsets

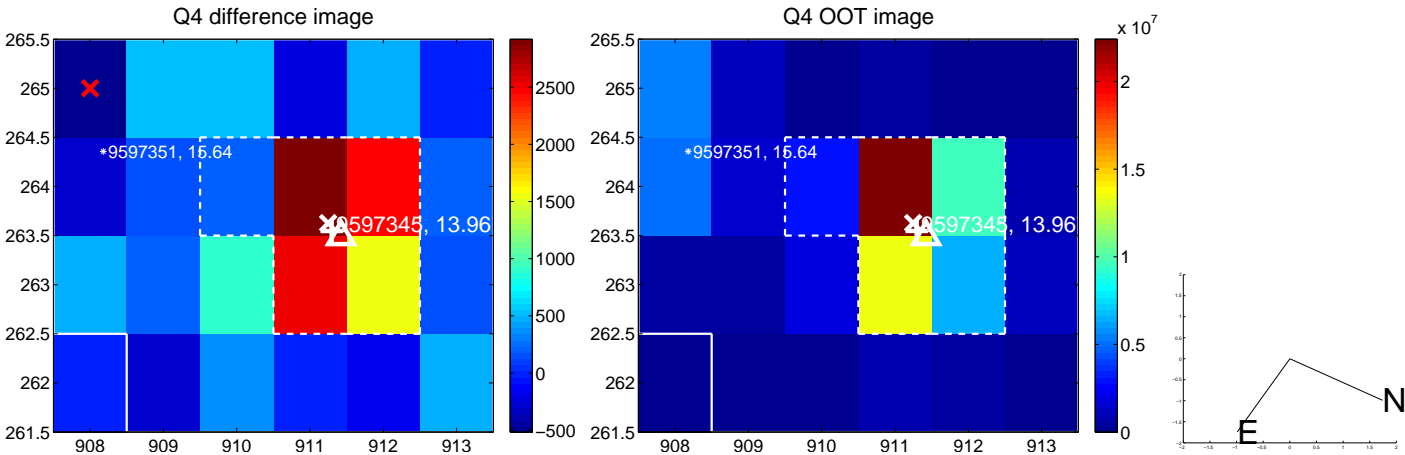
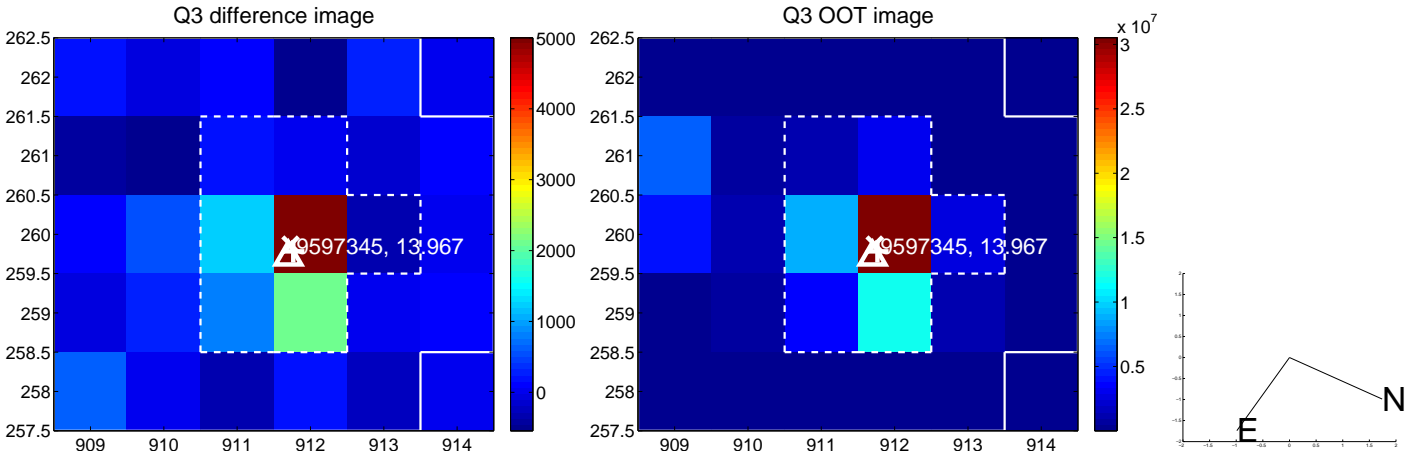
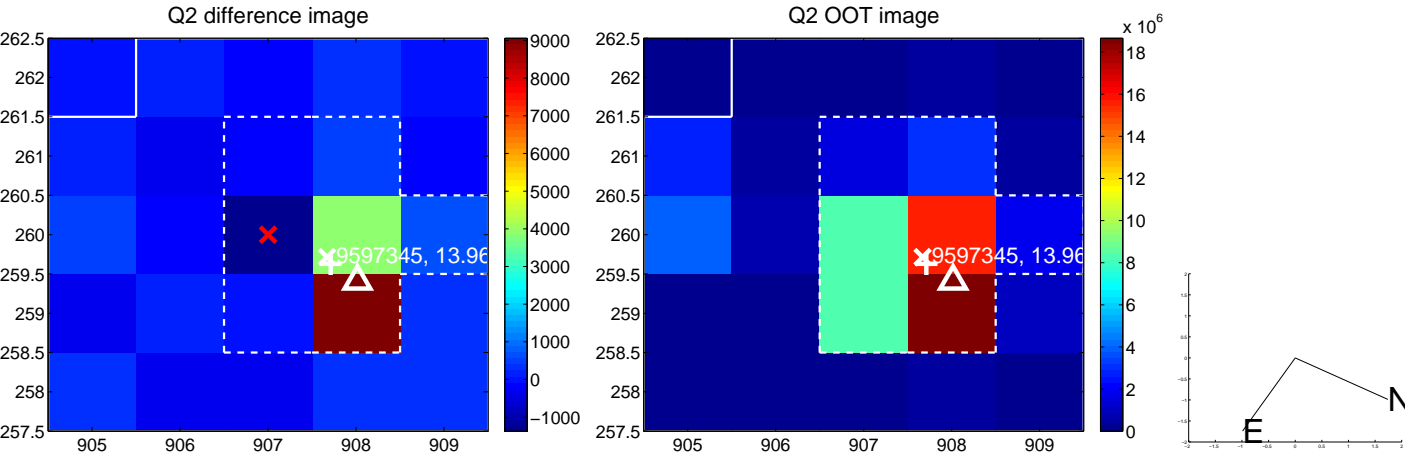
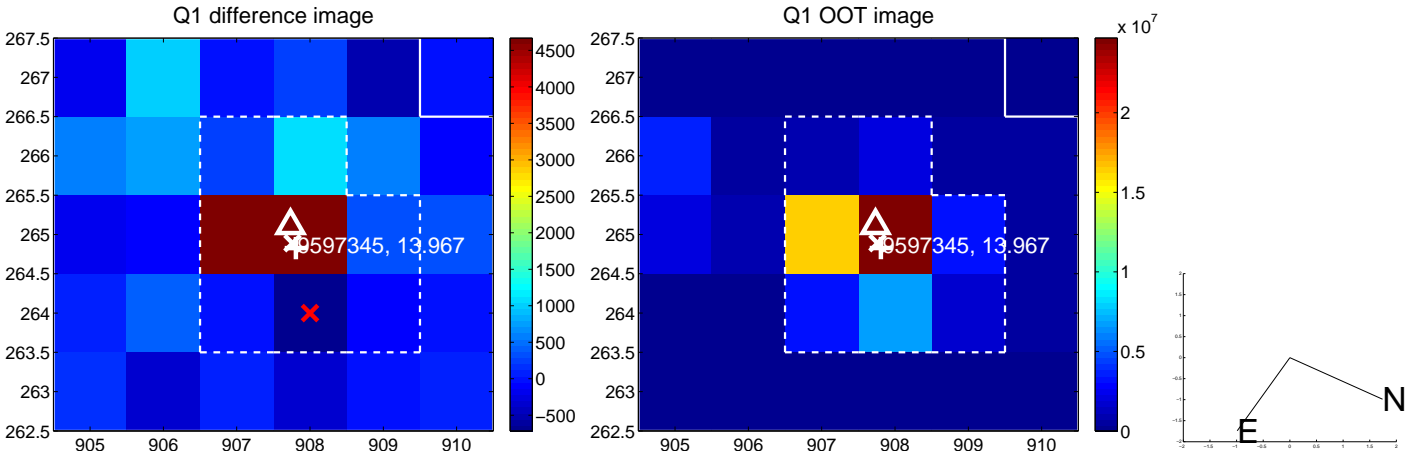
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.157 ± 0.186	0.84	0.014 ± 0.113	0.156 ± 0.187
PRF-fit source offset from KIC position	0.552 ± 0.177	3.12	0.217 ± 0.116	0.508 ± 0.186
photometric centroid source offset	0.24 ± 0.30	0.79	0.24 ± 0.30	0.01 ± 0.33

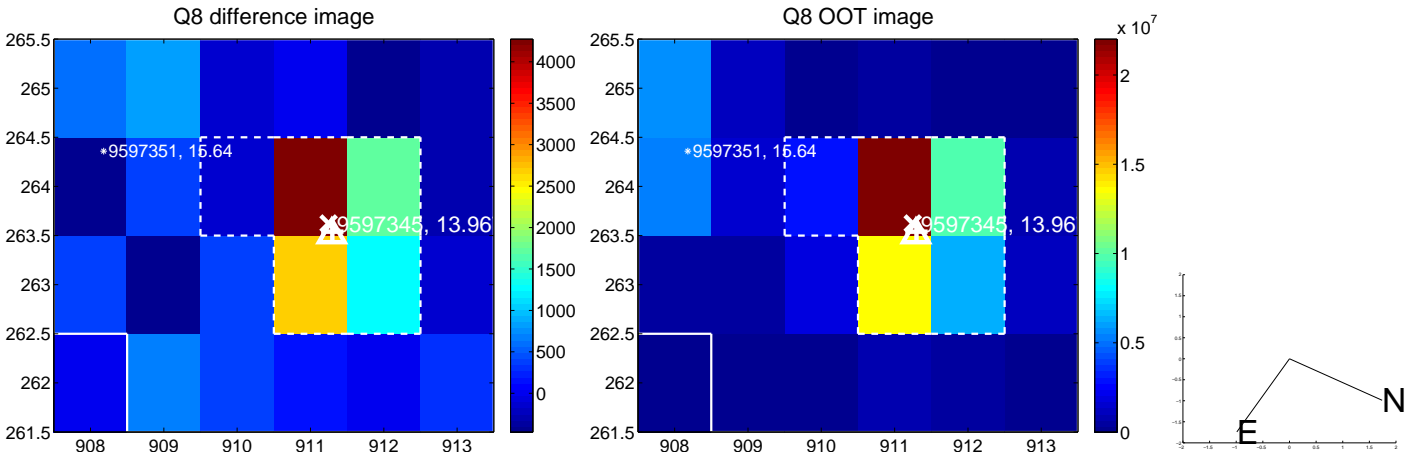
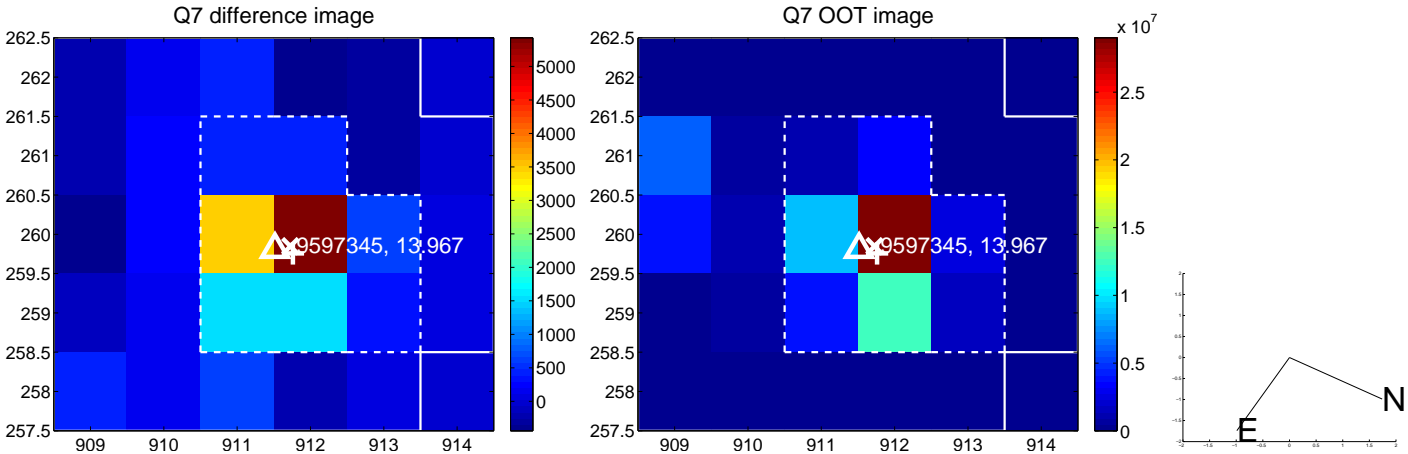
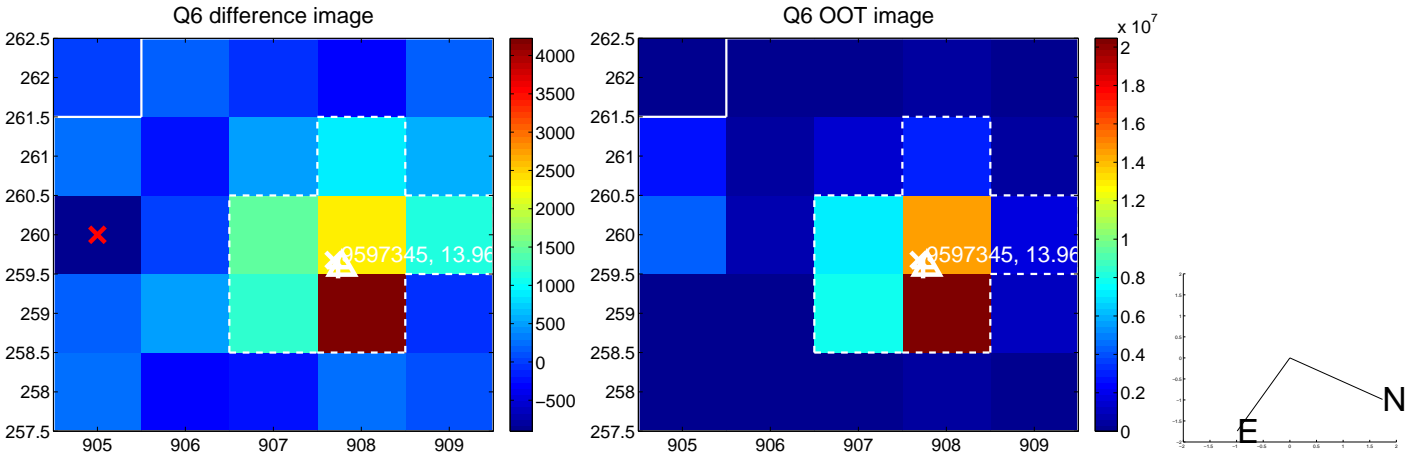
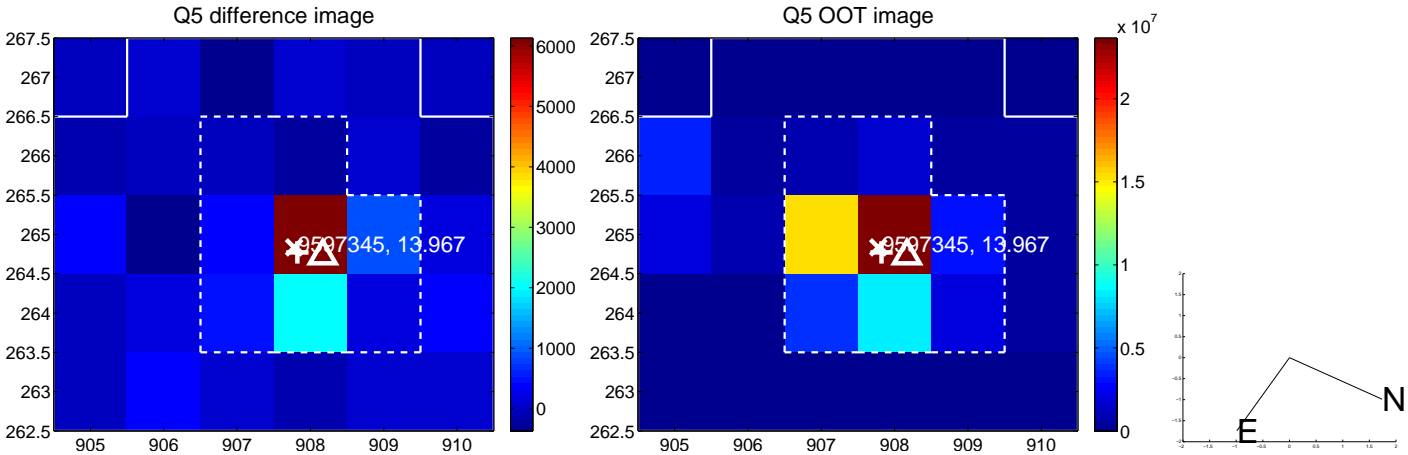


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

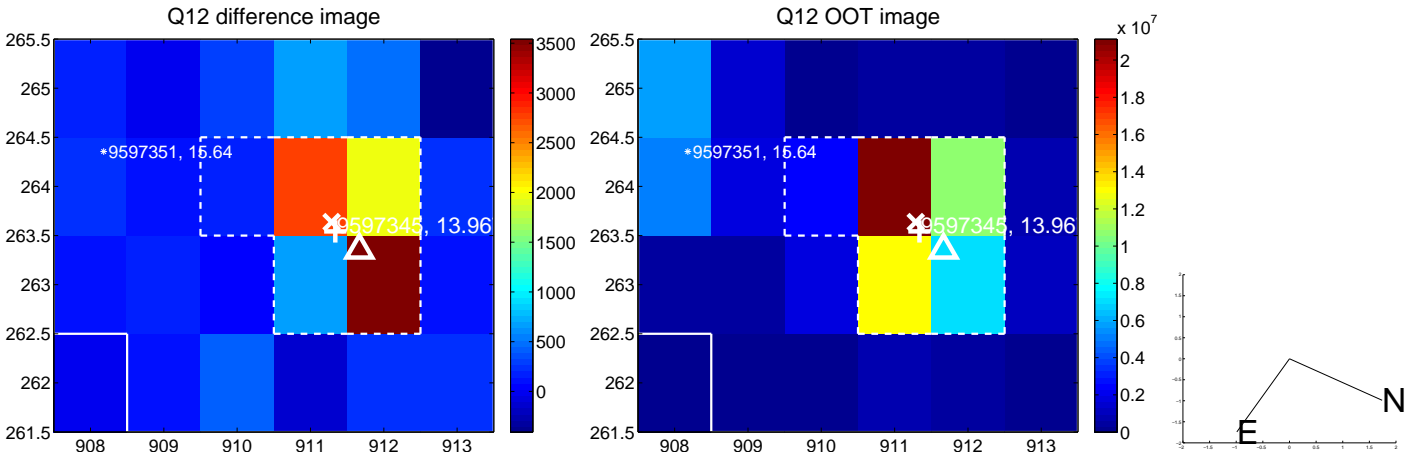
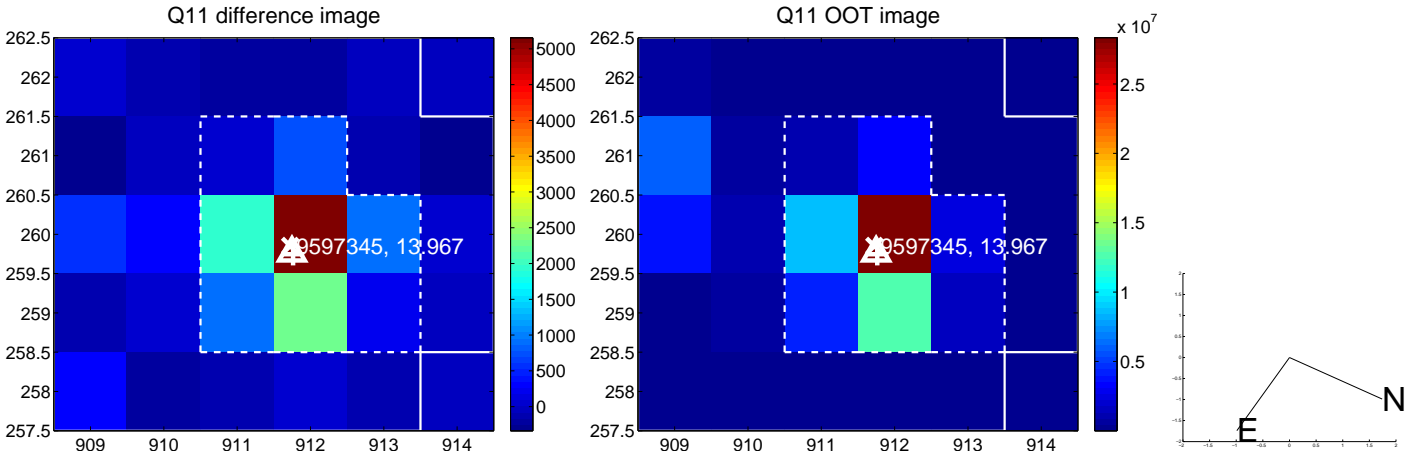
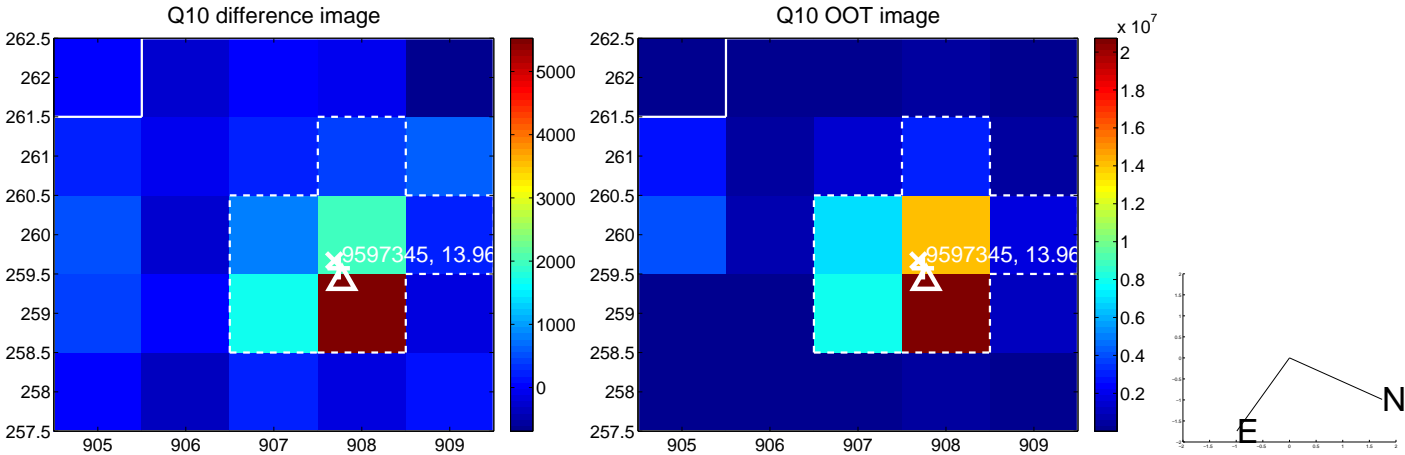
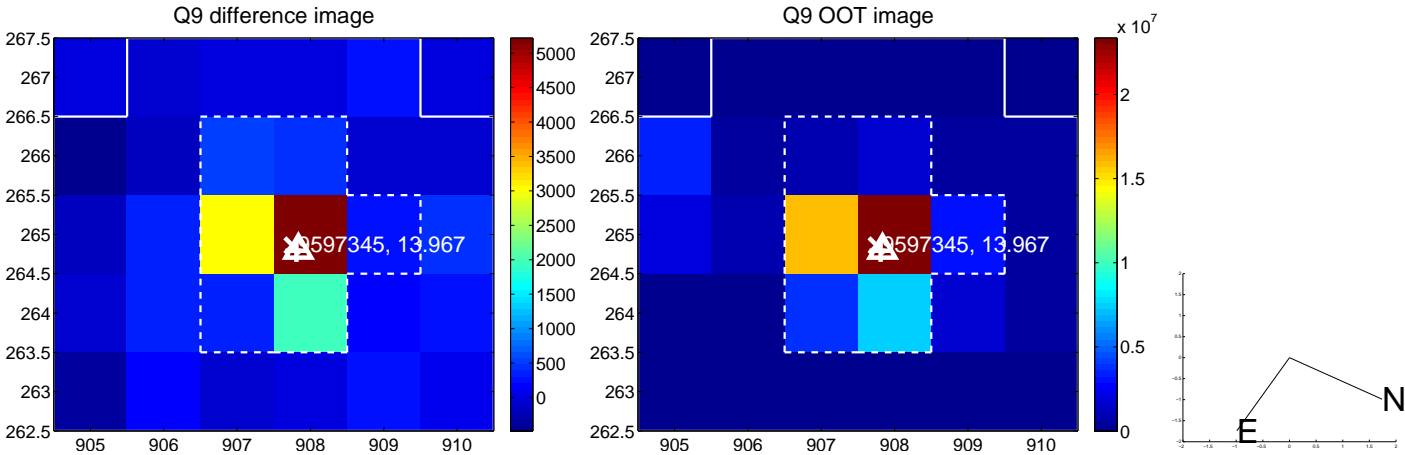
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



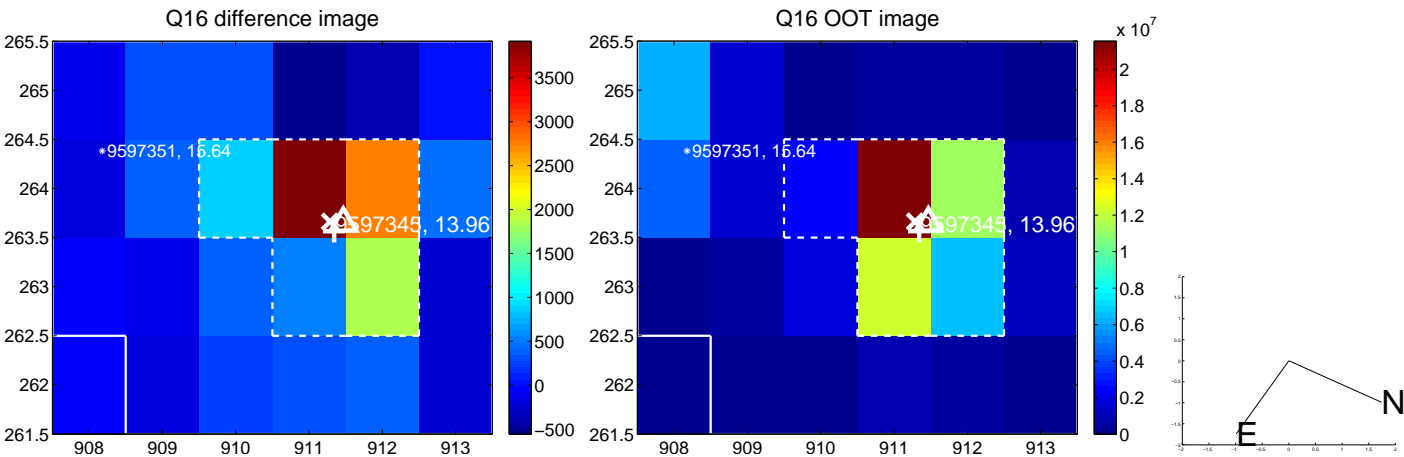
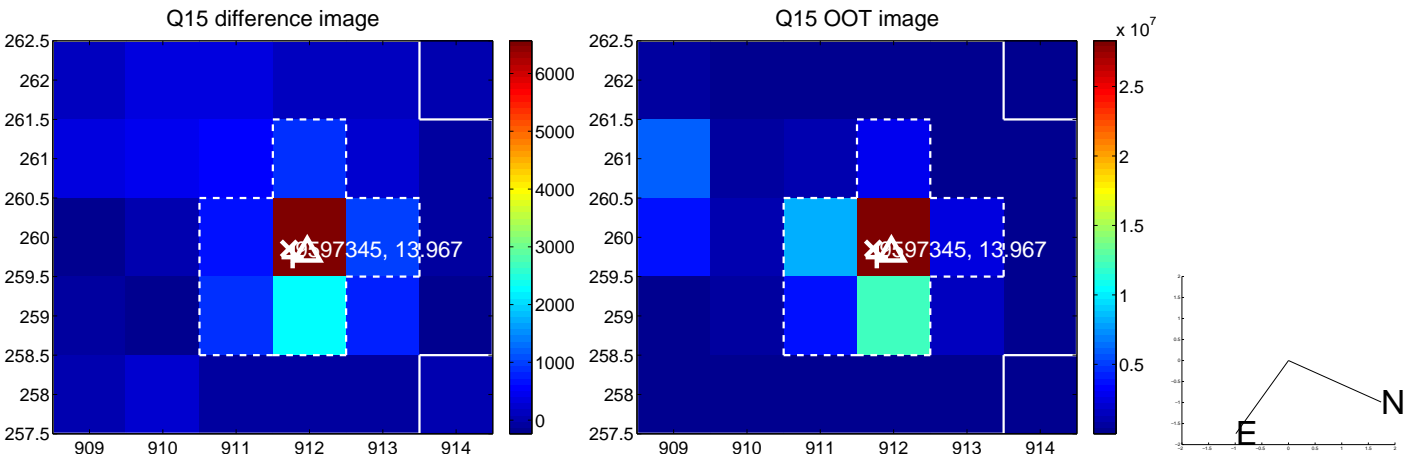
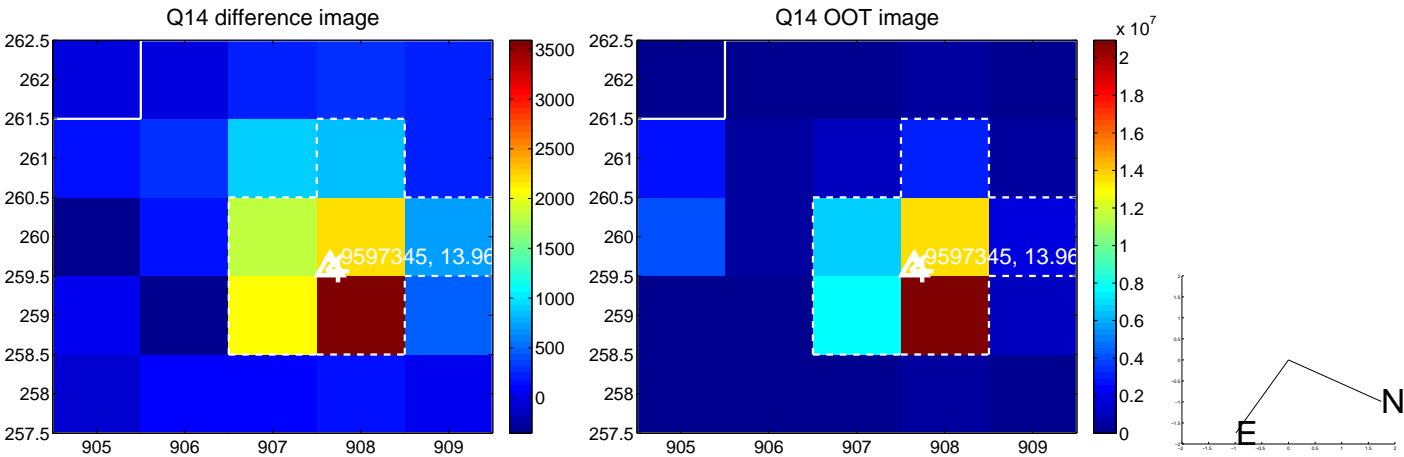
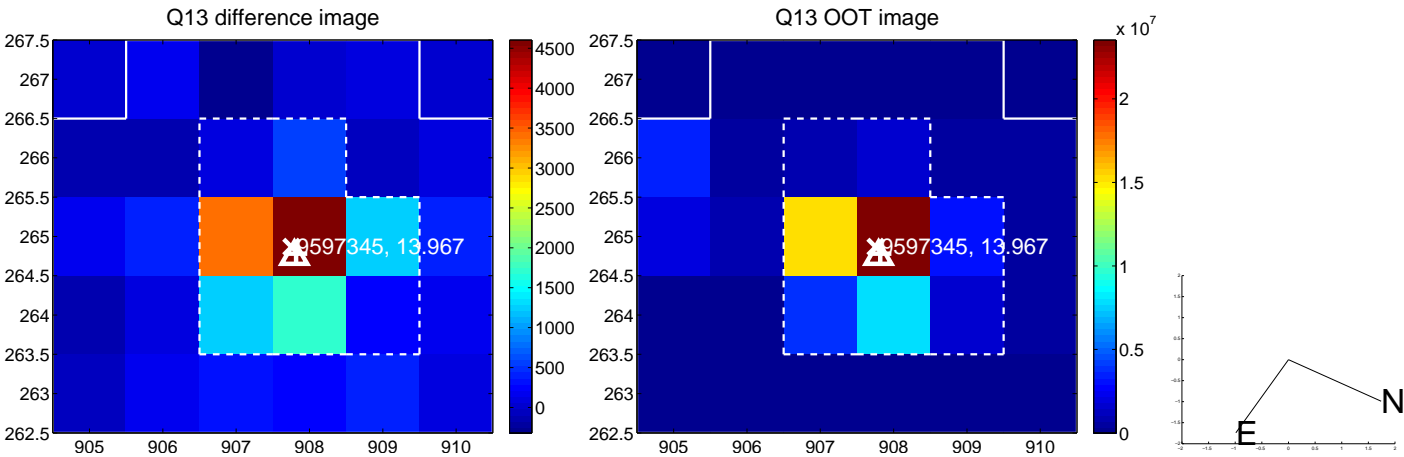
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



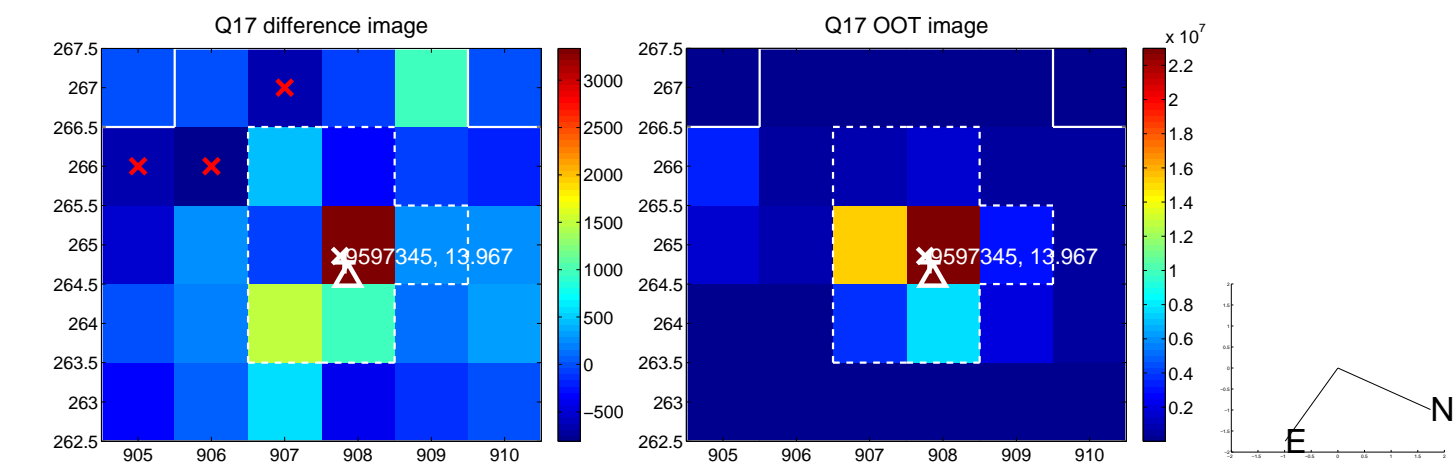
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



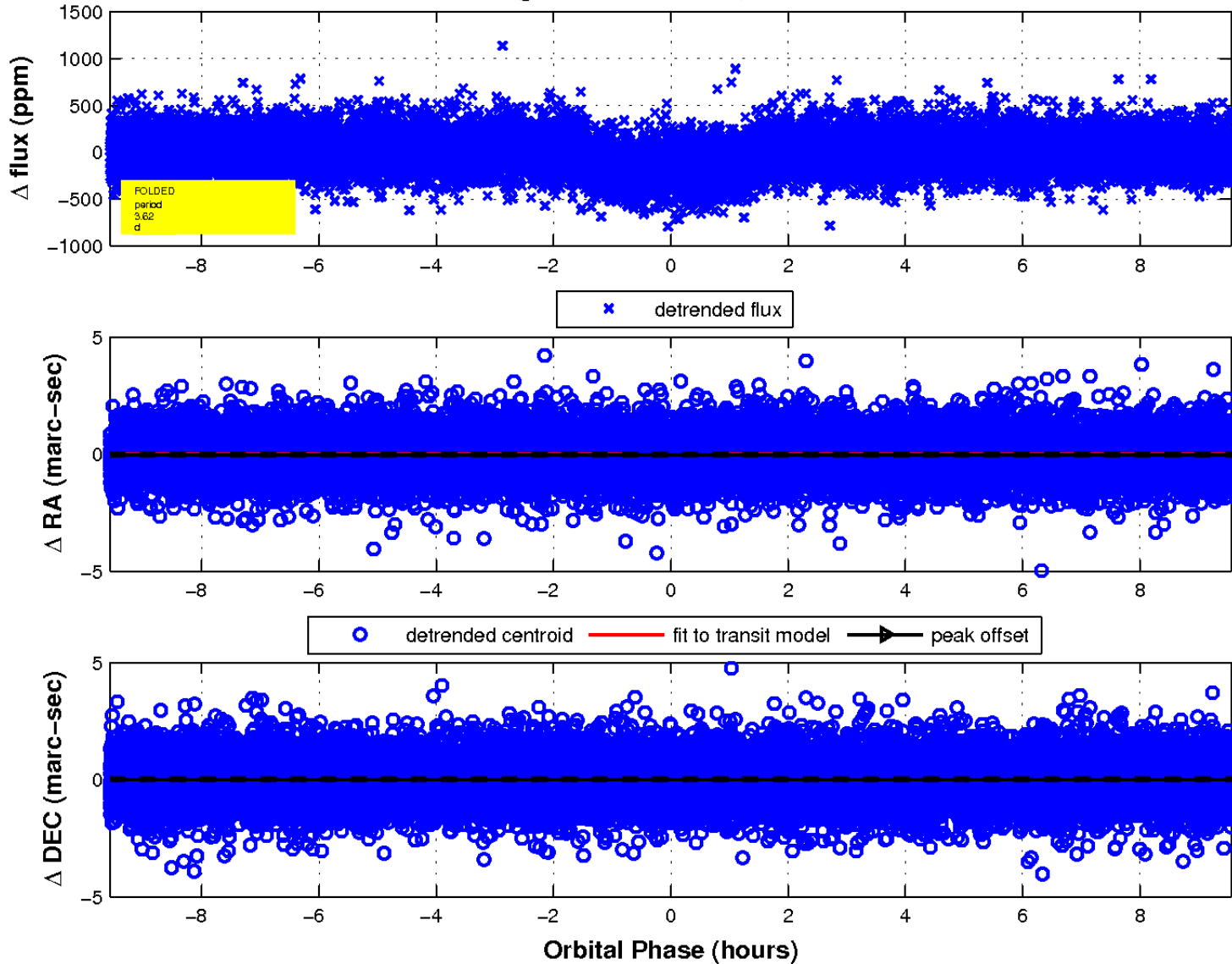
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



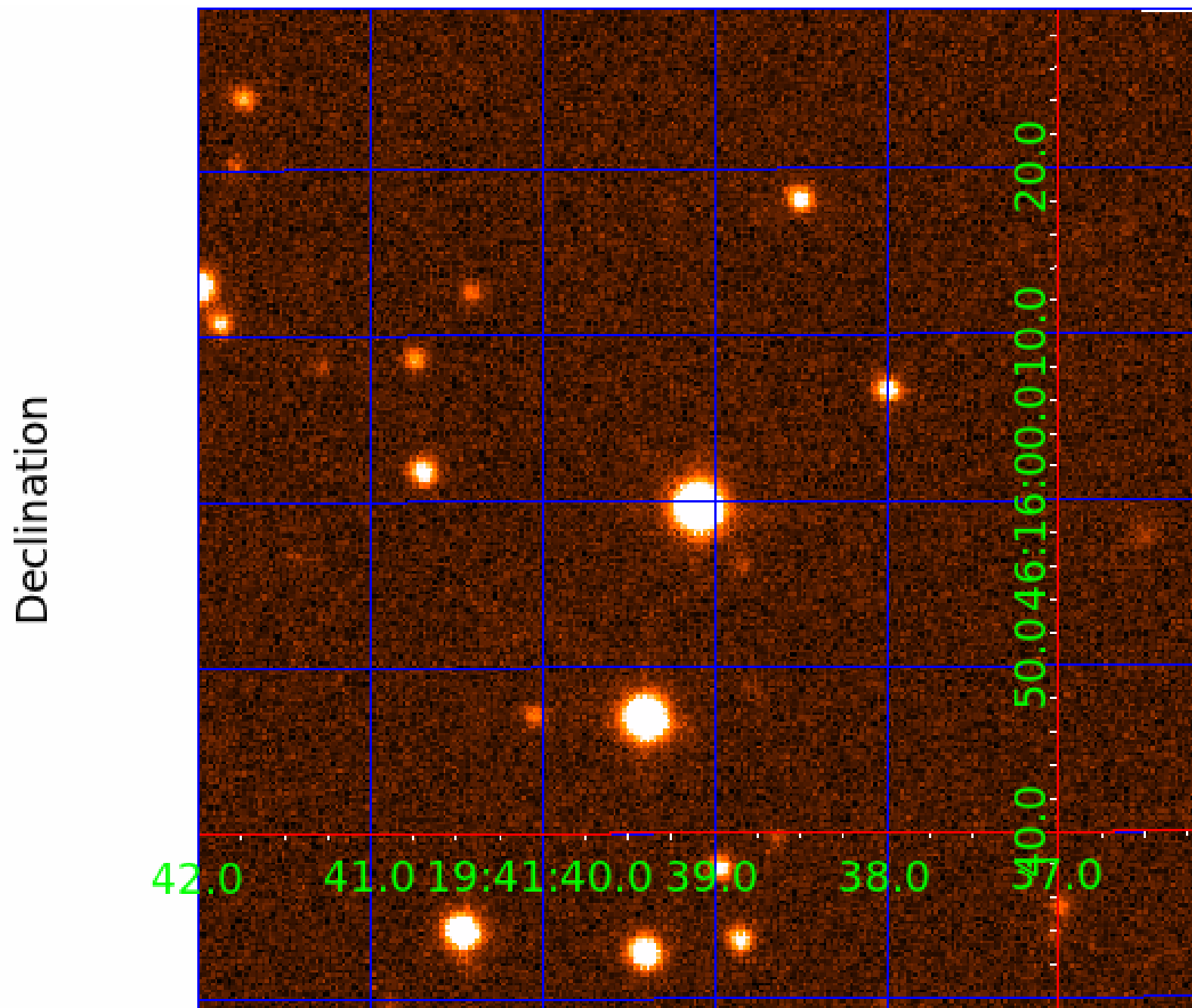
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 3



UKIRT Image



KIC 009597345

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})
009597345-01	OBS	0711.01	44.699747	174.820354	835.8	6.340	58.8	59.2	1.05	5497	3.23	14.84
009597345-02	OBS	0711.02	3.619296	131.824770	200.3	3.188	40.8	43.6	1.05	5497	1.78	423.56
009597345-03	OBS	0711.03	124.525584	254.170921	650.7	9.864	28.5	34.3	1.05	5497	2.89	3.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597345-01	OBS	PC	0.48	0	0	0	0	CENT_KIC_POS
009597345-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
009597345-03	OBS	PC	0.77	0	0	0	0	CENT_KIC_POS

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

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

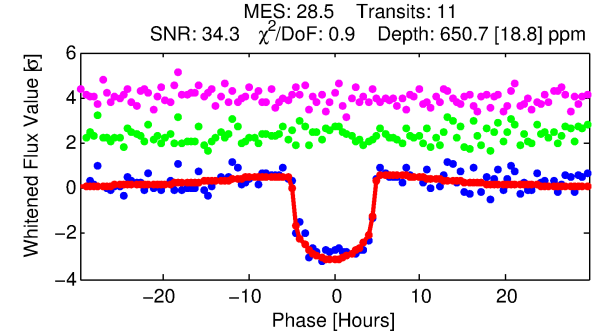
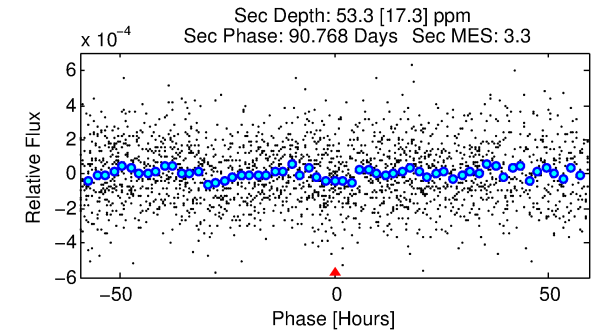
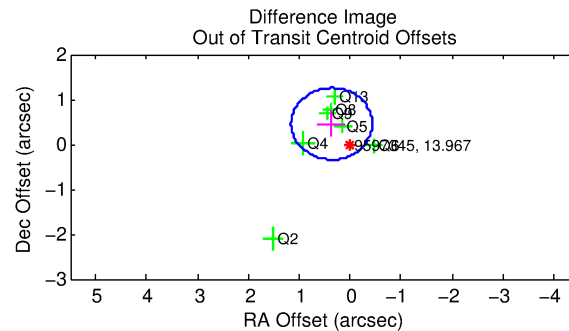
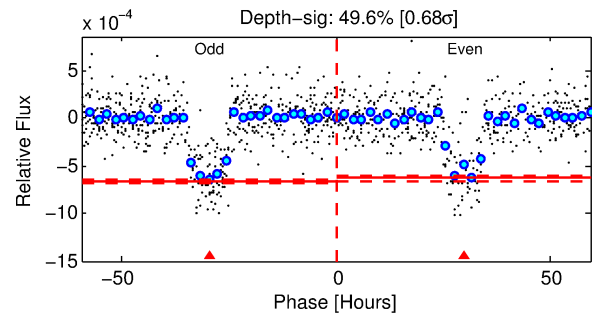
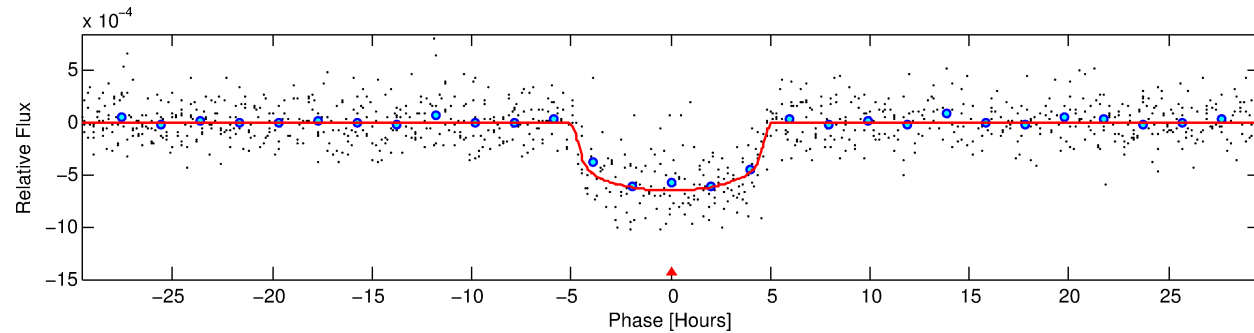
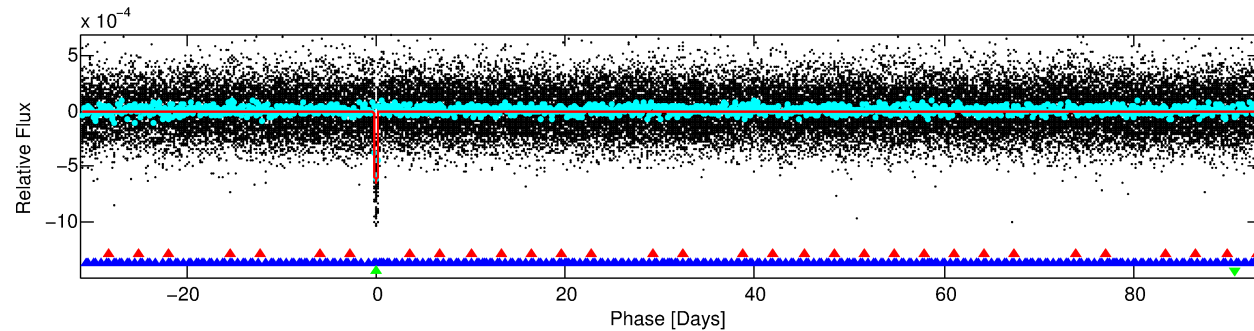
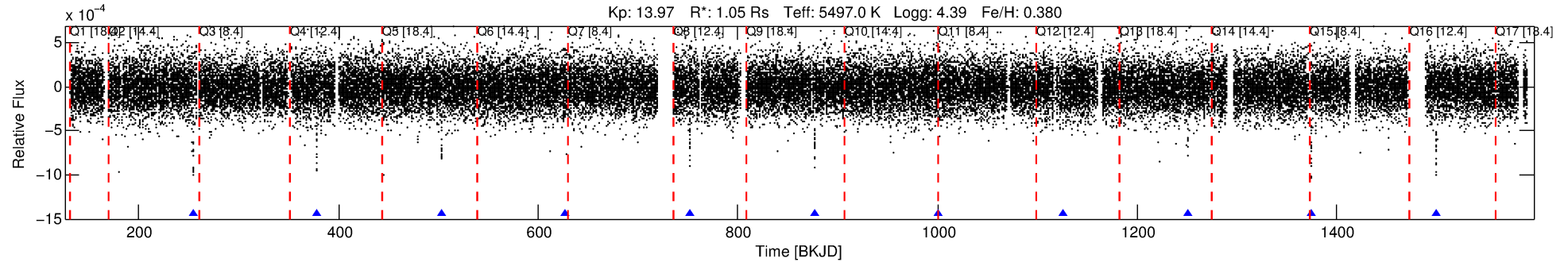
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009597345-03

No Significant Match Found

DV One-Page Summary

KIC: 9597345 Candidate: 3 of 3 Period: 124.526 d
KOI: K00711.03 Corr: 0.986



DV Fit Results:

Period = 124.52558 [0.00073] d
Epoch = 254.1709 [0.0045] BKJD
Rp/R* = 0.0253 [0.0031]
a/R* = 68.46 [32.84]
b = 0.74 [0.30]
Seff = 3.79 [0.81]
Teq = 356 [19] K
Rp = 2.89 [0.57] Re
a = 0.4863 [0.0646] AU
Ag = 830.77 [377.02] [2.20 σ]
Teffp = 2952 [307] K [8.44 σ]

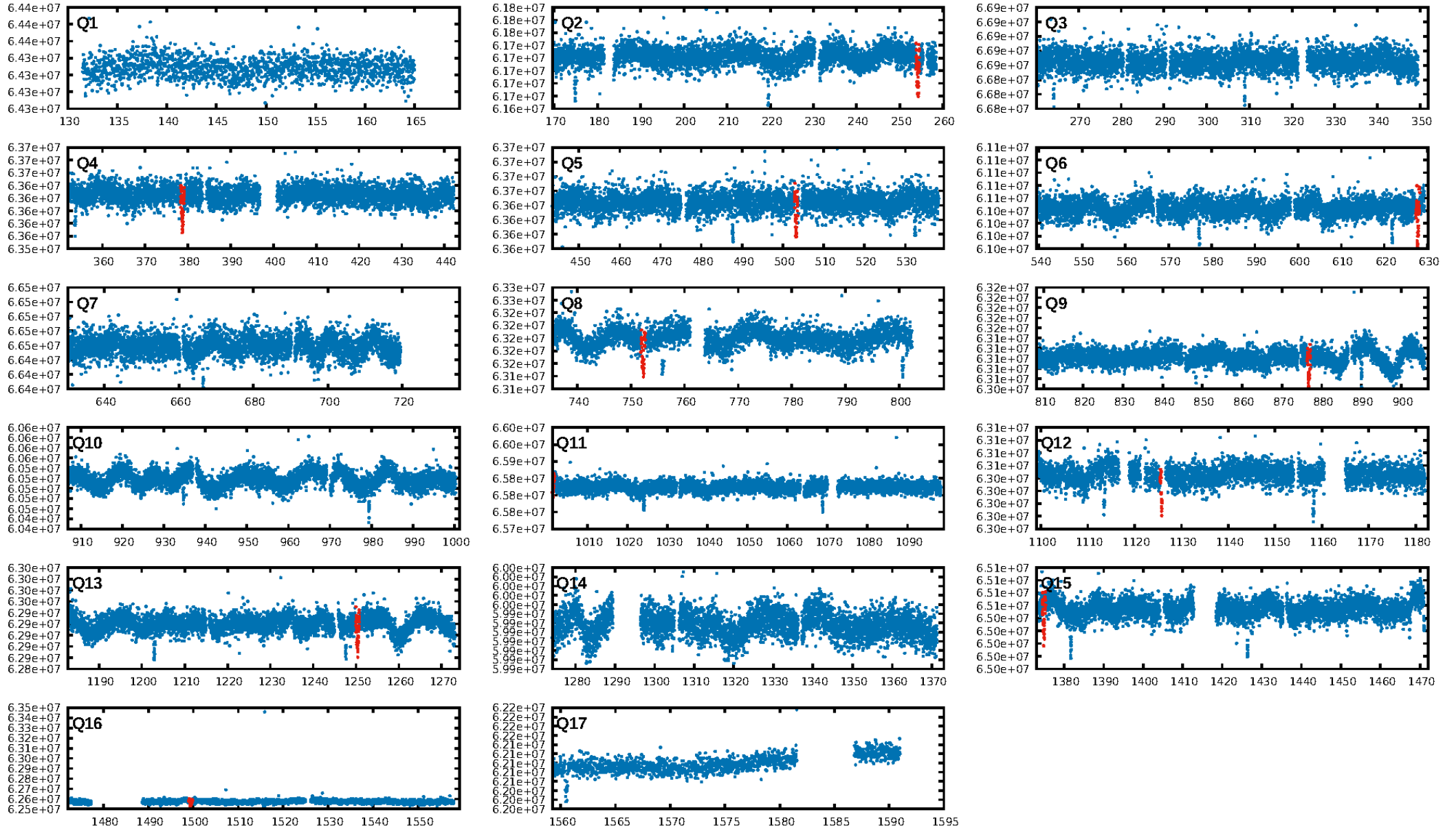
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [163.38 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.03e-183
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 3.452
Centroid-sig: 2.1%
Centroid-so: 0.617 arcsec [1.62 σ]
OotOffset-rm: 0.582 arcsec [2.19 σ]
KicOffset-rm: 0.925 arcsec [3.42 σ]
OotOffset-st: 2/0/2/3 [7]
KicOffset-st: 2/0/2/3 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 0.29 [2/7]

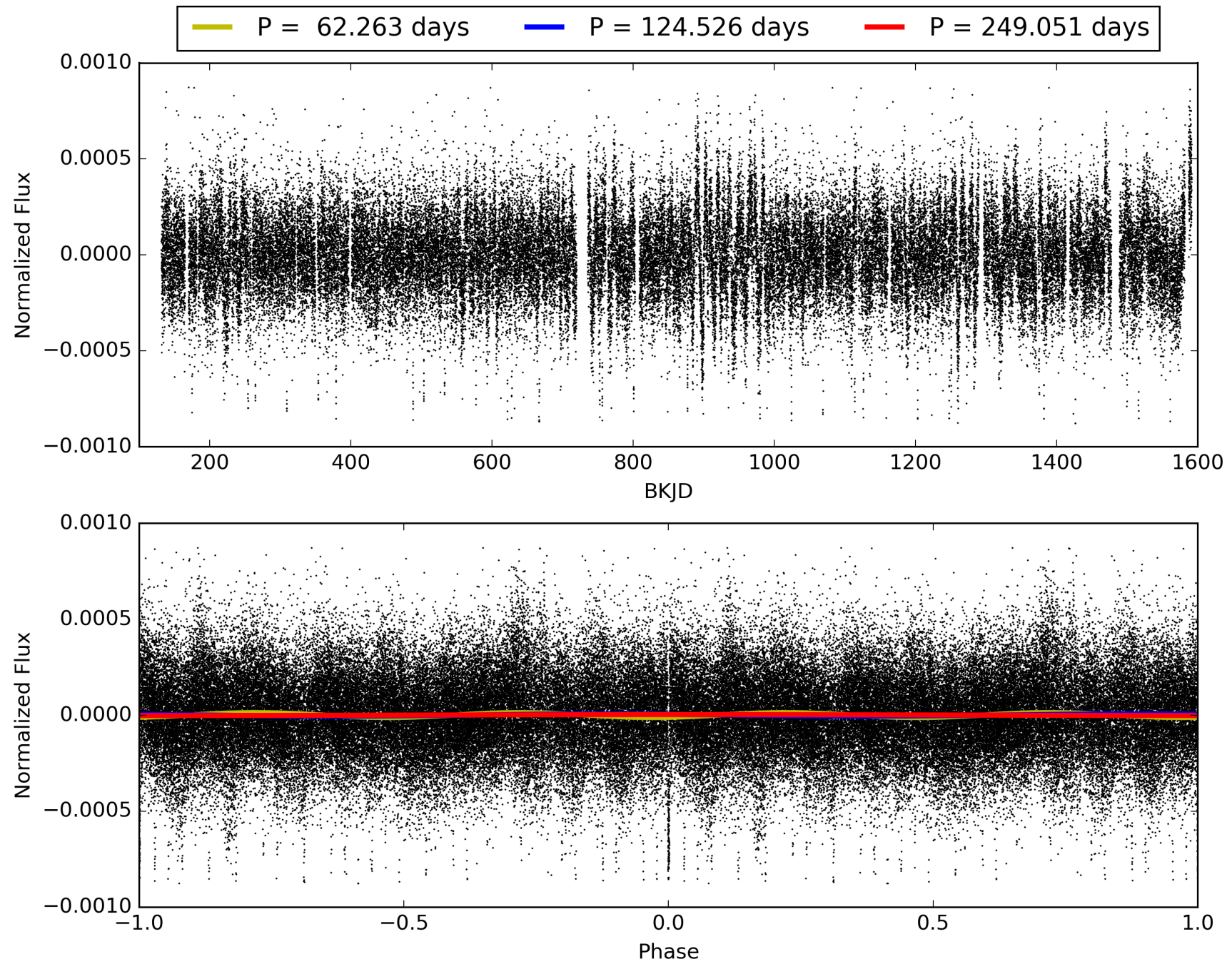
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:30:43 Z

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

TCE 009597345-03, PDC Light Curves

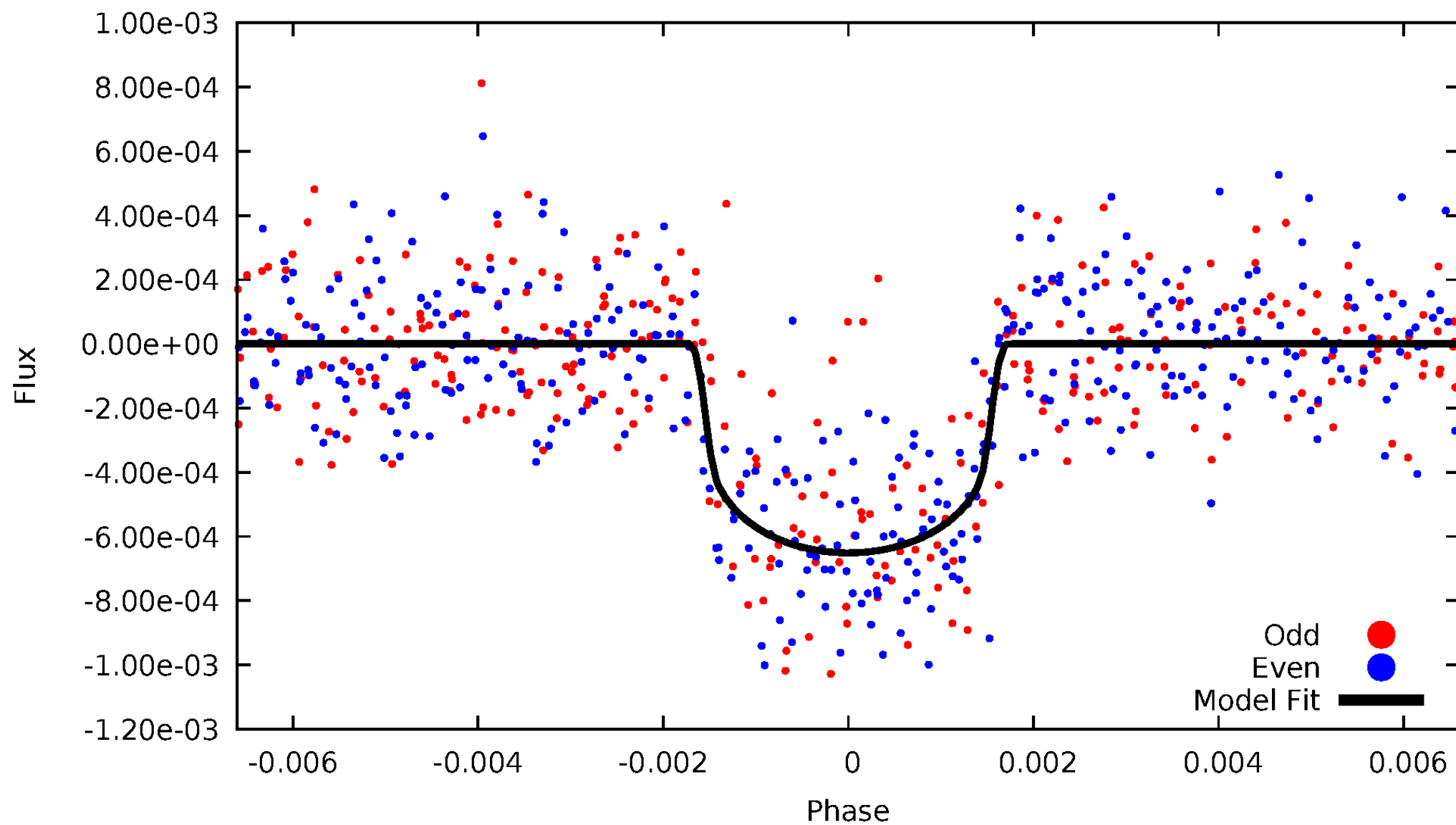


TCE 009597345-03



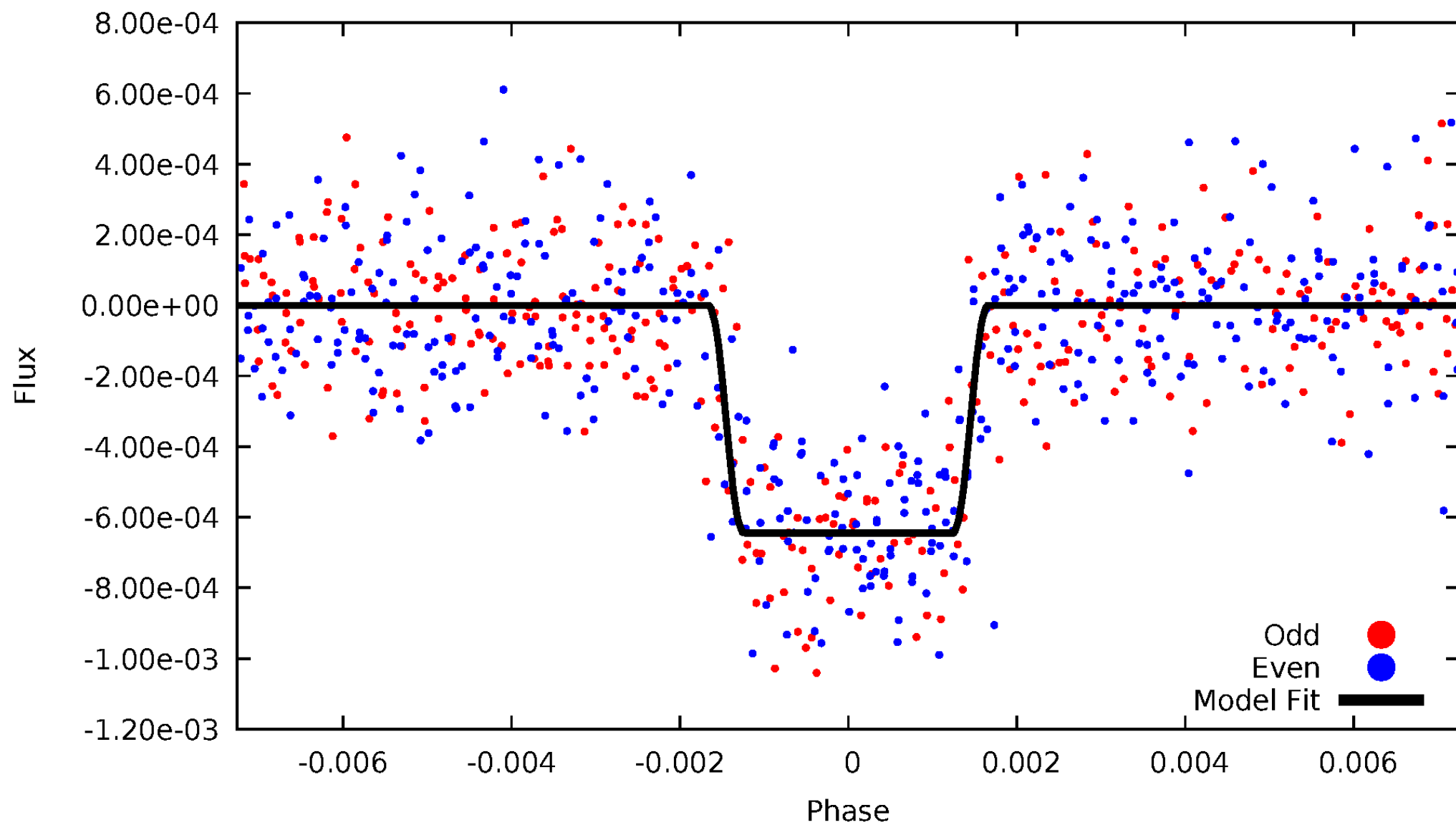
DV Odd/Even

TCE 009597345-03



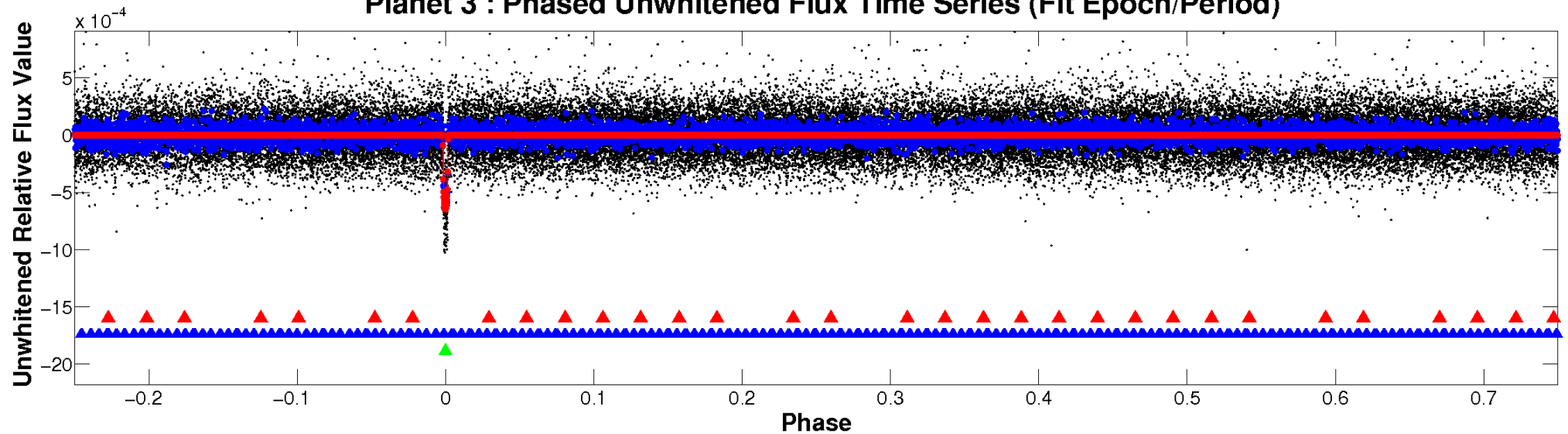
ALT Odd/Even

TCE 009597345-03

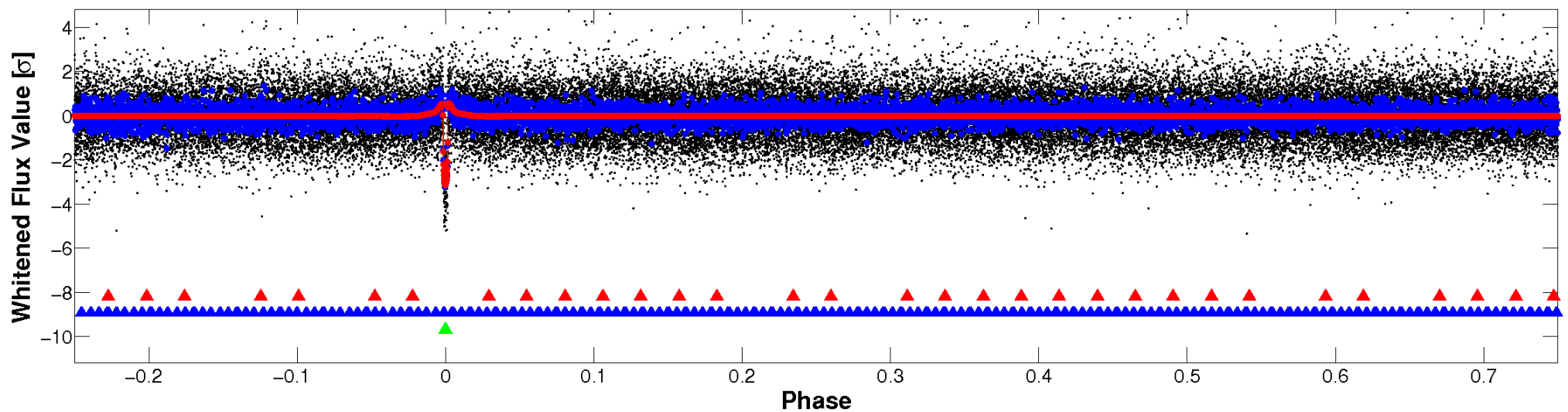


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

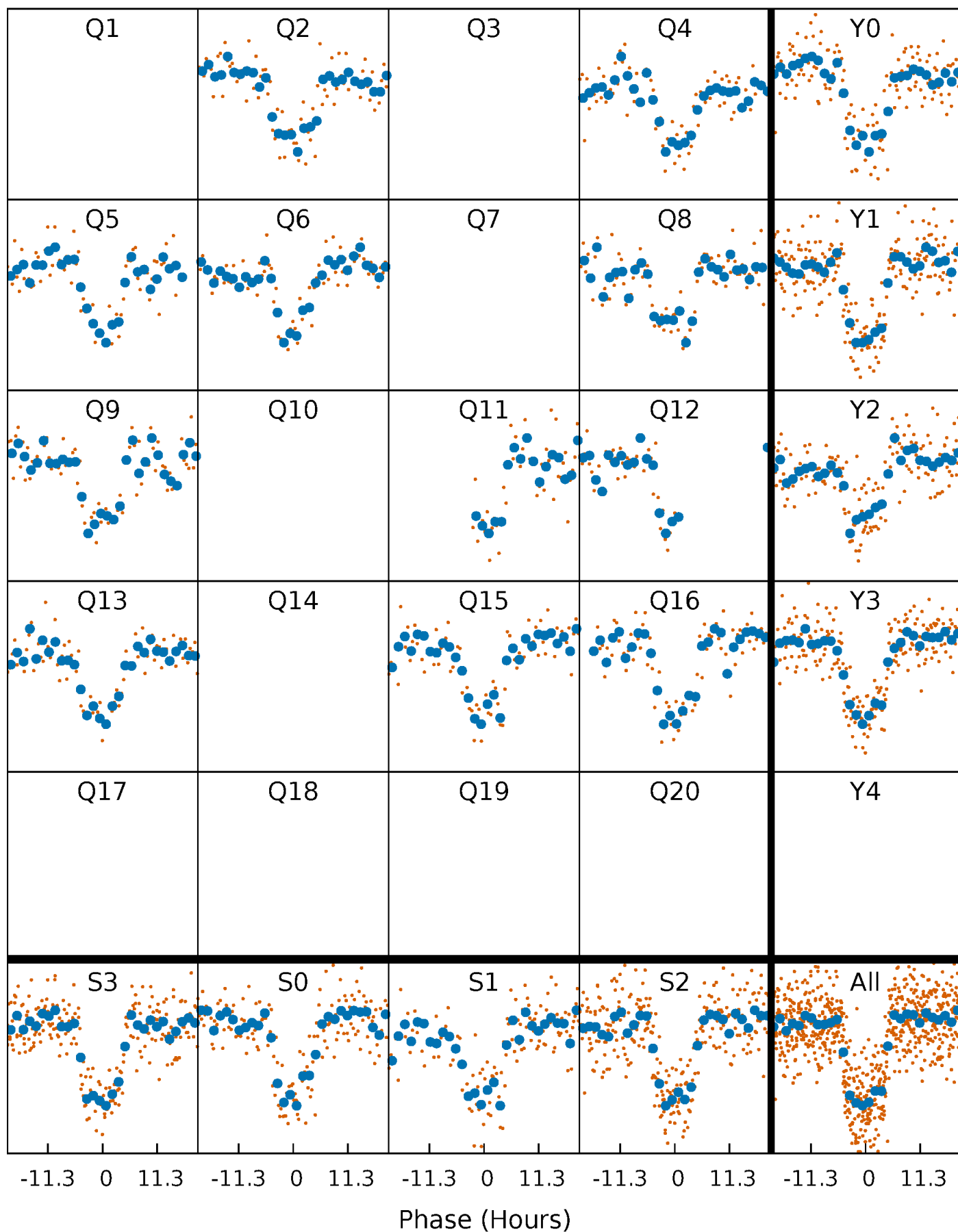


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



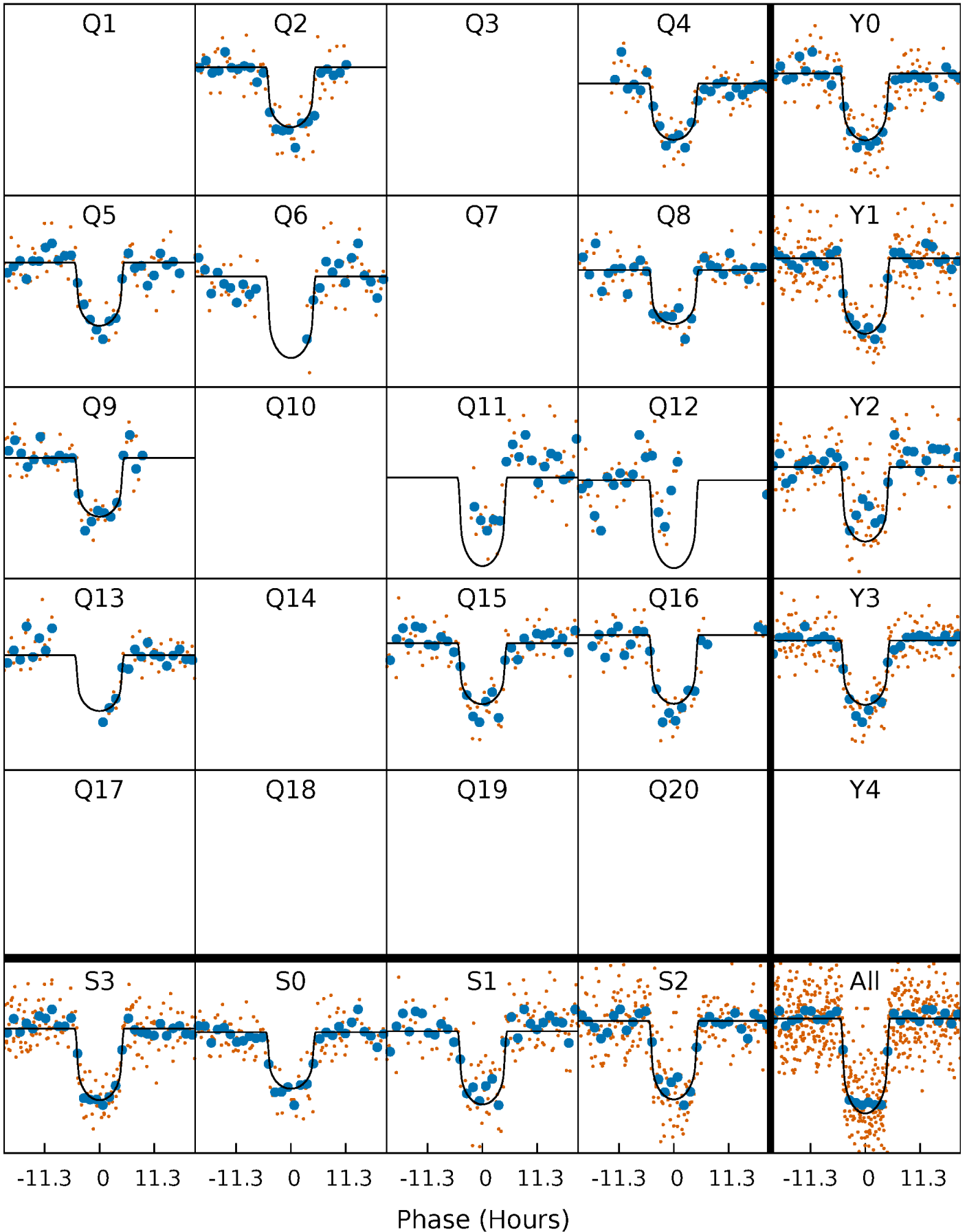
PDC Quarter-Phased Transit Curves

TCE 009597345-03 P=124.525584 Days $T_0=254.170921$ (BKJD)



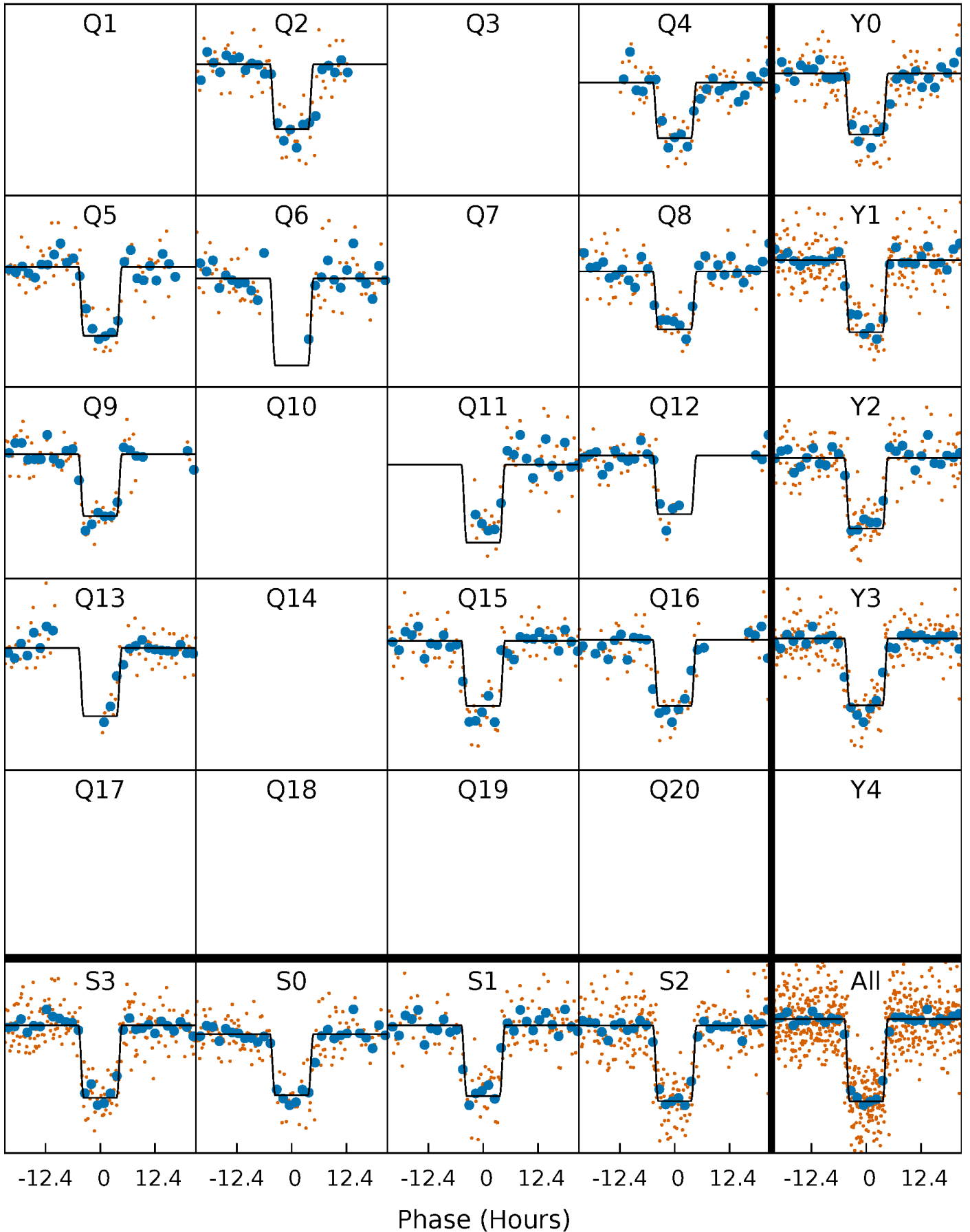
DV Quarter-Phased Transit Curves

TCE 009597345-03 P=124.525584 Days $T_0=254.170921$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

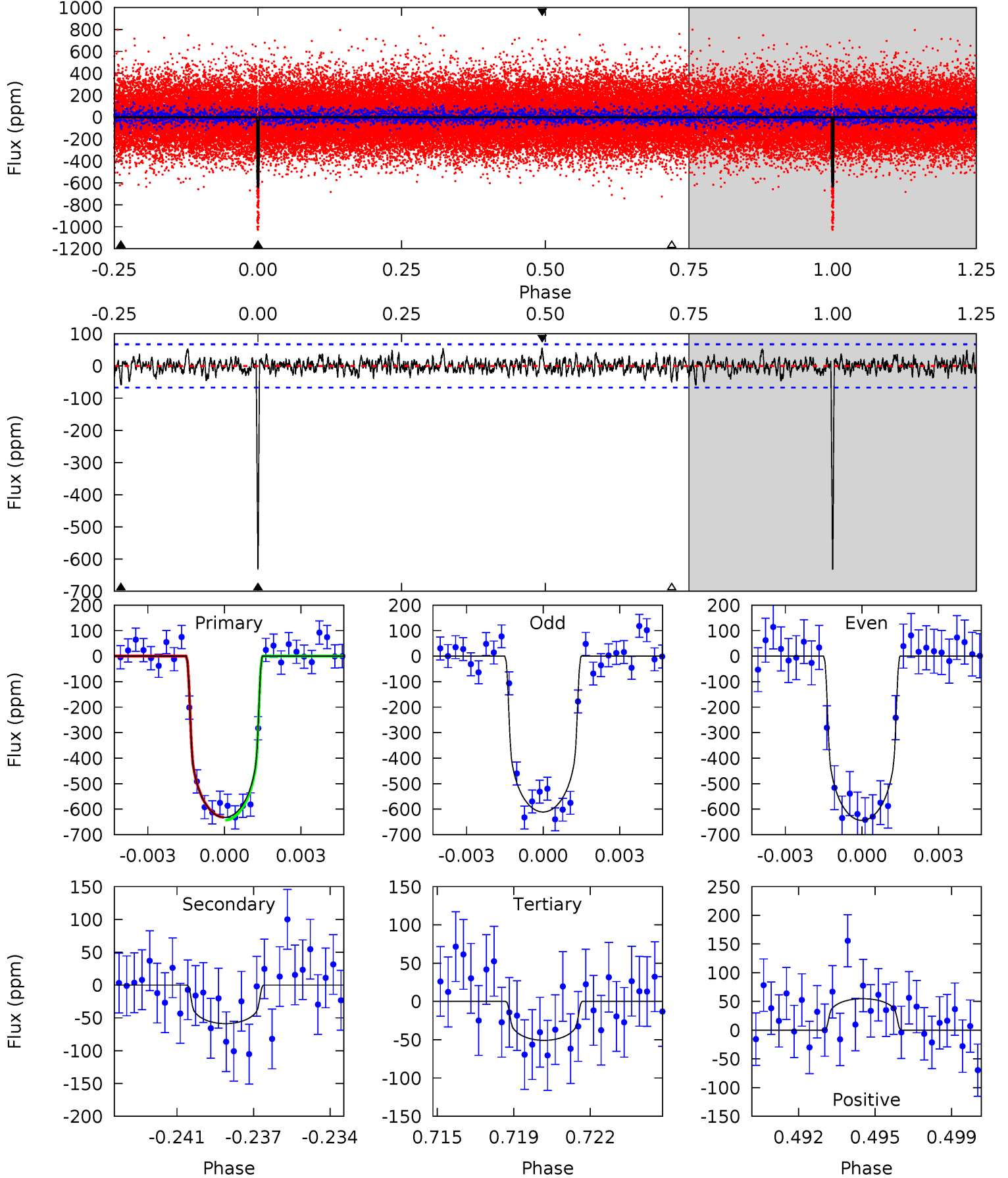
TCE 009597345-03 P=124.531117 Days $T_0=254.144782$ (BKJD)



DV Model-Shift Uniqueness Test

009597345-03, P = 124.525584 Days, E = 129.645337 Days

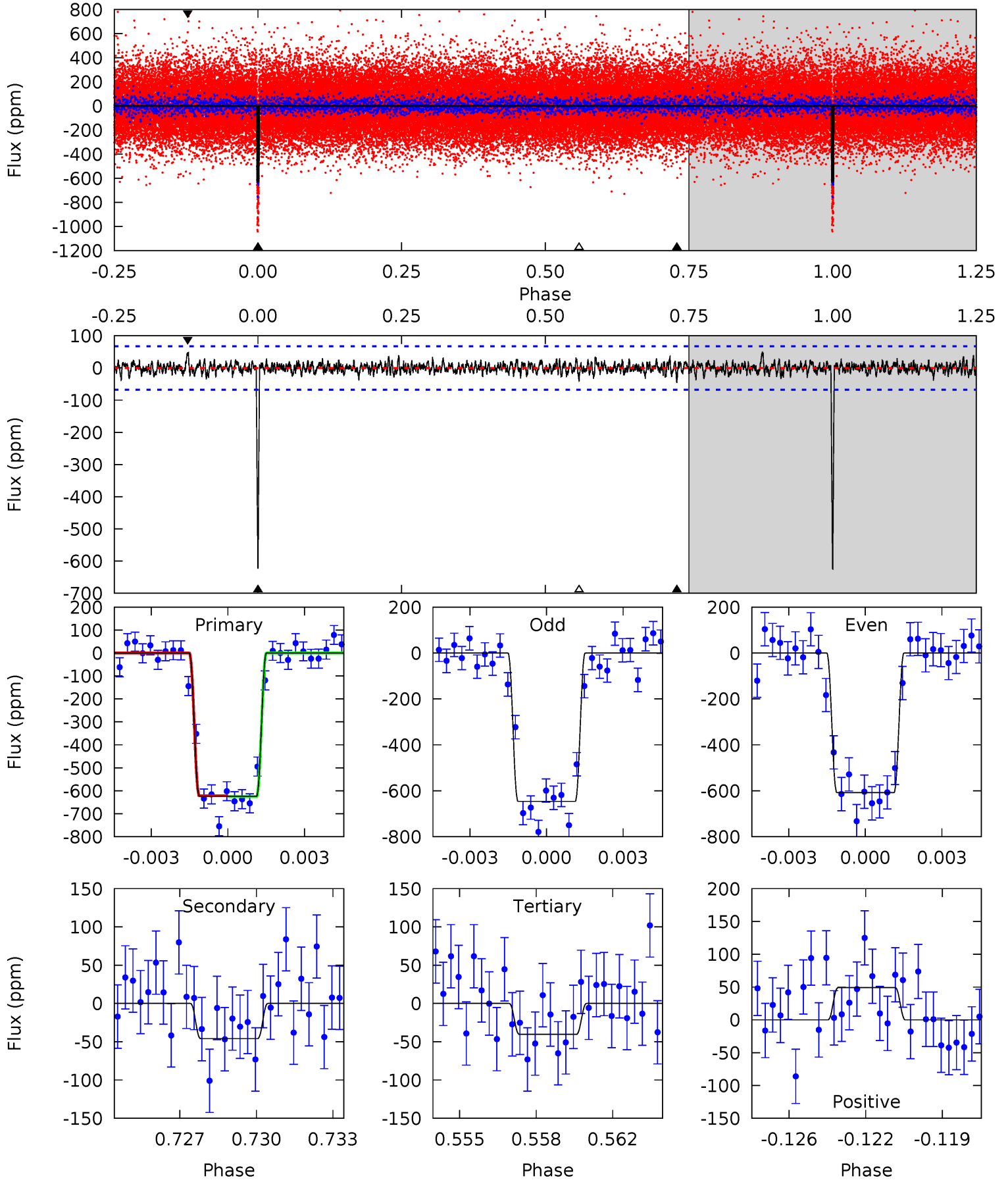
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.1	4.57	3.95	4.26	5.23	2.93	1.23	45.2	44.9	0.62	0.31	1.27	0.91	0.08	0



Alt Model-Shift Uniqueness Test

009597345-03, P = 124.531117 Days, E = 129.613665 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.4	3.56	3.13	3.81	5.23	2.94	0.93	45.2	44.6	0.43	-0.25	1.47	1.01	0.07	0.14



Stellar Parameters For KIC 009597345

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5497^{+109}_{-109}	$4.394^{+0.090}_{-0.110}$	$0.380^{+0.100}_{-0.150}$	$1.046^{+0.161}_{-0.111}$	$0.988^{+0.049}_{-0.055}$	$1.216^{+0.439}_{-0.381}$
	+2%/-2%	+2%/-3%	+26%/-39%	+15%/-11%	+5%/-6%	+36%/-31%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 009597345-03 / KOI 0711.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-59 ± 13	$2.89^{+0.44}_{-0.40}$	499^{+20}_{-21}	3490^{+188}_{-179}	902^{+373}_{-284}
Alt.	-46 ± 13	$2.92^{+0.45}_{-0.39}$	498^{+23}_{-18}	3351^{+204}_{-191}	682^{+327}_{-230}

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 $A_{obs} \gg 1.0$

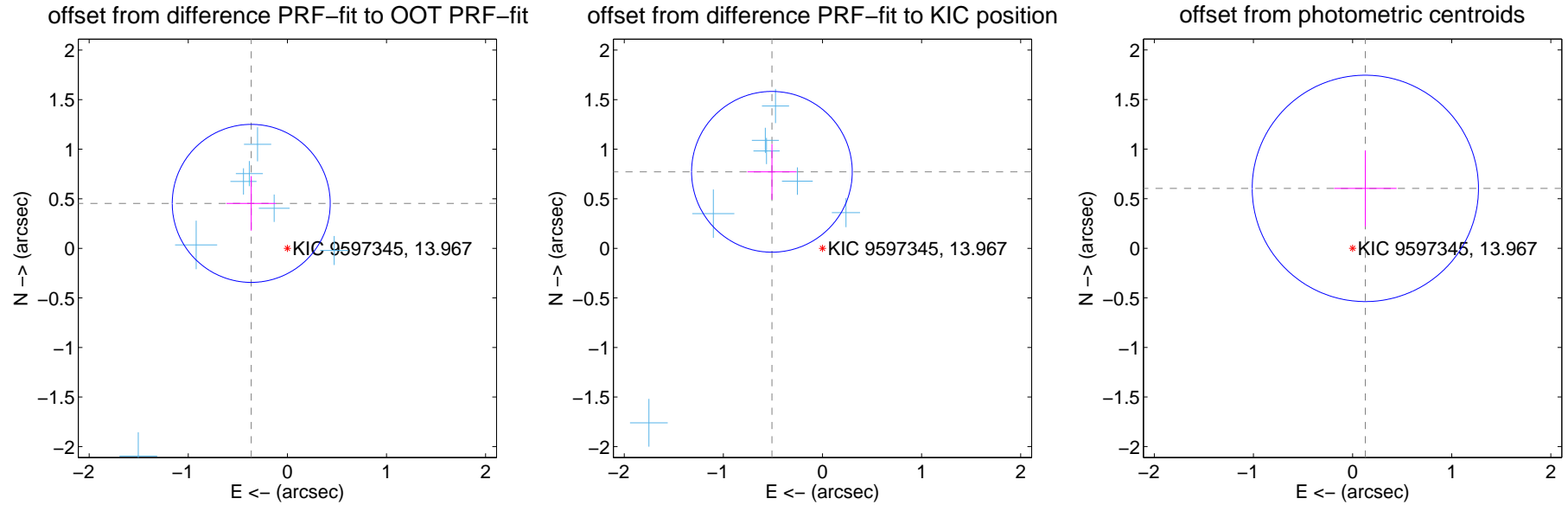
DV Centroid Data

Supplemental centroid analysis for 009597345-03. Kepler magnitude: 13.97. Transit SNR 34.28

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.582 ± 0.266	2.19	0.365 ± 0.250	0.453 ± 0.276
PRF-fit source offset from KIC position	0.925 ± 0.270	3.42	0.510 ± 0.247	0.772 ± 0.280
photometric centroid source offset	0.62 ± 0.38	1.62	-0.13 ± 0.32	0.60 ± 0.38



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.

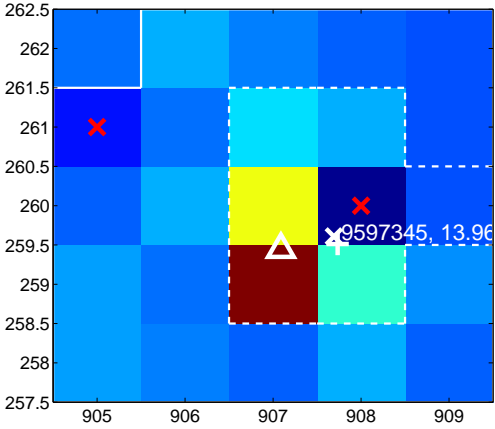
Q1 no difference image



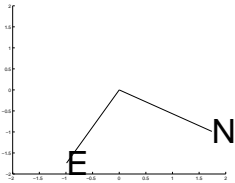
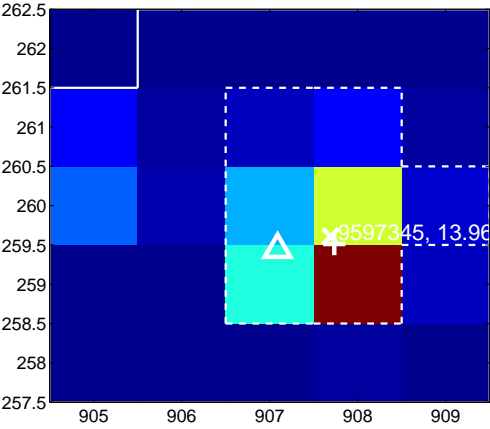
Q1 no OOT image



Q2 difference image



Q2 OOT image



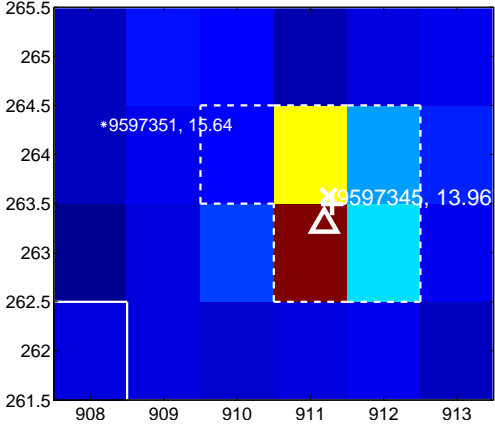
Q3 no difference image



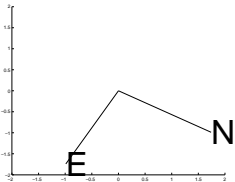
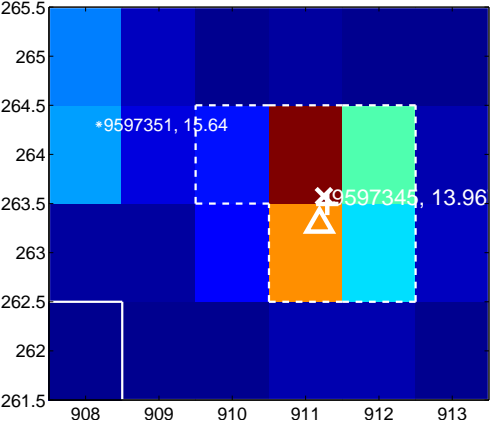
Q3 no OOT image



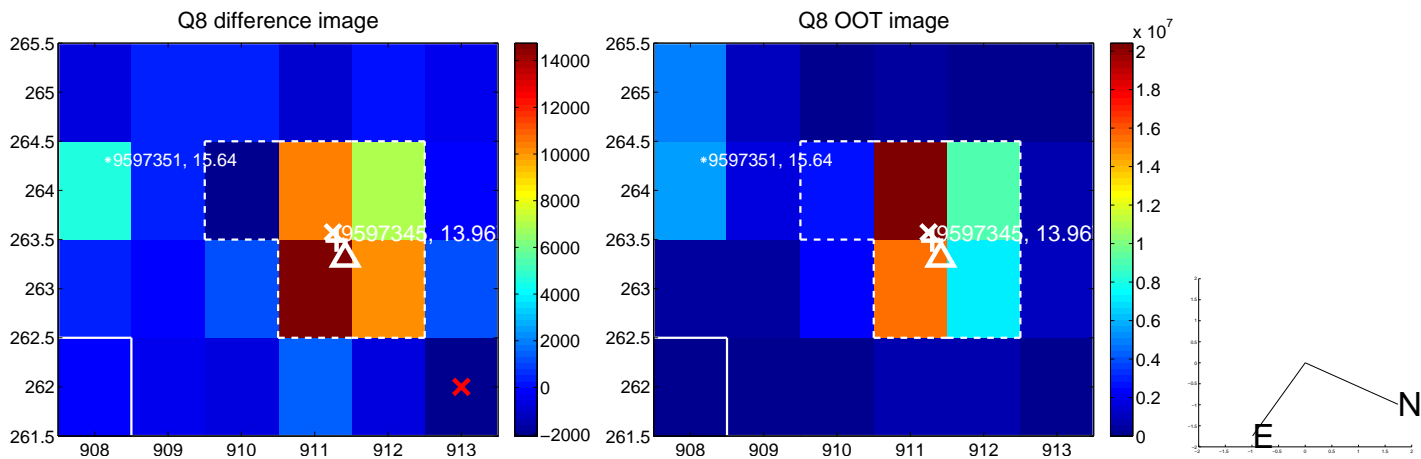
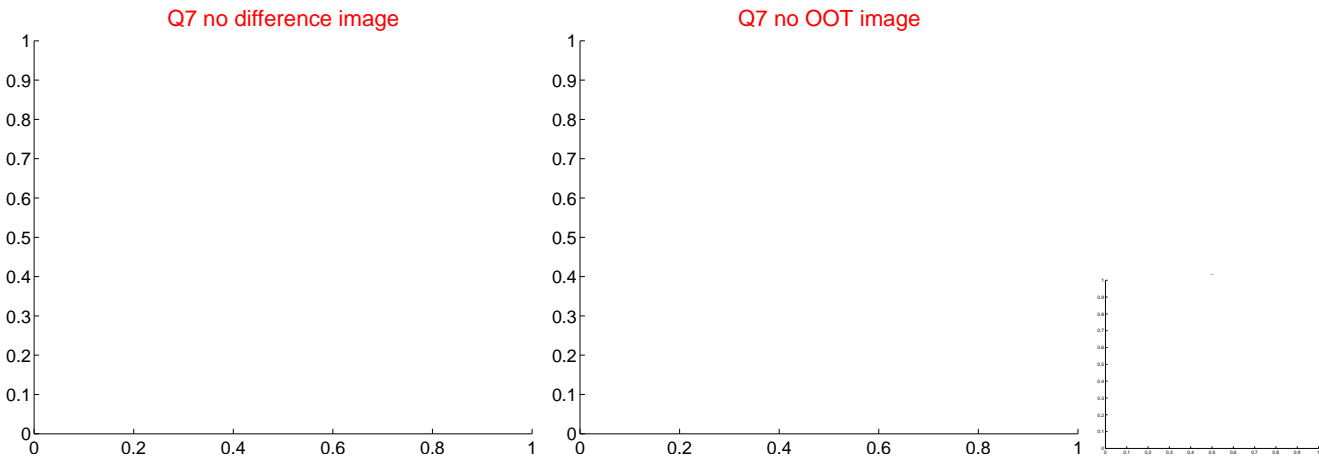
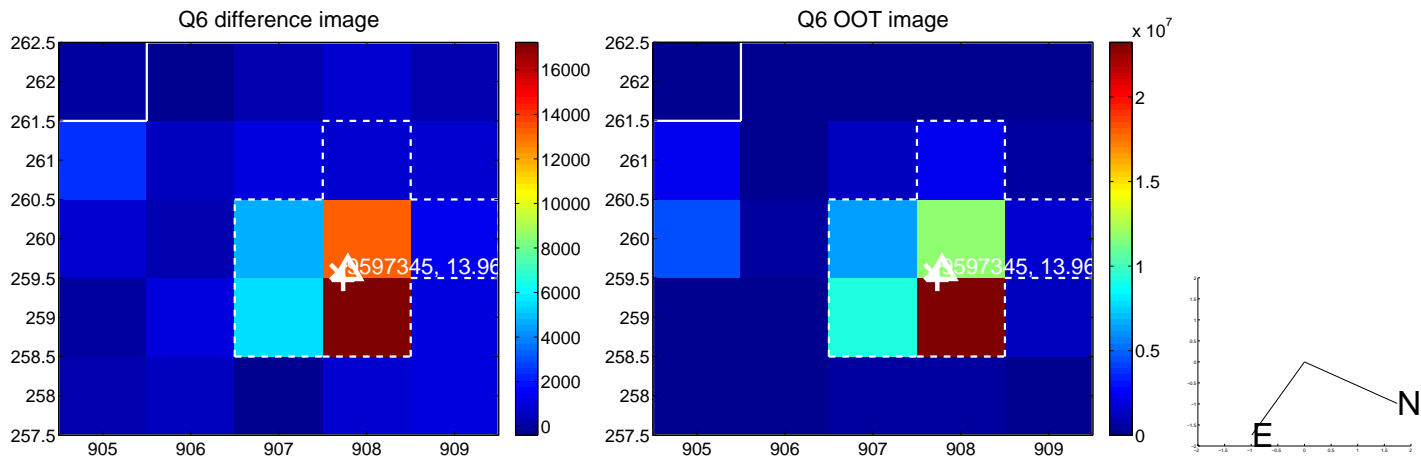
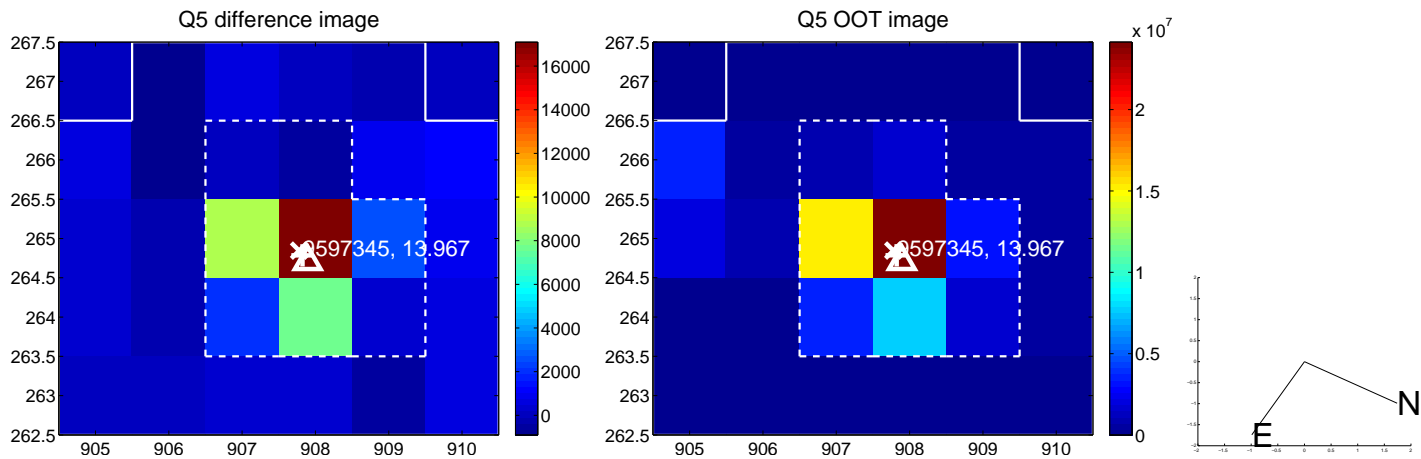
Q4 difference image



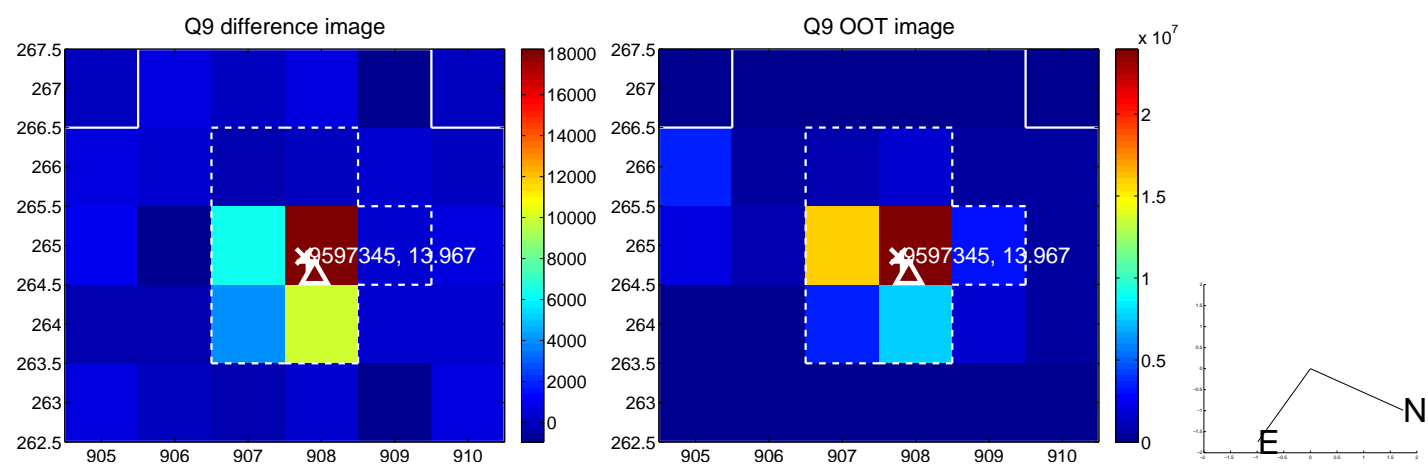
Q4 OOT image



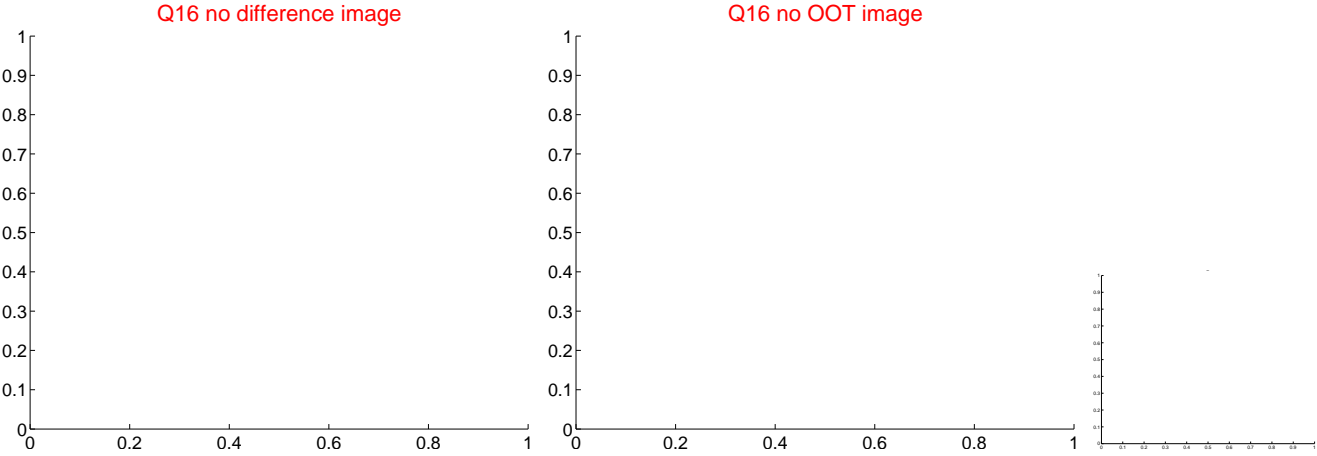
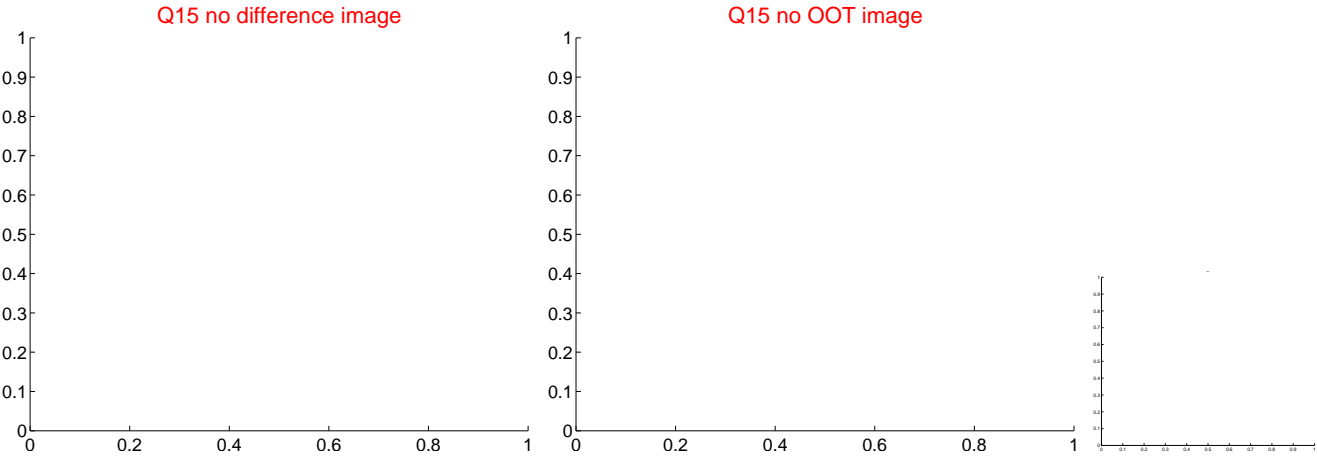
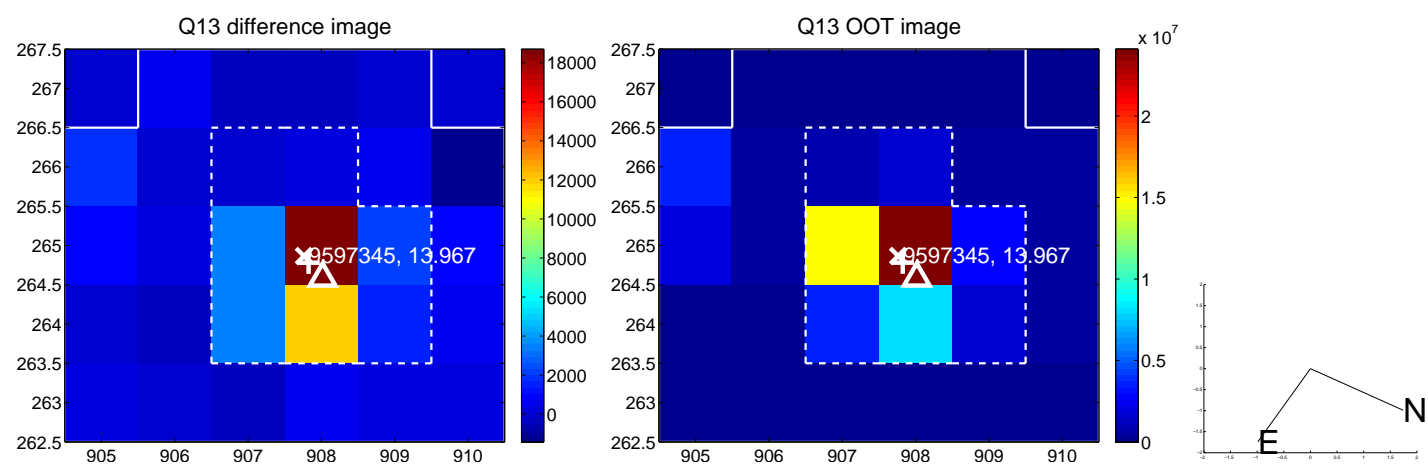
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



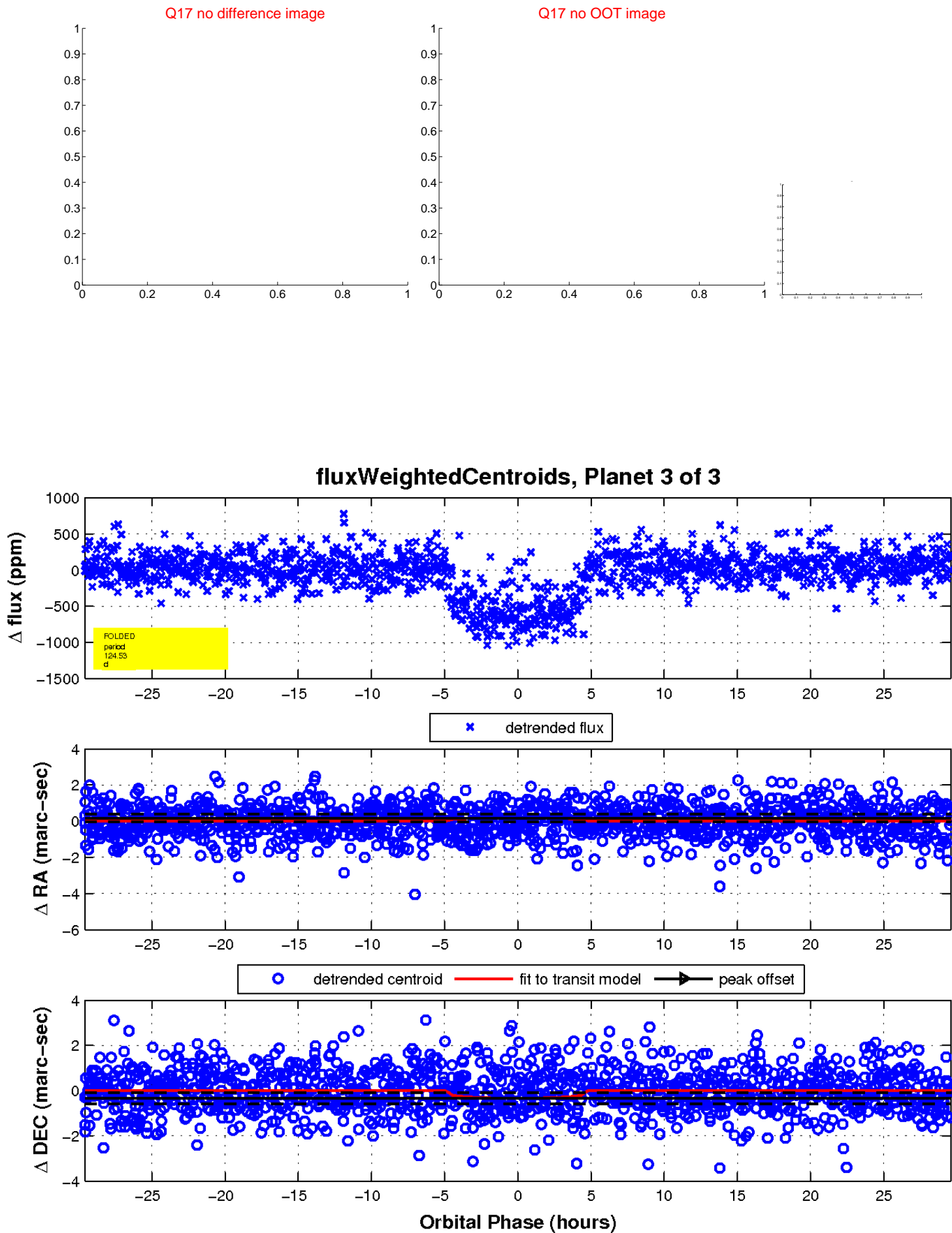
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

