

KIC 009579641

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})
009579641-01	OBS	0115.01	5.412190	133.144829	600.4	3.082	163.5	160.3	1.09	5779	3.12	337.77
009579641-02	OBS	0115.02	7.125951	131.878846	184.9	2.986	39.8	43.8	1.09	5779	1.75	234.06
009579641-03	OBS	0115.03	3.435914	132.662216	24.6	3.320	7.4	8.7	1.09	5779	0.64	619.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009579641-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009579641-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009579641-03	OBS	PC	0.87	0	0	0	0	NO_COMMENT

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

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

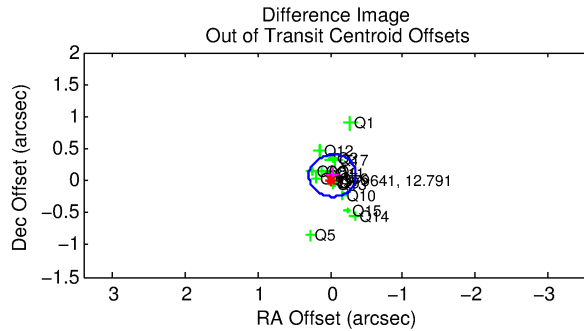
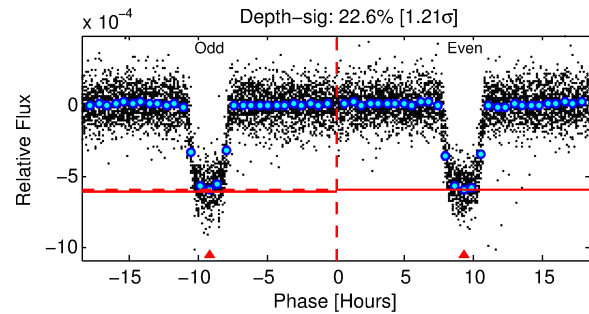
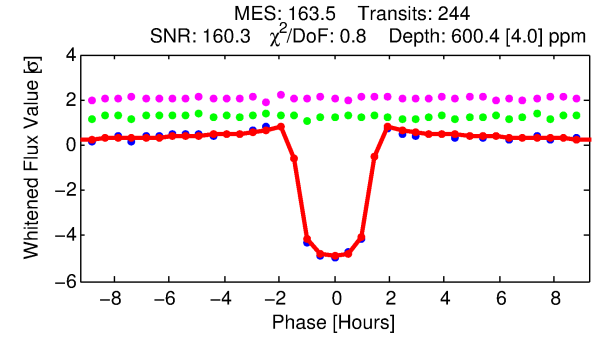
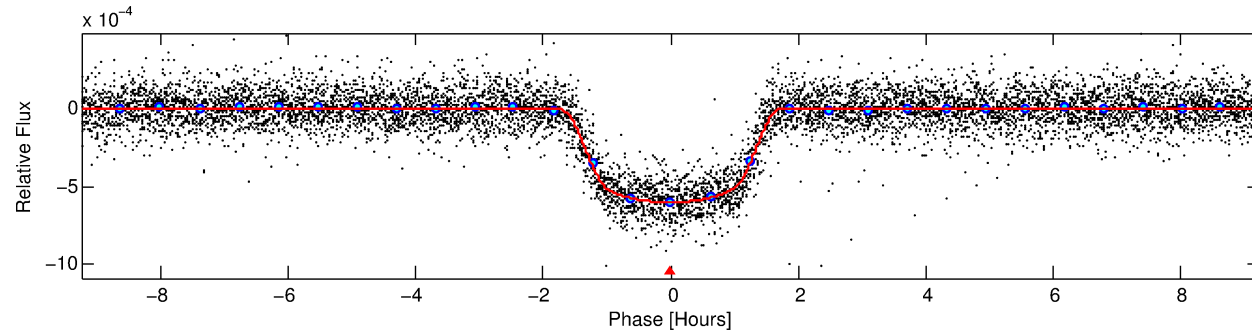
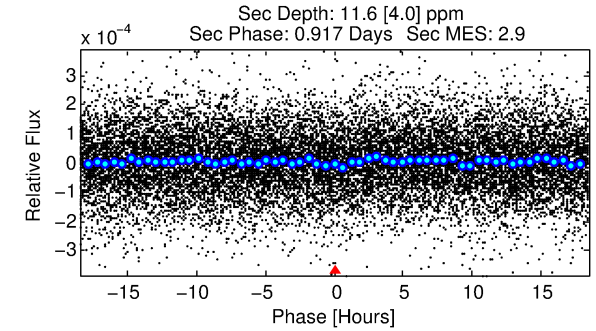
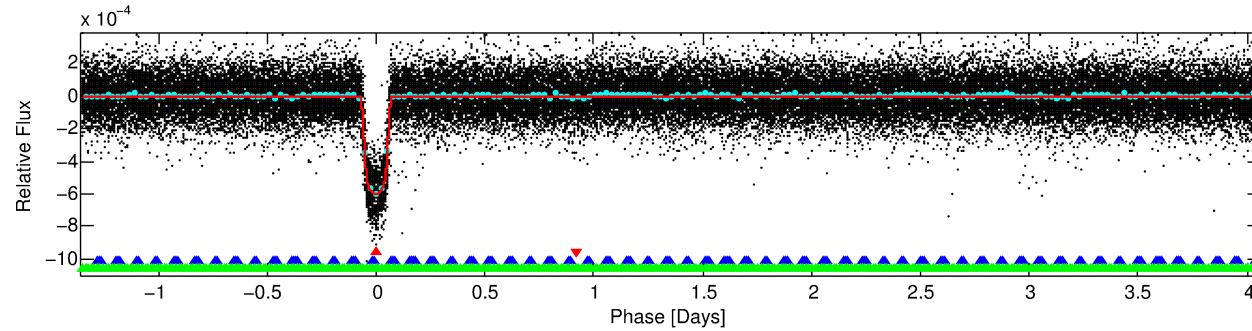
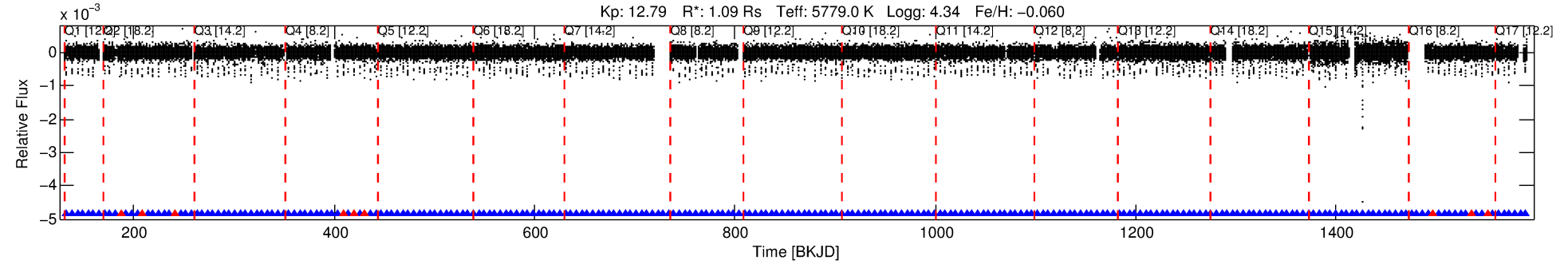
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009579641-01

No Significant Match Found

DV One-Page Summary

KIC: 9579641 Candidate: 1 of 3 Period: 5.412 d
KOI: K00115.01 Name: Kepler-105b Corr: 0.955



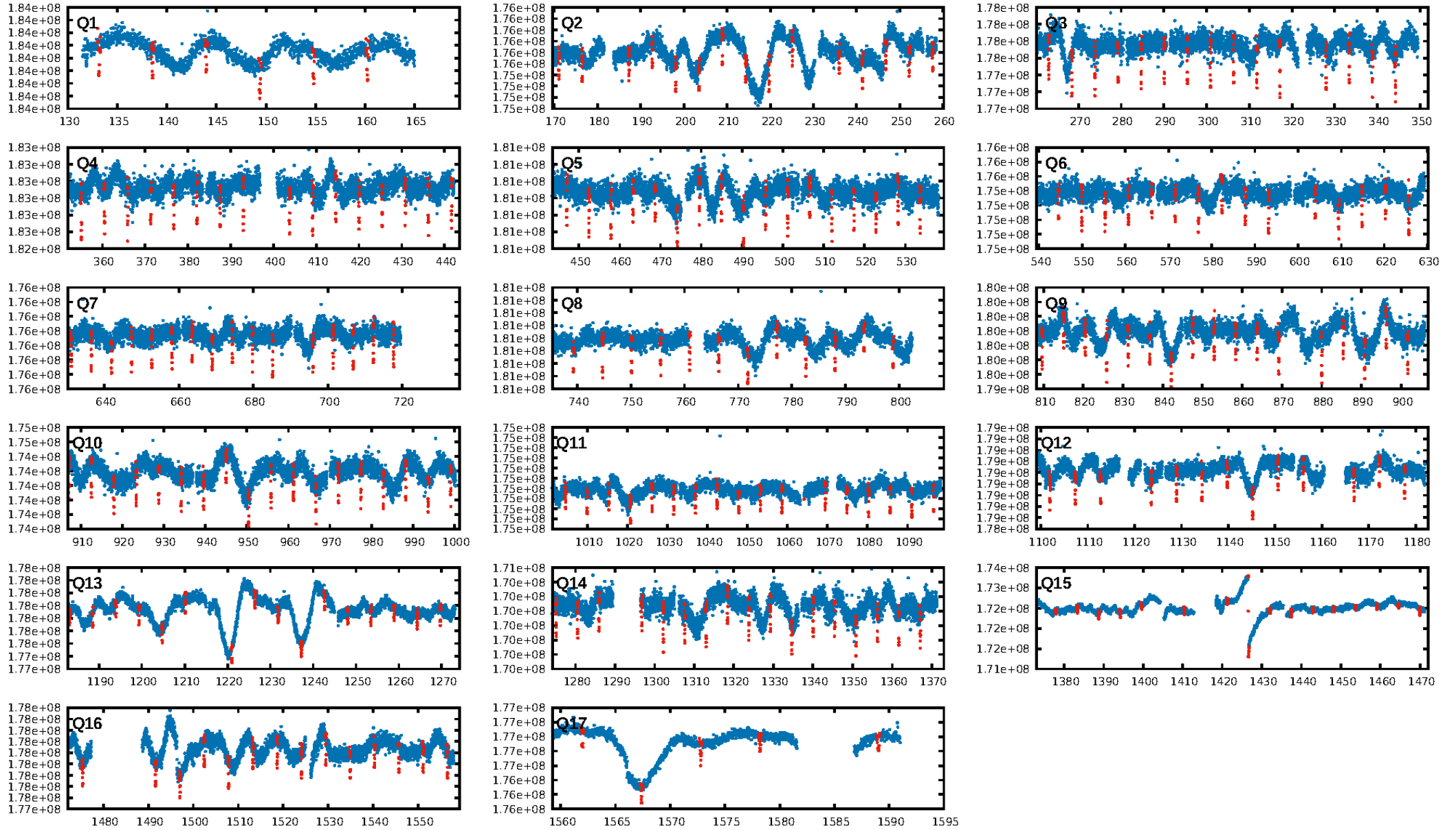
DV Fit Results:

Period = 5.41219 [0.00000] d
Epoch = 133.1448 [0.0003] BKJD
Rp/R* = 0.0263 [0.0005]
a/R* = 7.03 [0.62]
b = 0.89 [0.02]
Seff = 337.77 [80.41]
Teq = 1093 [65] K
Rp = 3.12 [0.46] Re
a = 0.0591 [0.0083] AU
Ag = 2.29 [0.94] [1.38σ]
Teffp = 2079 [183] K [5.08σ]

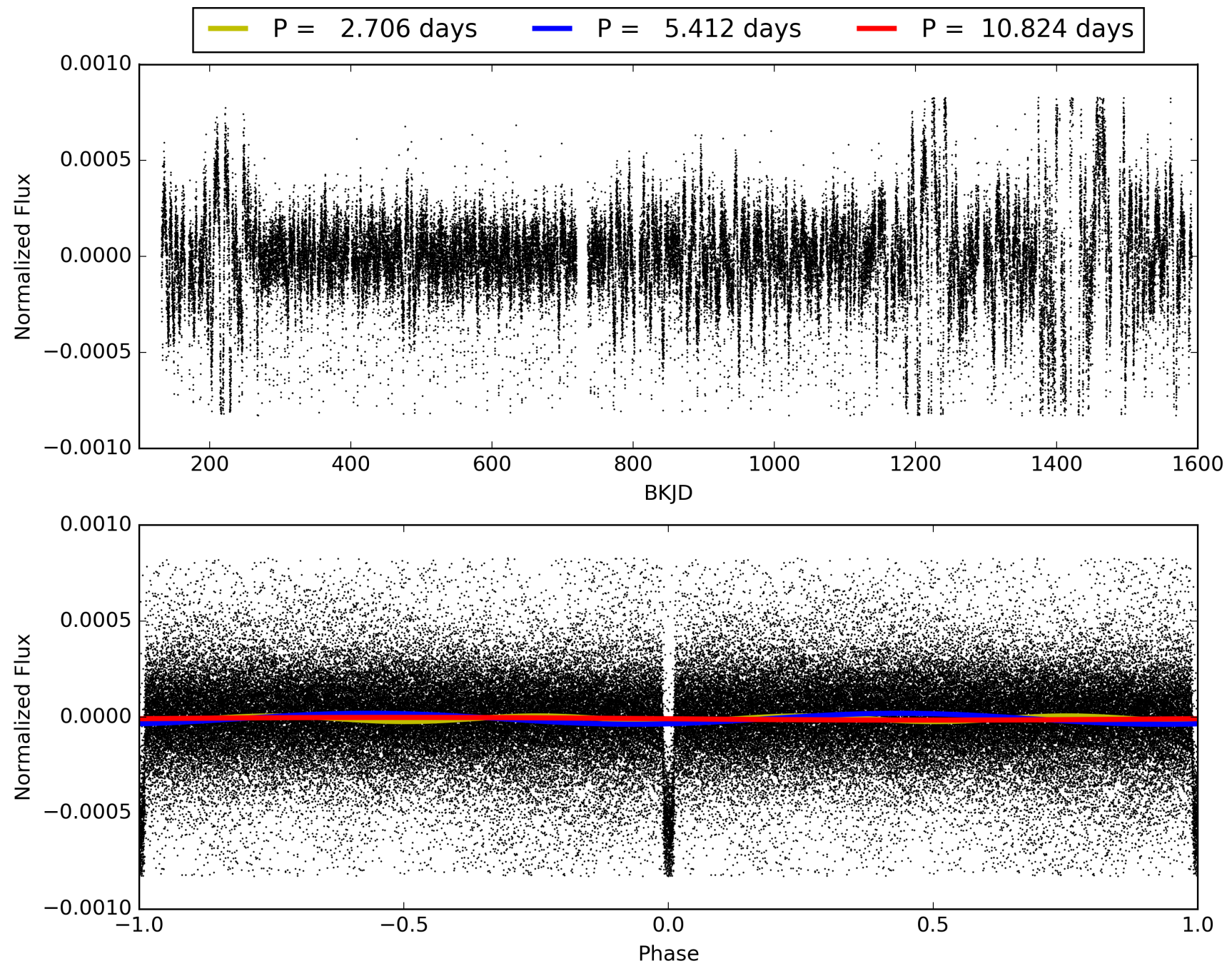
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.47σ]
LongPeriod-sig: 100.0% [9.58σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [224/233]
GhostDiagnostic-chr: 12.15
Centroid-sig: 0.0%
Centroid-so: 0.175 arcsec [2.57σ]
OotOffset-rm: 0.084 arcsec [0.77σ]
KicOffset-rm: 0.242 arcsec [2.28σ]
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]

TCE 009579641-01, PDC Light Curves

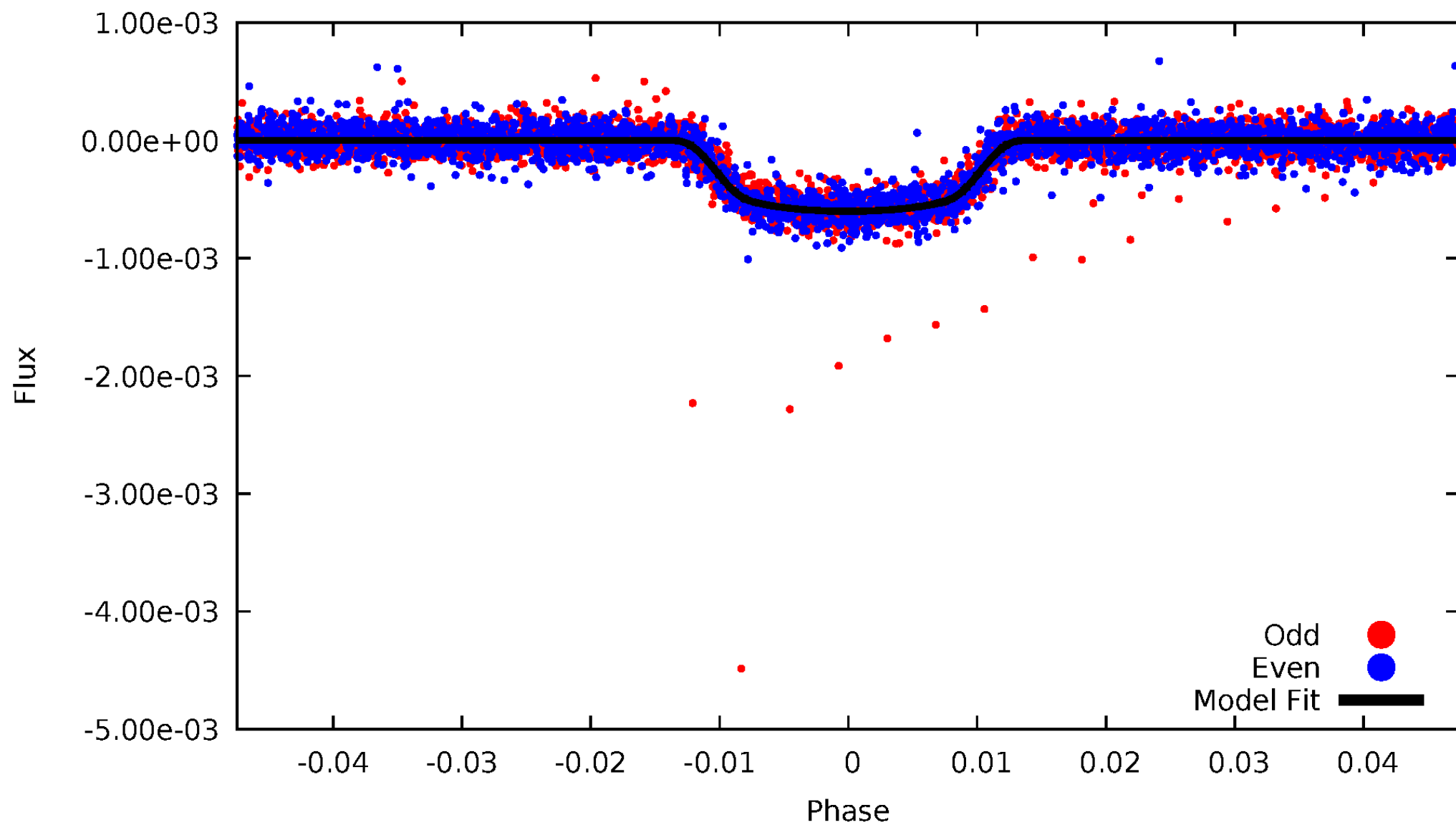


TCE 009579641-01



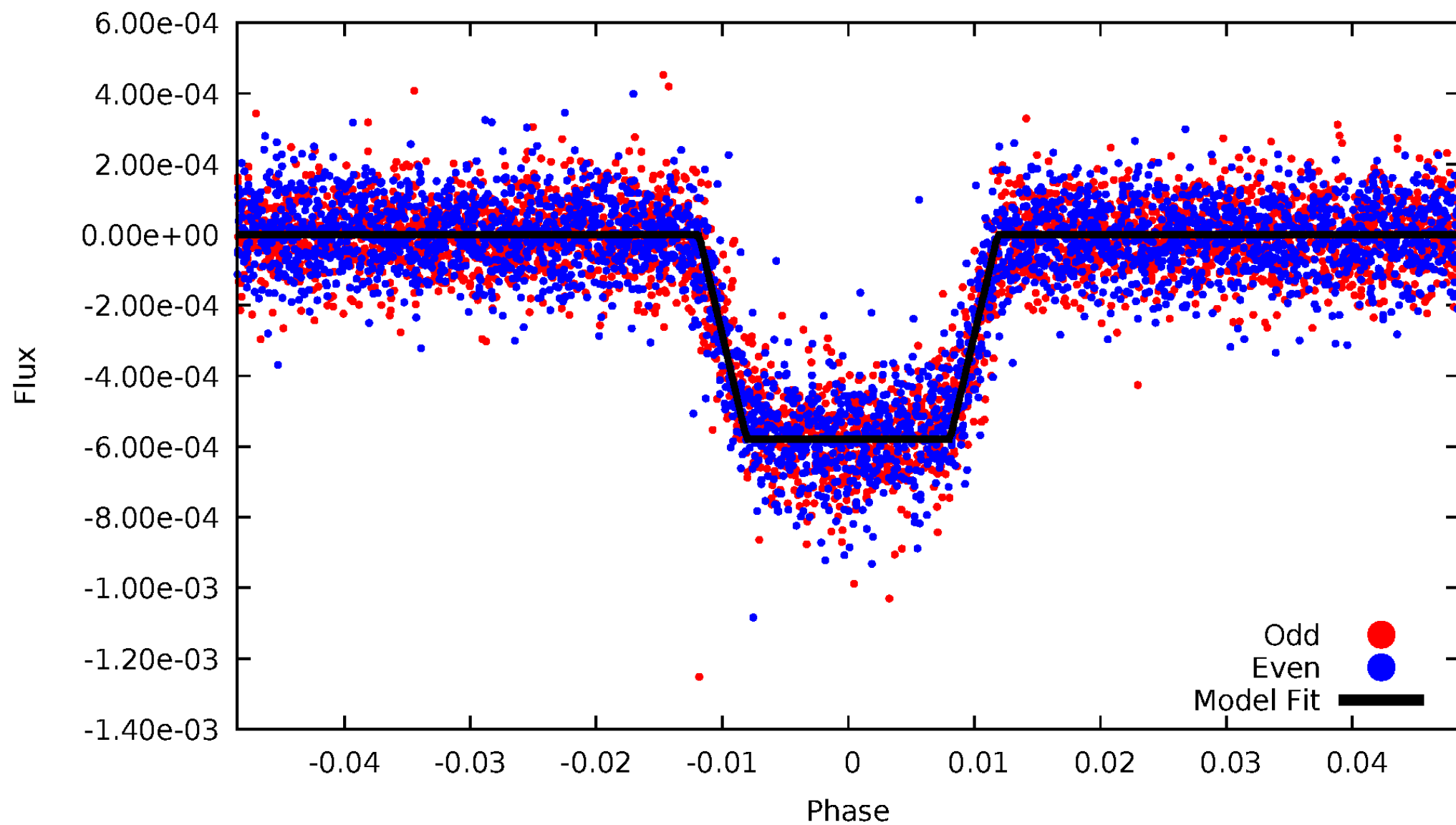
DV Odd/Even

TCE 009579641-01



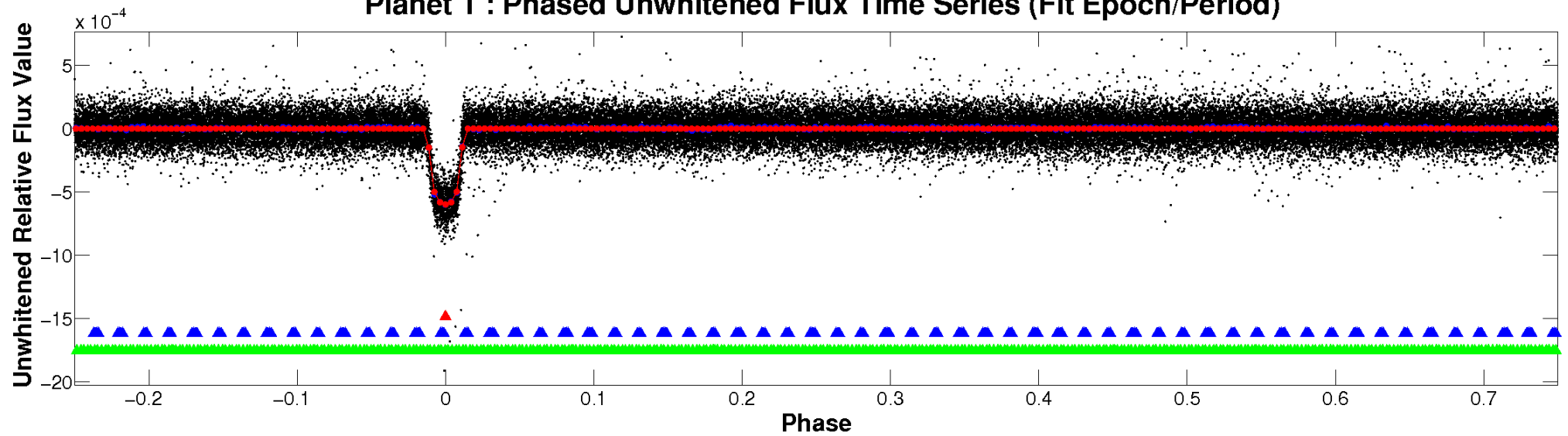
ALT Odd/Even

TCE 009579641-01

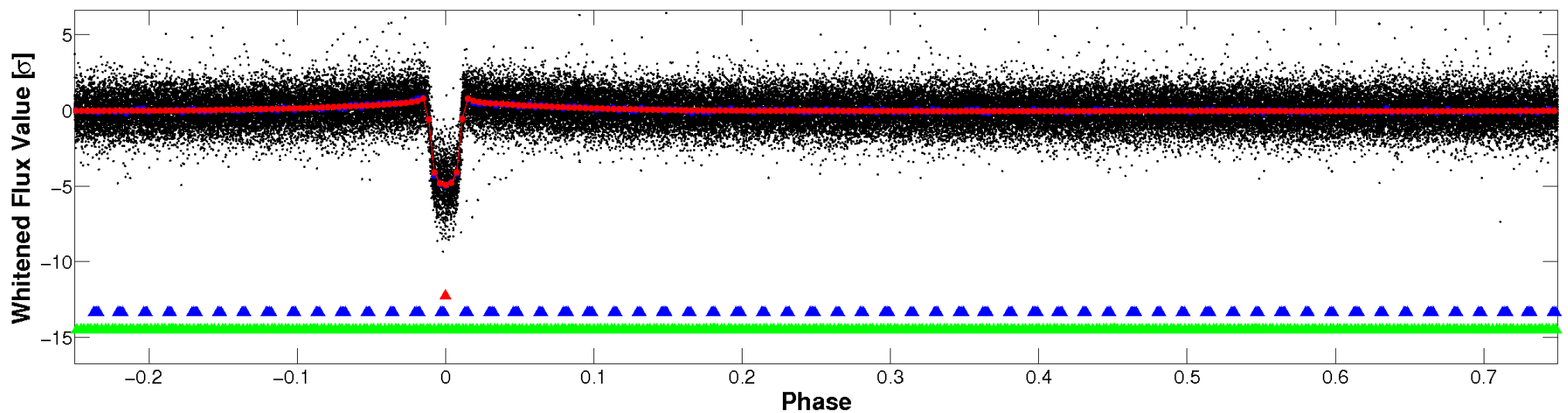


Non-Whitened Vs. Whitened Light Curve

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

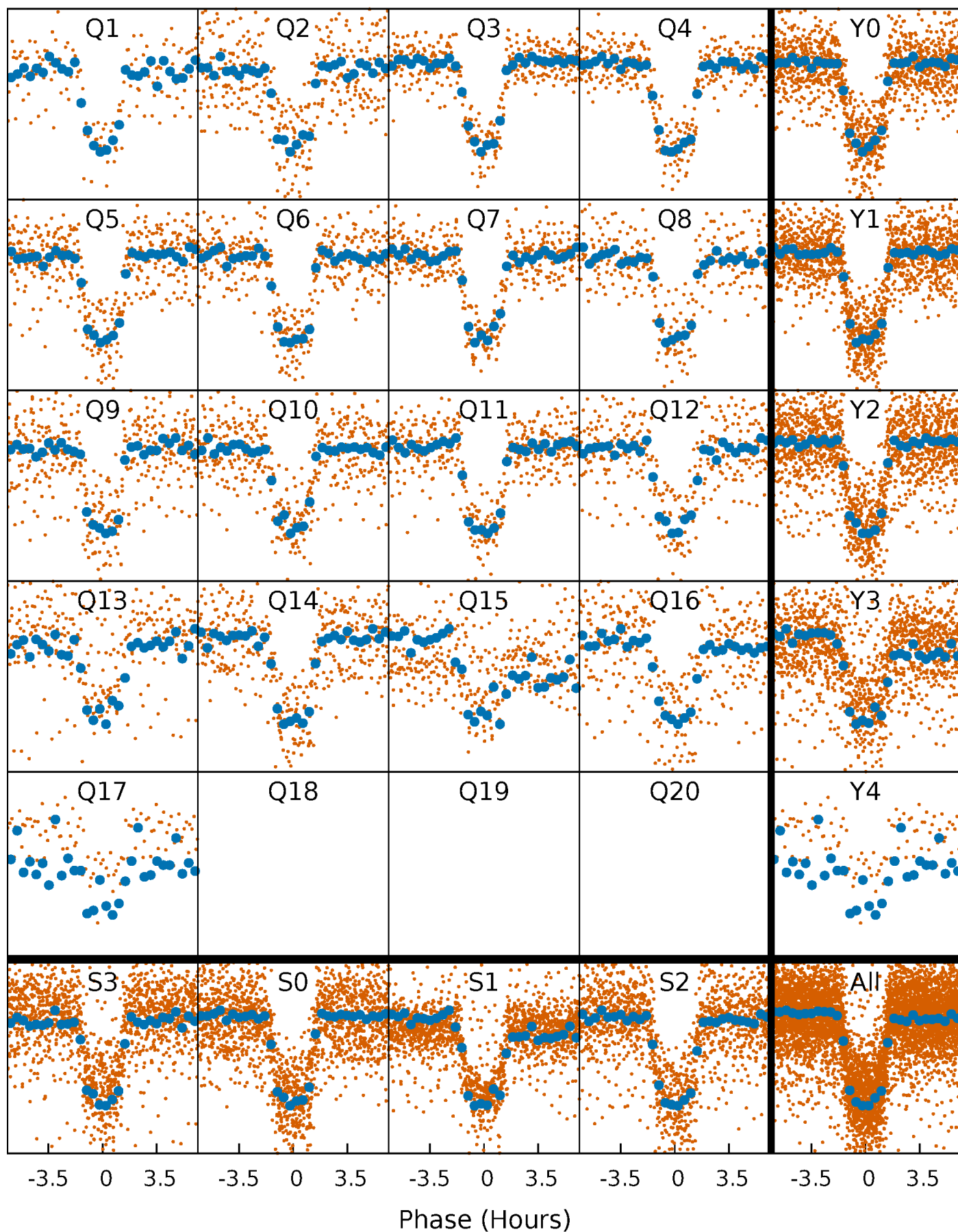


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



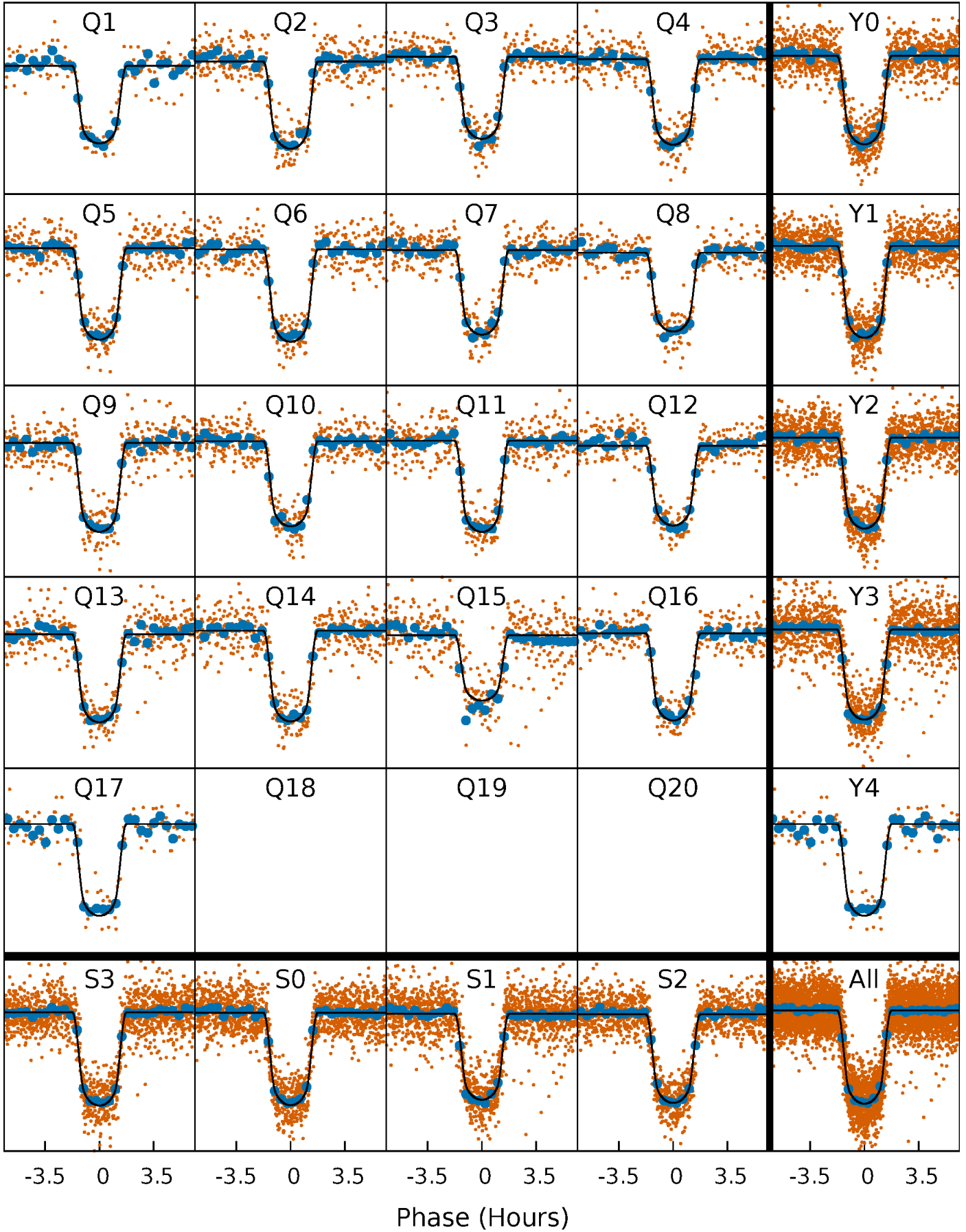
PDC Quarter-Phased Transit Curves

TCE 009579641-01 P= 5.412190 Days $T_0=133.144829$ (BKJD)



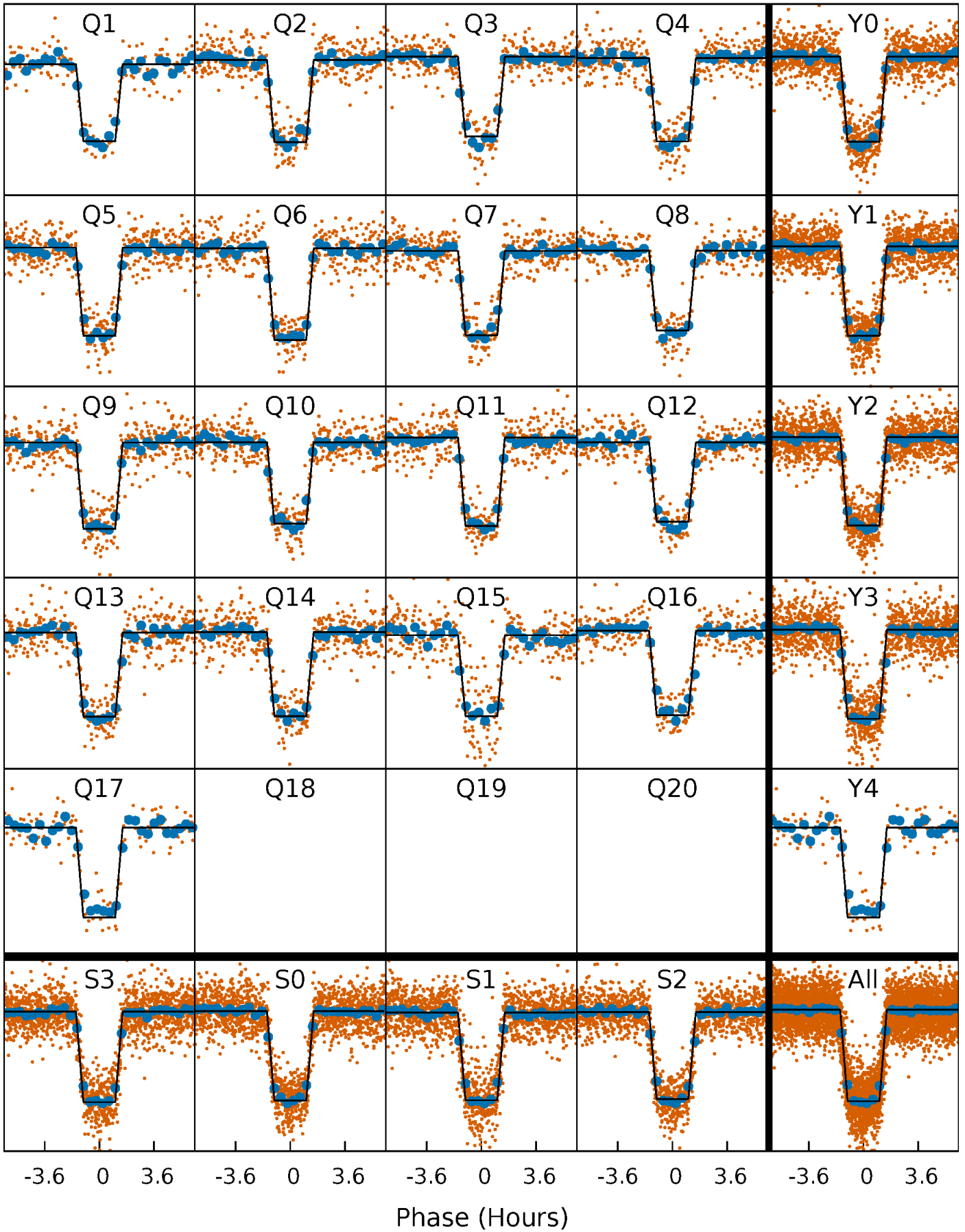
DV Quarter-Phased Transit Curves

TCE 009579641-01 P= 5.412190 Days $T_0=133.144829$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

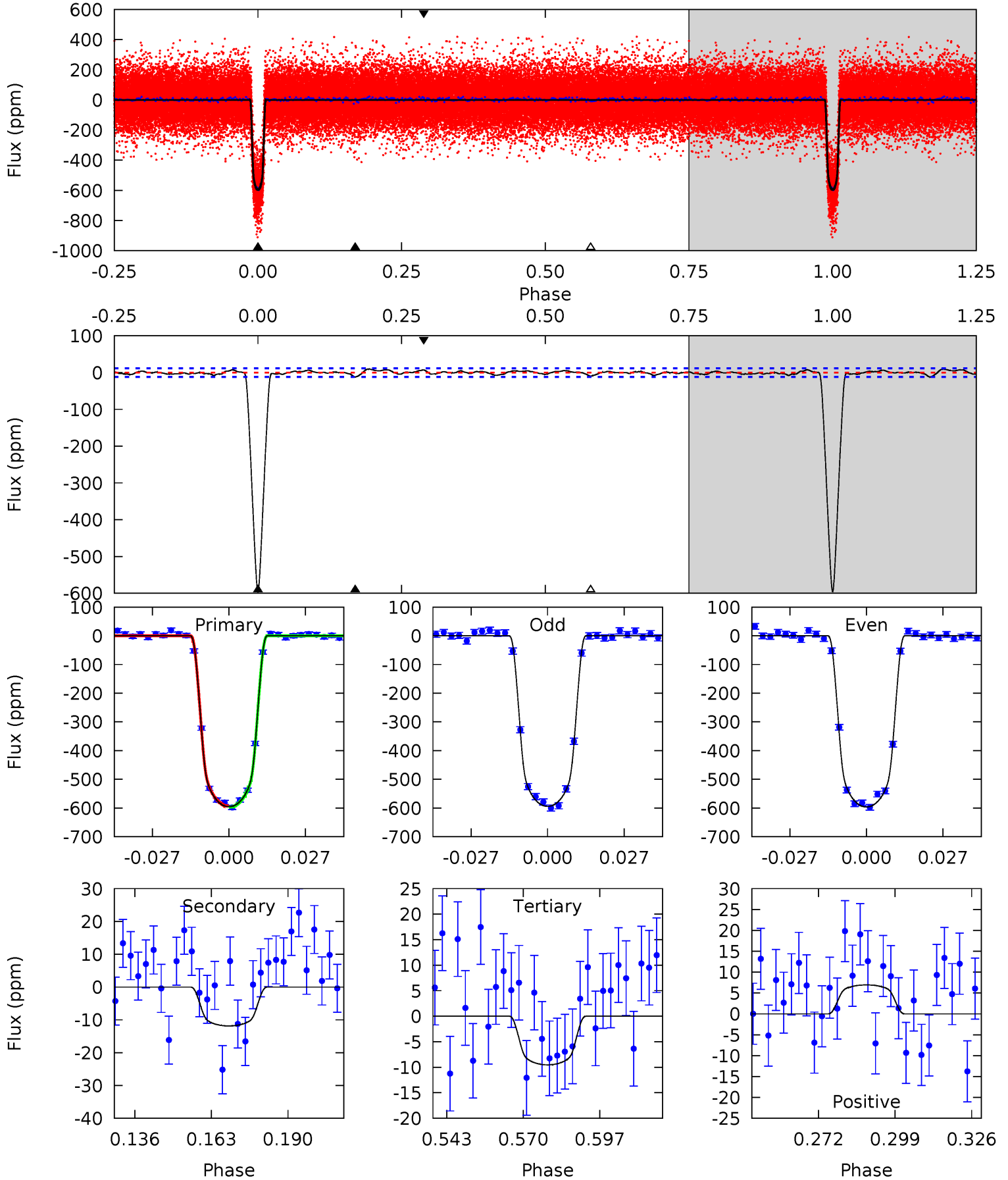
TCE 009579641-01 P= 5.412179 Days $T_0=133.146249$ (BKJD)



DV Model-Shift Uniqueness Test

009579641-01, P = 5.412190 Days, E = 127.732639 Days

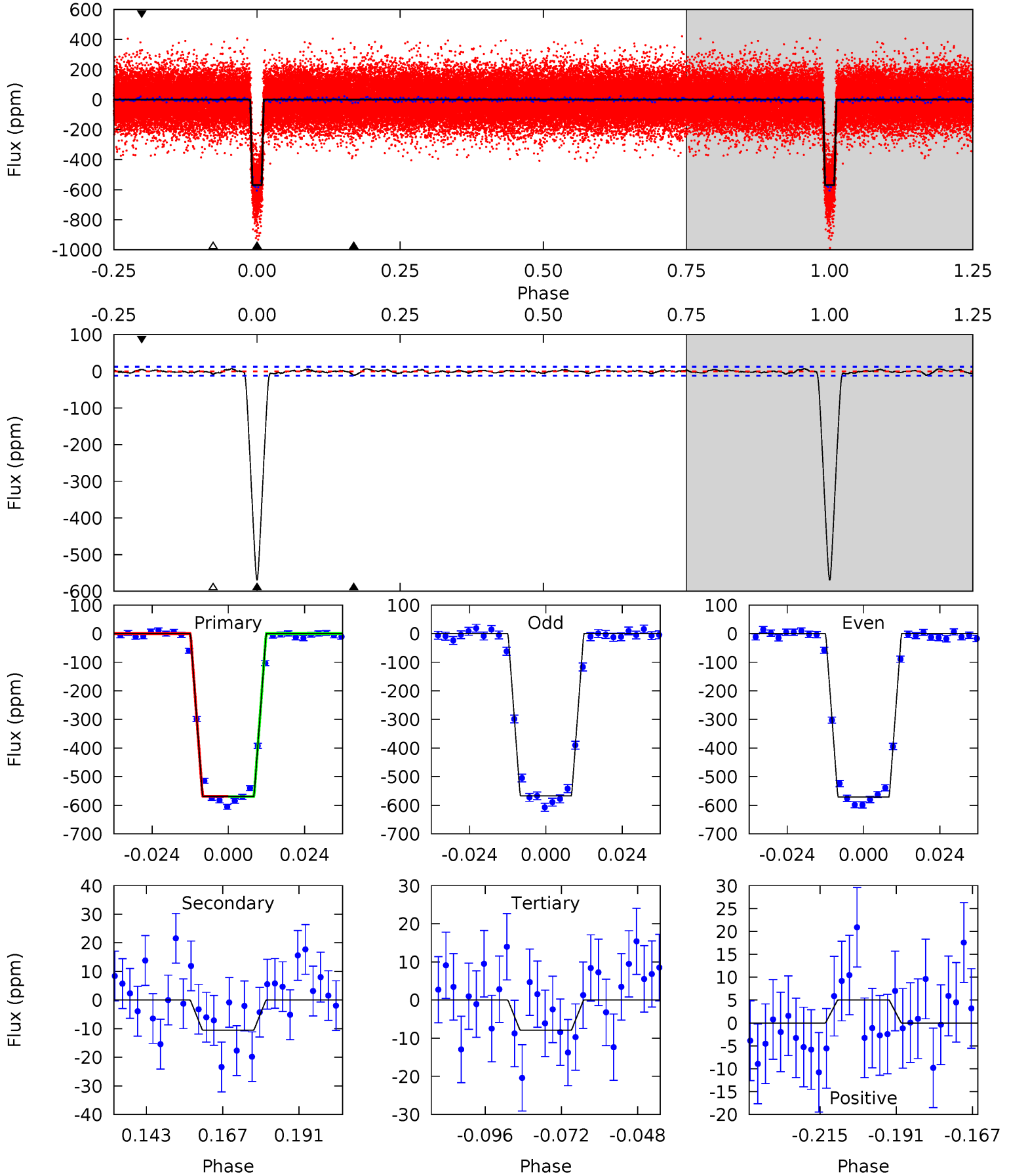
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
241.8	4.82	3.87	2.82	4.83	2.21	1.40	237.9	239.0	0.95	2.00	0.40	1.00	0.02	0.76



Alt Model-Shift Uniqueness Test

009579641-01, P = 5.412179 Days, E = 127.734070 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
223.9	4.13	3.11	1.97	4.86	2.26	1.04	220.8	221.9	1.03	2.16	0.78	0.99	0.01	0.13



Stellar Parameters For KIC 009579641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5779^{+104}_{-115}	$4.339^{+0.132}_{-0.108}$	$-0.060^{+0.150}_{-0.150}$	$1.087^{+0.157}_{-0.142}$	$0.941^{+0.074}_{-0.054}$	$1.033^{+0.572}_{-0.340}$
	+2%/-2%	+3%/-2%	+250%/-250%	+14%/-13%	+8%/-6%	+55%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 009579641-01 / KOI 0115.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-12 ± 2	$3.11^{+0.27}_{-0.25}$	1526^{+66}_{-65}	2776^{+77}_{-98}	$2.369^{+0.648}_{-0.559}$
Alt.	-11 ± 3	$2.84^{+0.24}_{-0.22}$	1520^{+65}_{-66}	2796^{+100}_{-123}	$2.499^{+0.825}_{-0.678}$

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 $A_{obs} \gg 1.0$

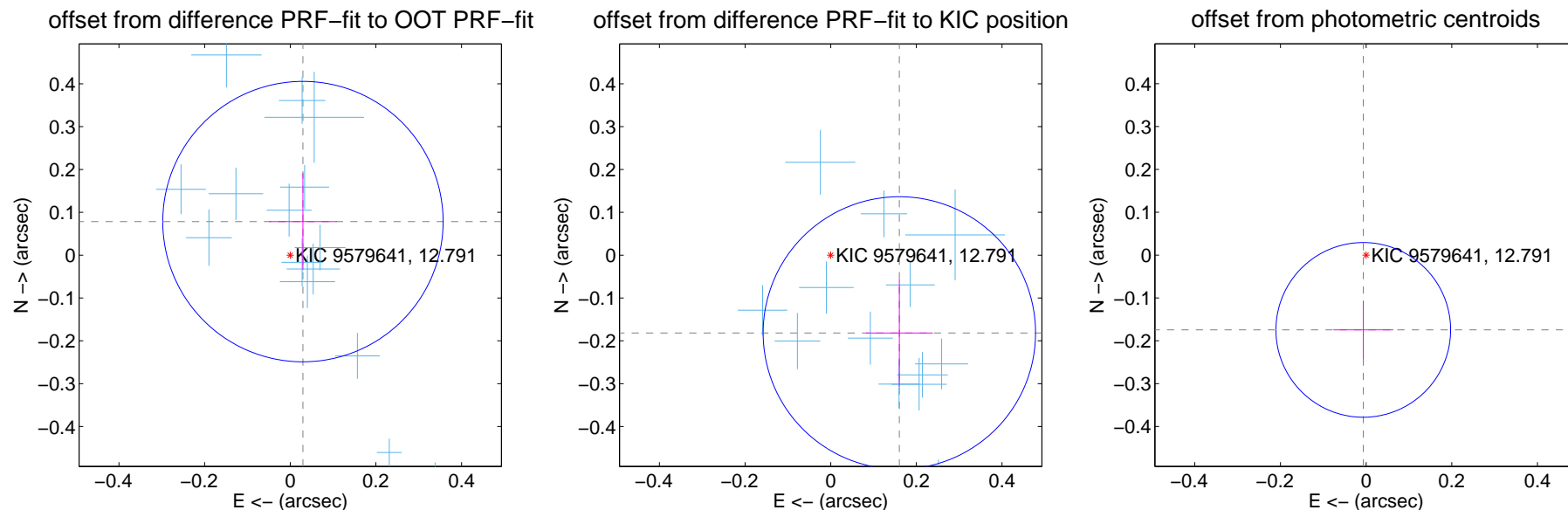
DV Centroid Data

Supplemental centroid analysis for 009579641-01. Kepler magnitude: 12.79. Transit SNR 160.31

There are 17 quarters with good PRF difference image offsets

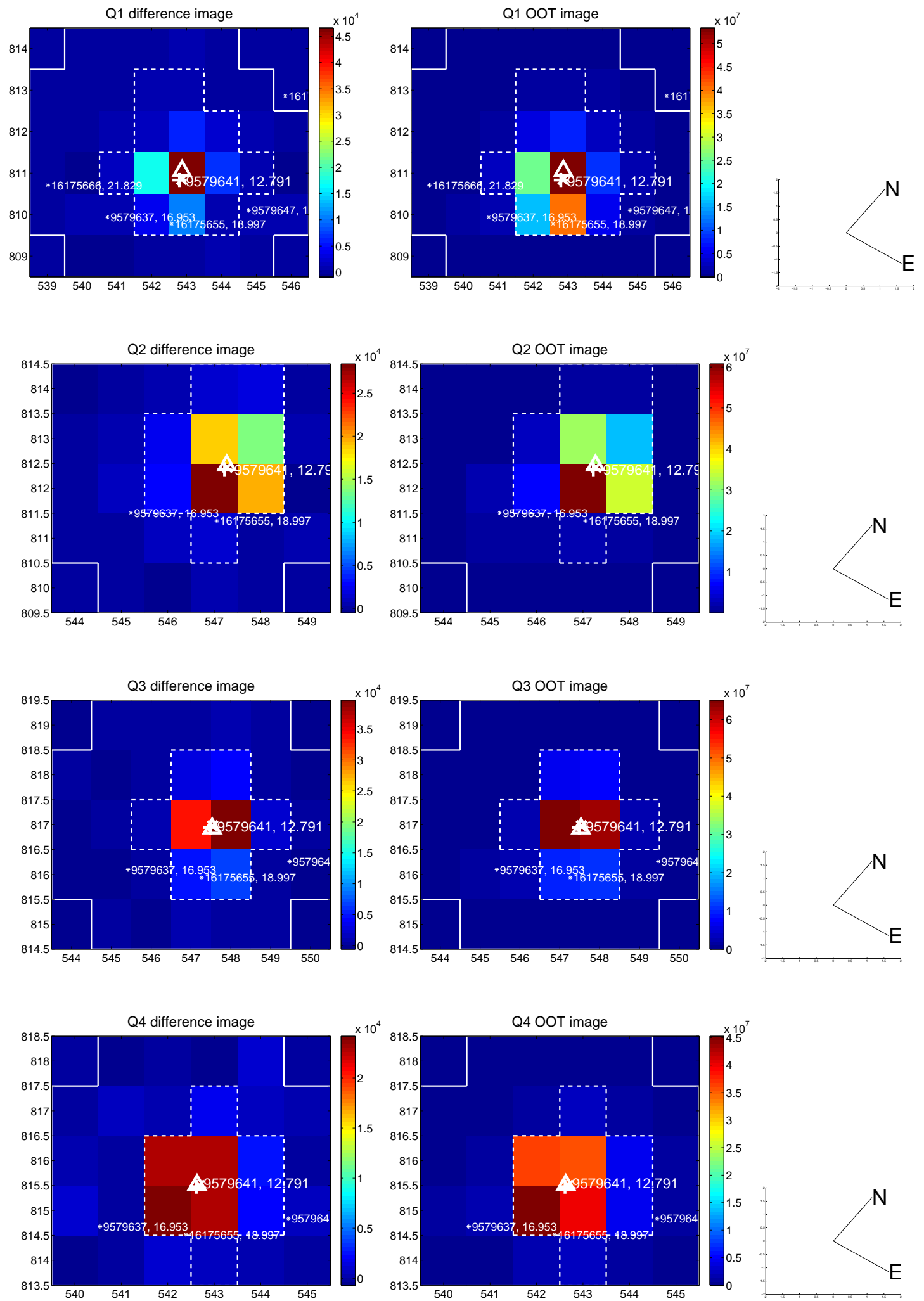
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.084 ± 0.109	0.77	-0.030 ± 0.079	0.078 ± 0.113
PRF-fit source offset from KIC position	0.242 ± 0.106	2.28	-0.160 ± 0.078	-0.182 ± 0.125
photometric centroid source offset	0.17 ± 0.07	2.57	0.01 ± 0.07	-0.17 ± 0.07

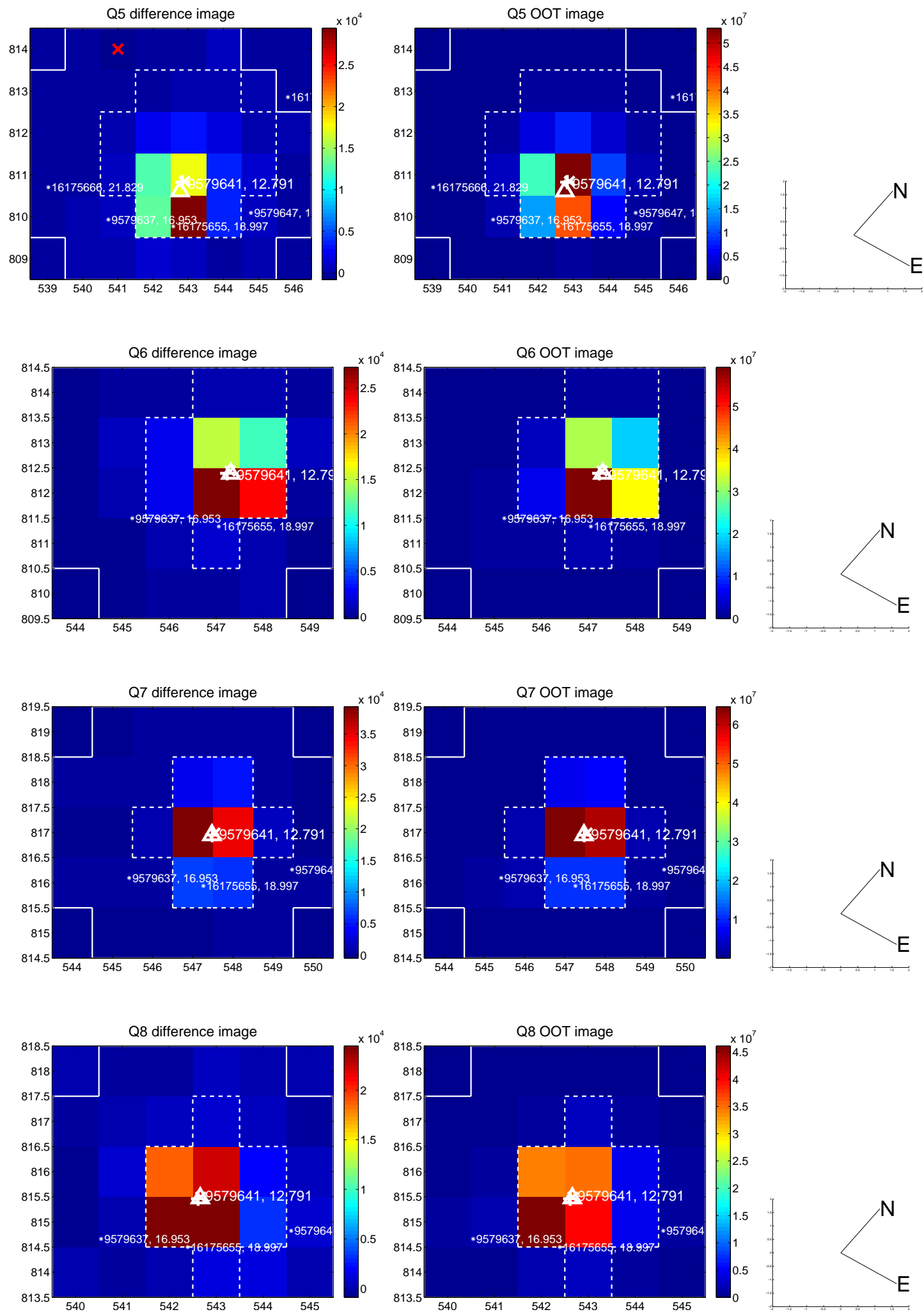


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

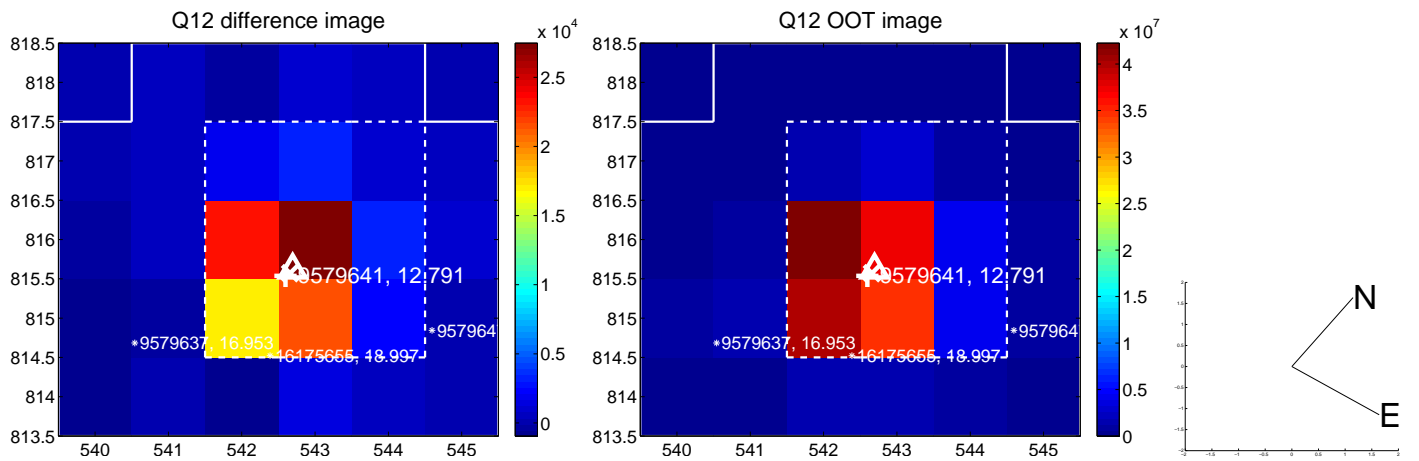
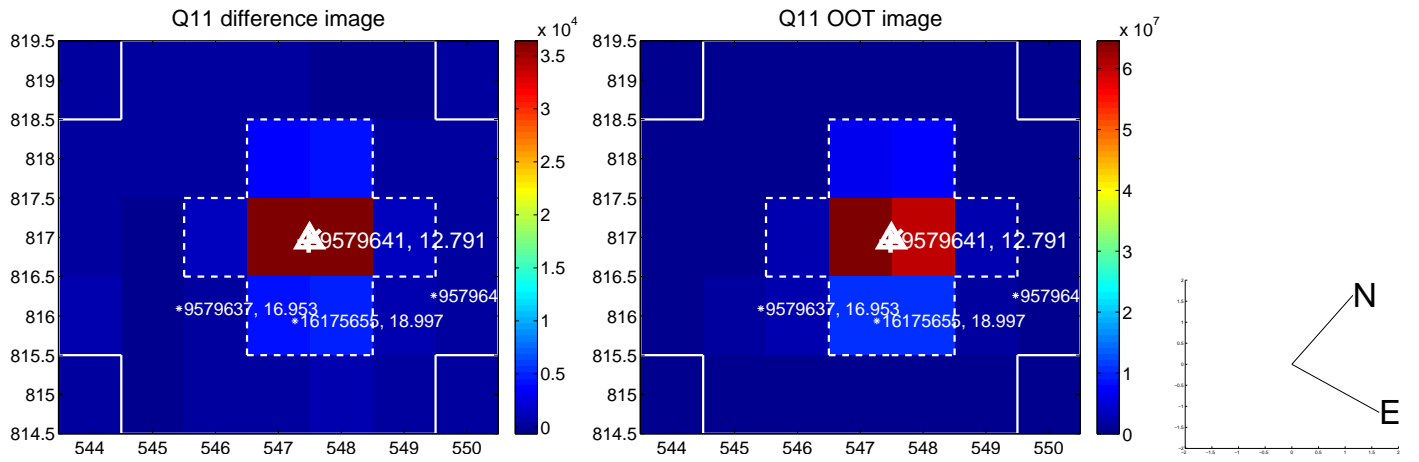
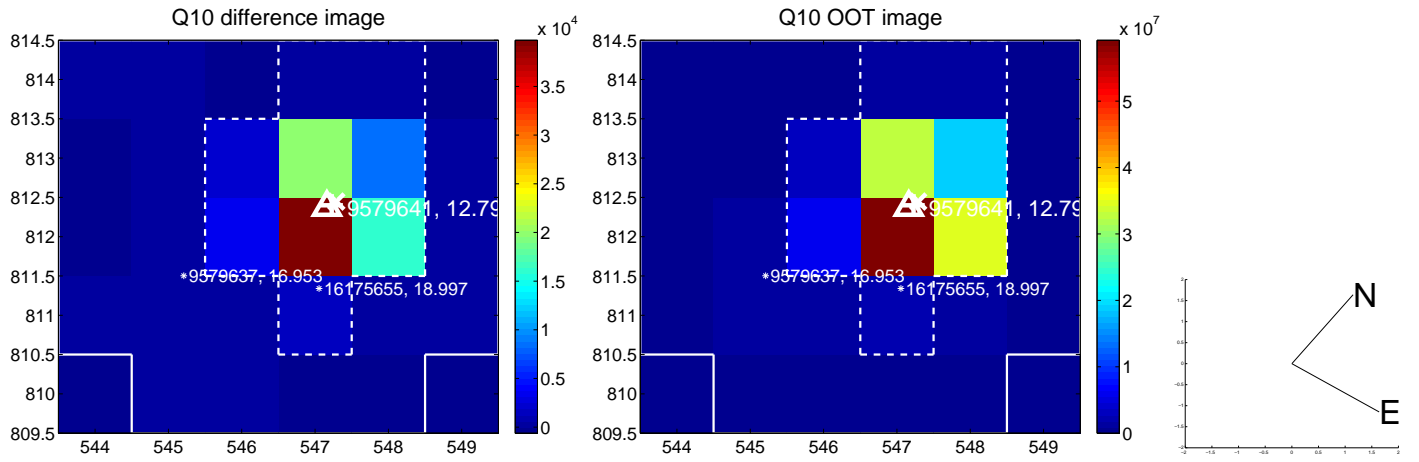
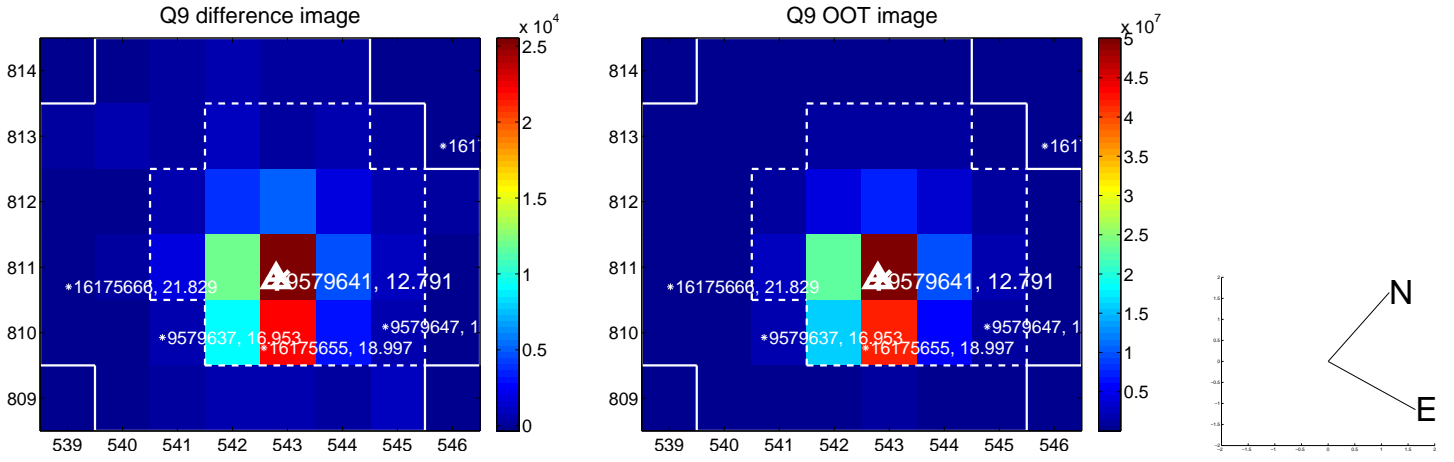
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



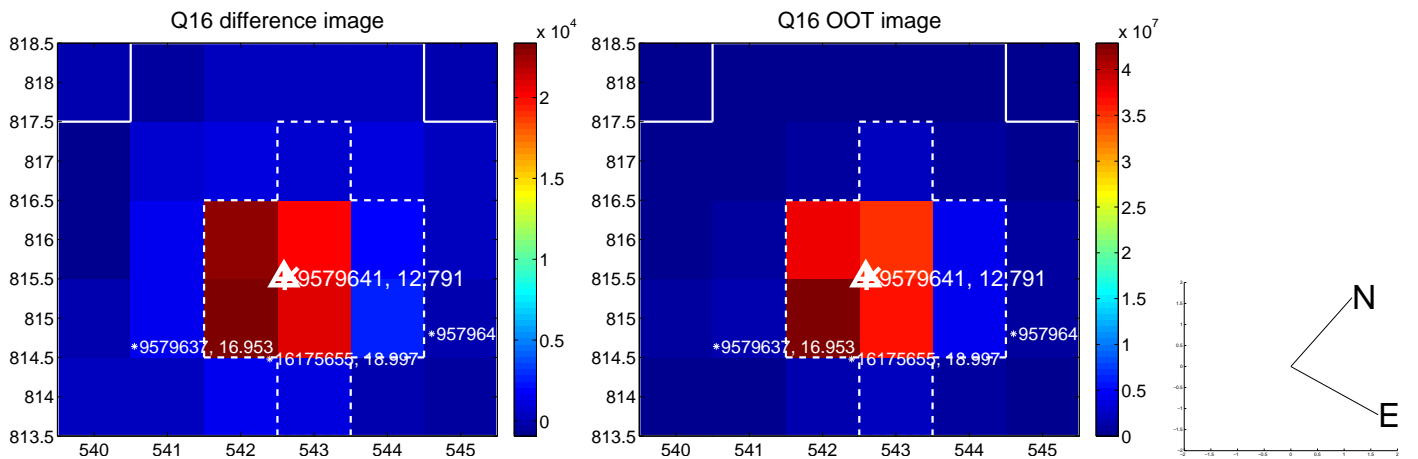
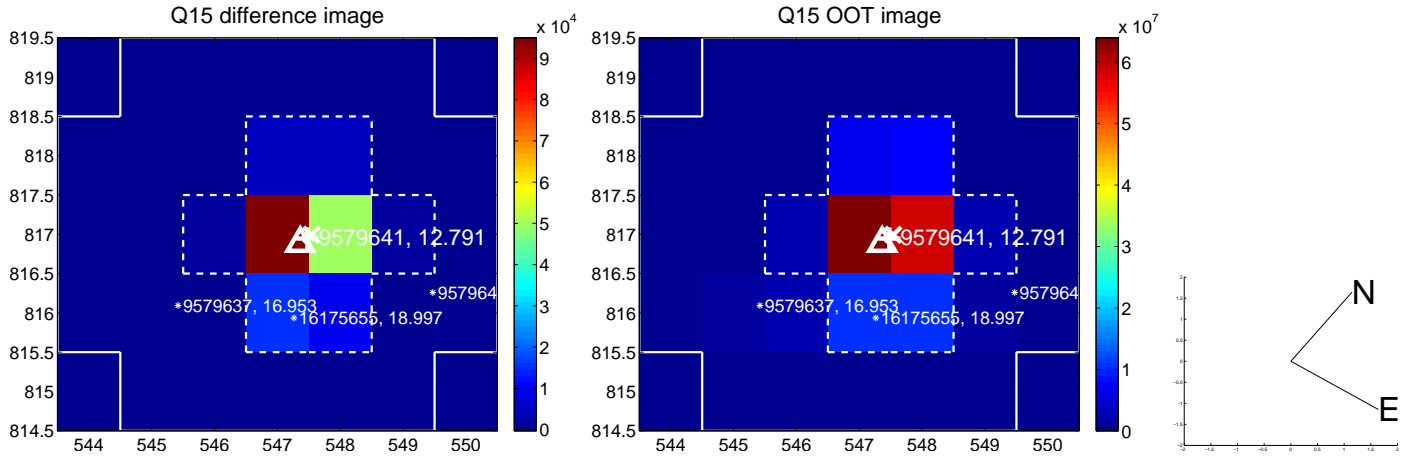
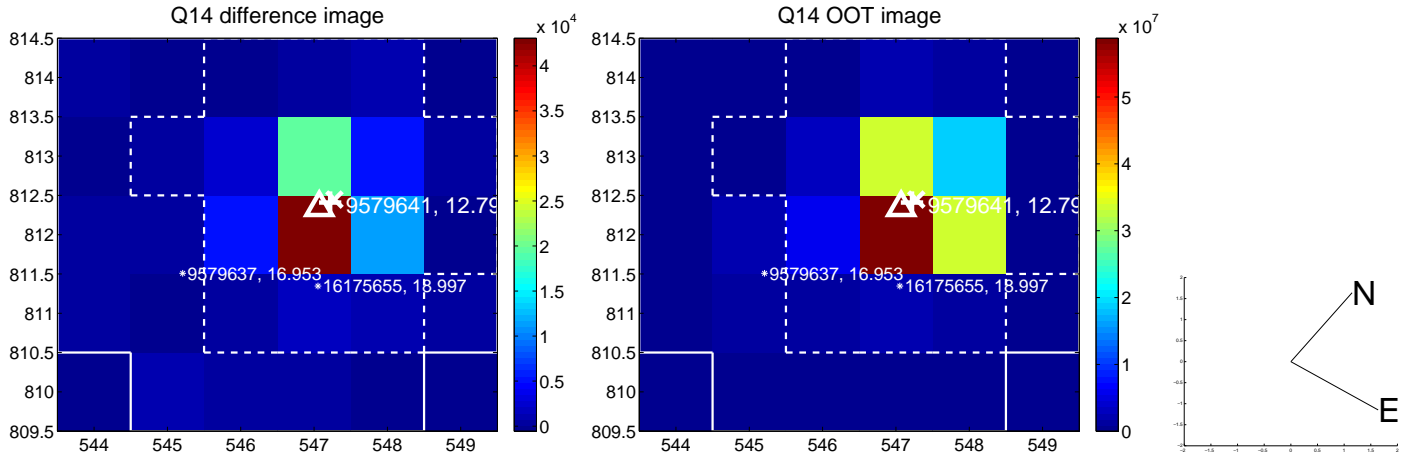
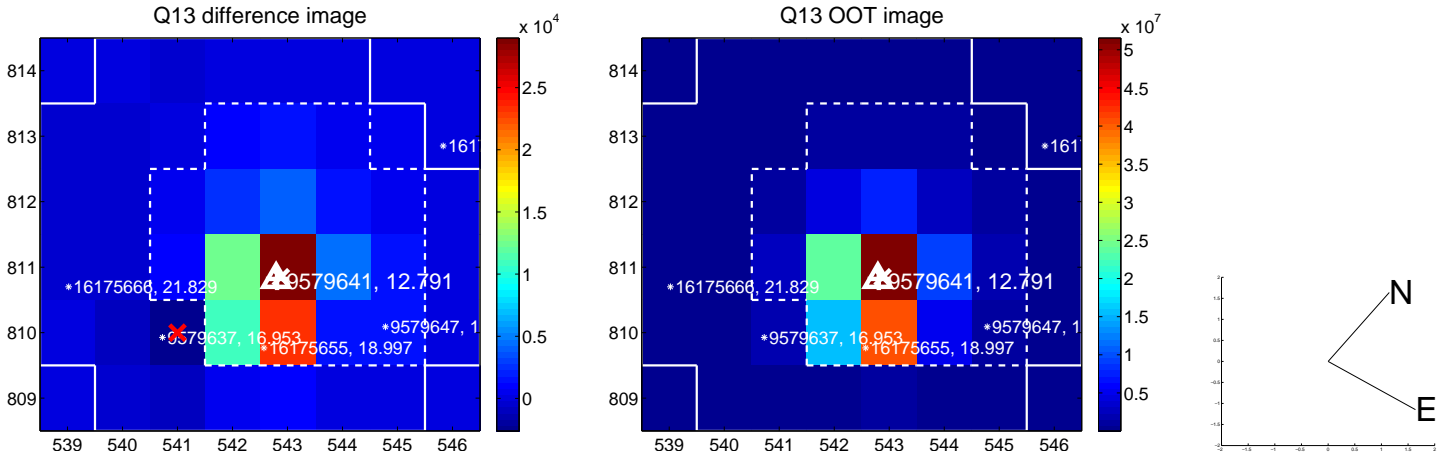
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



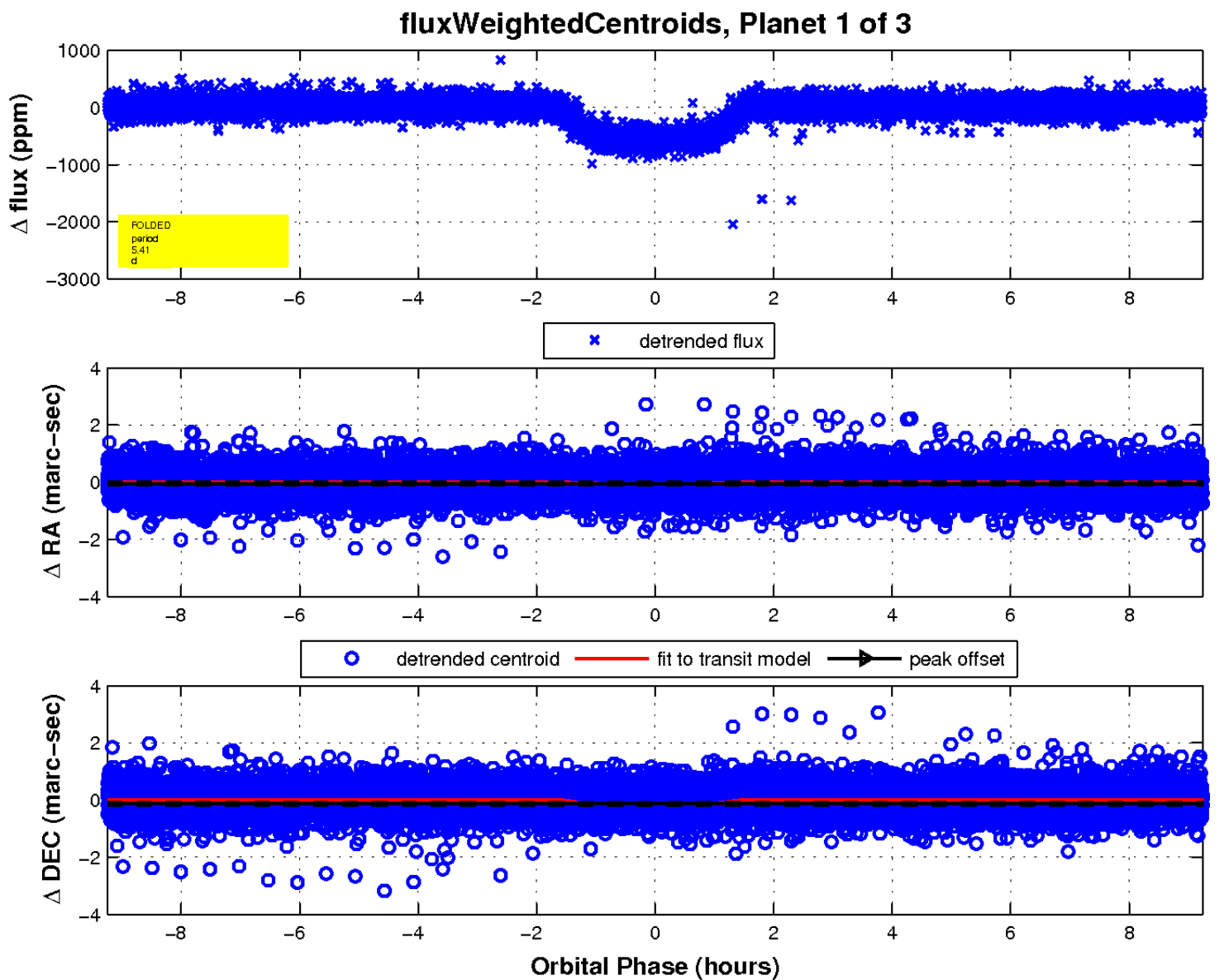
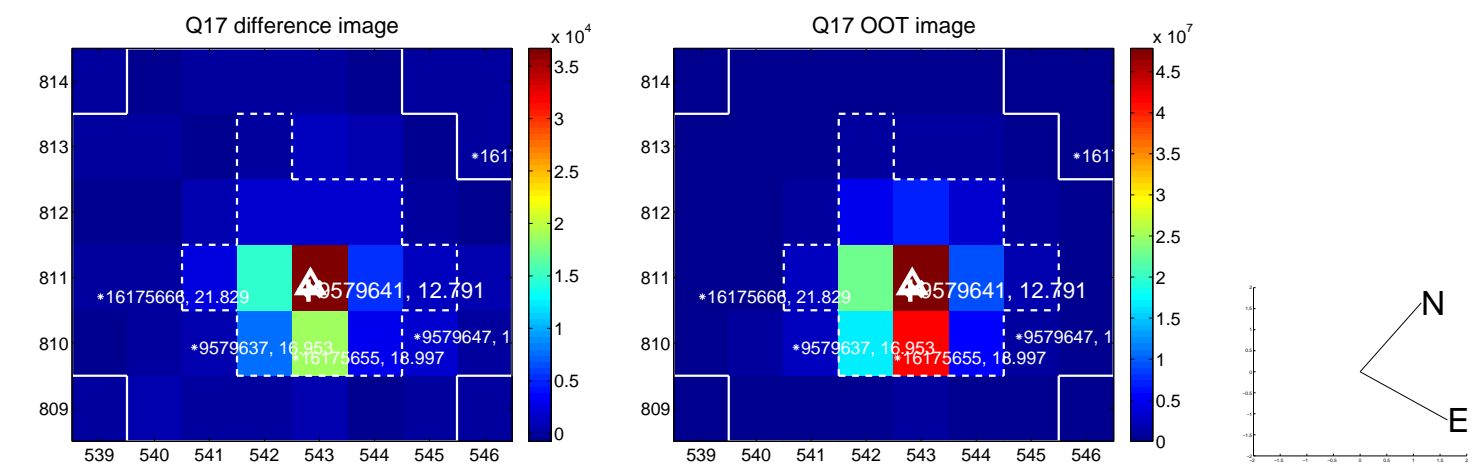
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



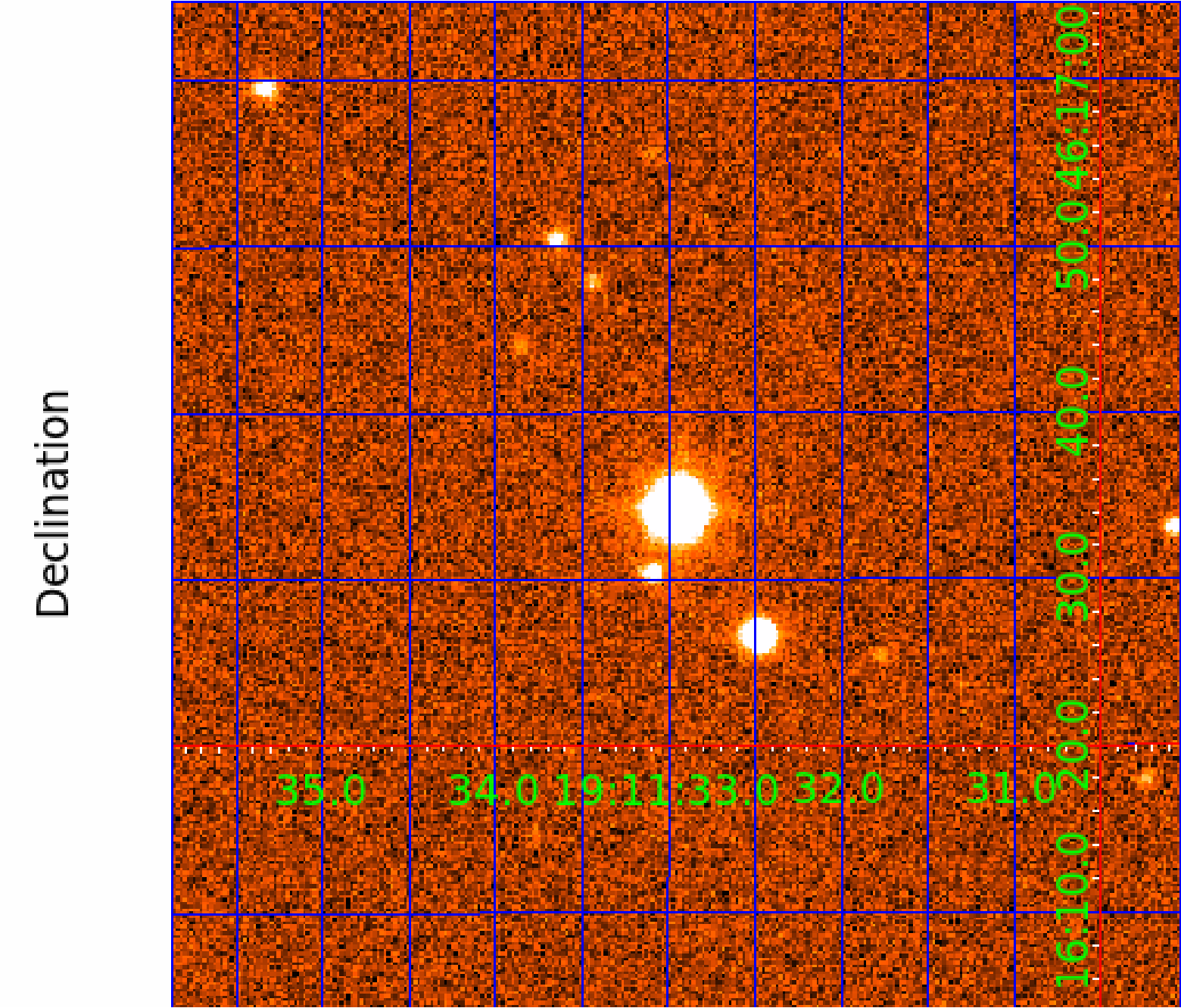
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009579641

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})
009579641-01	OBS	0115.01	5.412190	133.144829	600.4	3.082	163.5	160.3	1.09	5779	3.12	337.77
009579641-02	OBS	0115.02	7.125951	131.878846	184.9	2.986	39.8	43.8	1.09	5779	1.75	234.06
009579641-03	OBS	0115.03	3.435914	132.662216	24.6	3.320	7.4	8.7	1.09	5779	0.64	619.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009579641-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009579641-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009579641-03	OBS	PC	0.87	0	0	0	0	NO_COMMENT

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

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

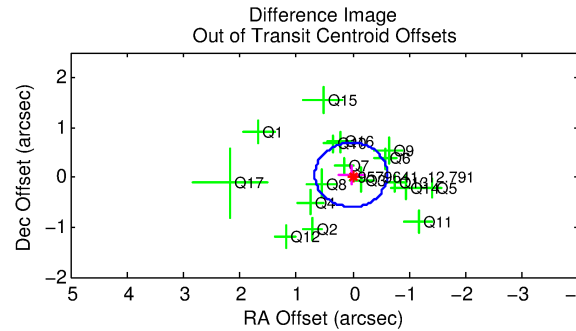
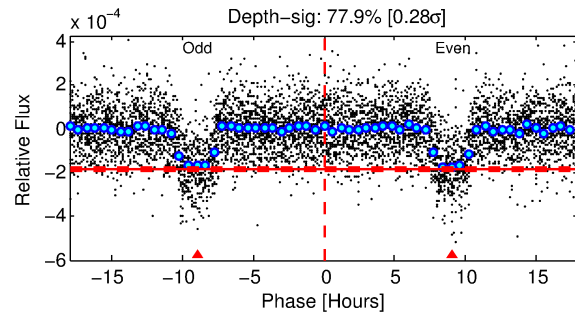
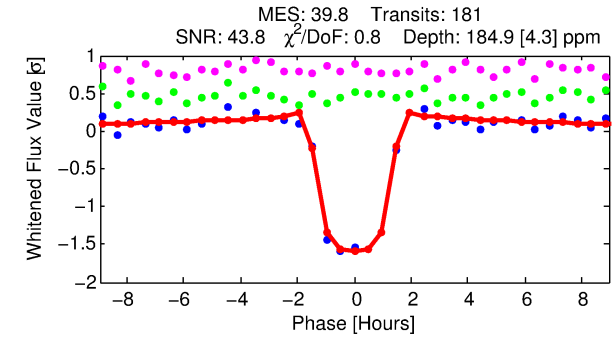
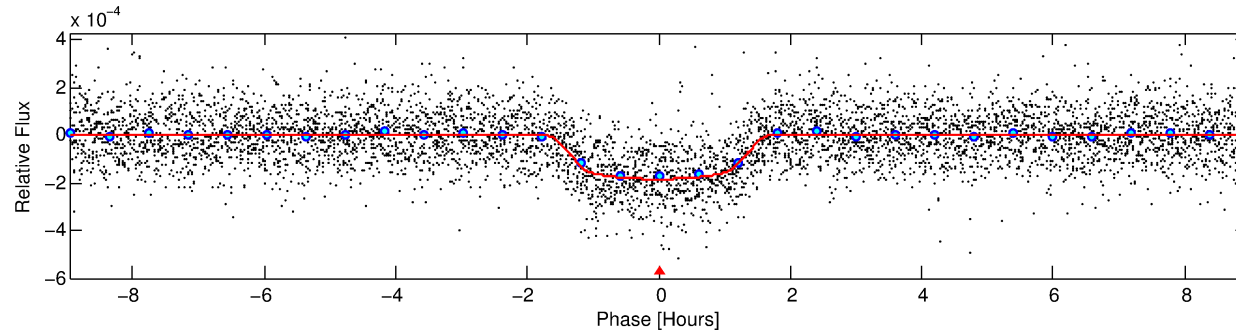
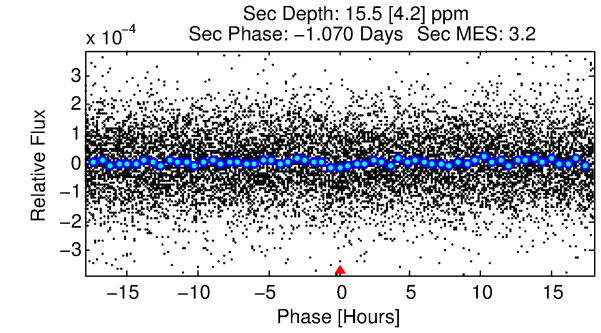
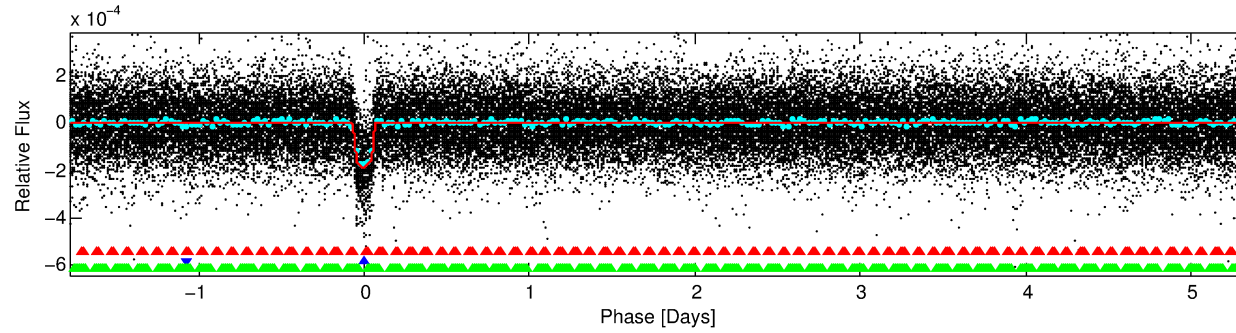
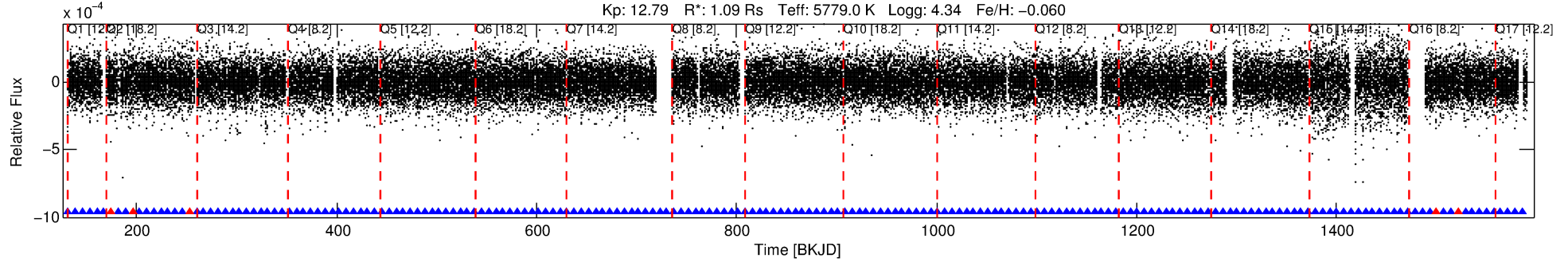
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009579641-02

No Significant Match Found

DV One-Page Summary

KIC: 9579641 Candidate: 2 of 3 Period: 7.126 d
KOI: K00115.02 Name: Kepler-105c Corr: 0.970



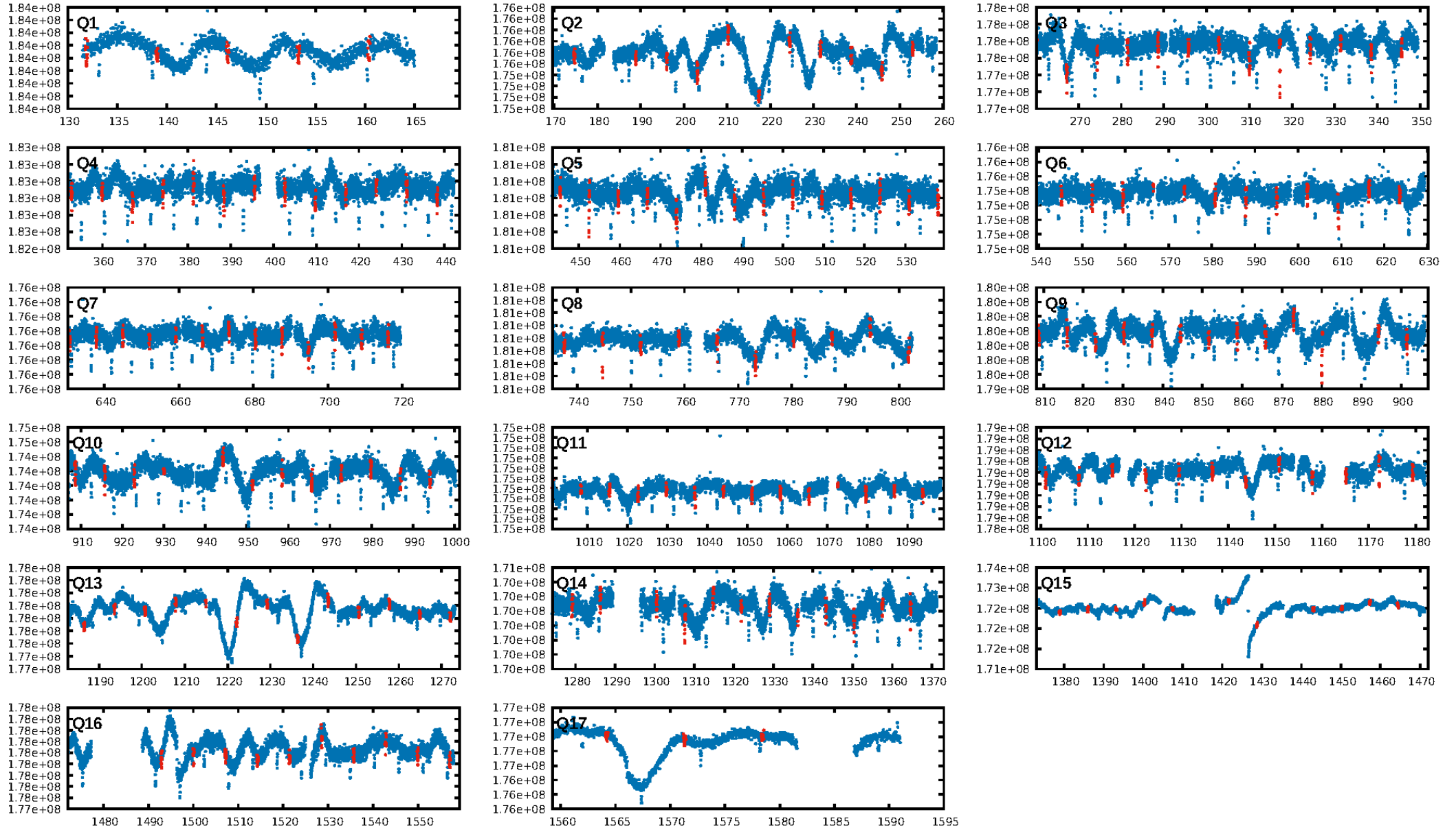
DV Fit Results:

Period = 7.12595 [0.00001] d
Epoch = 131.8788 [0.0012] BKJD
Rp/R* = 0.0148 [0.0017]
a/R* = 8.65 [4.78]
b = 0.90 [0.12]
Seff = 234.06 [55.72]
Teq = 997 [59] K
Rp = 1.75 [0.33] Re
a = 0.0710 [0.0099] AU
Ag = 13.99 [5.90] [2.20σ]
Teffp = 2982 [273] K [7.11σ]

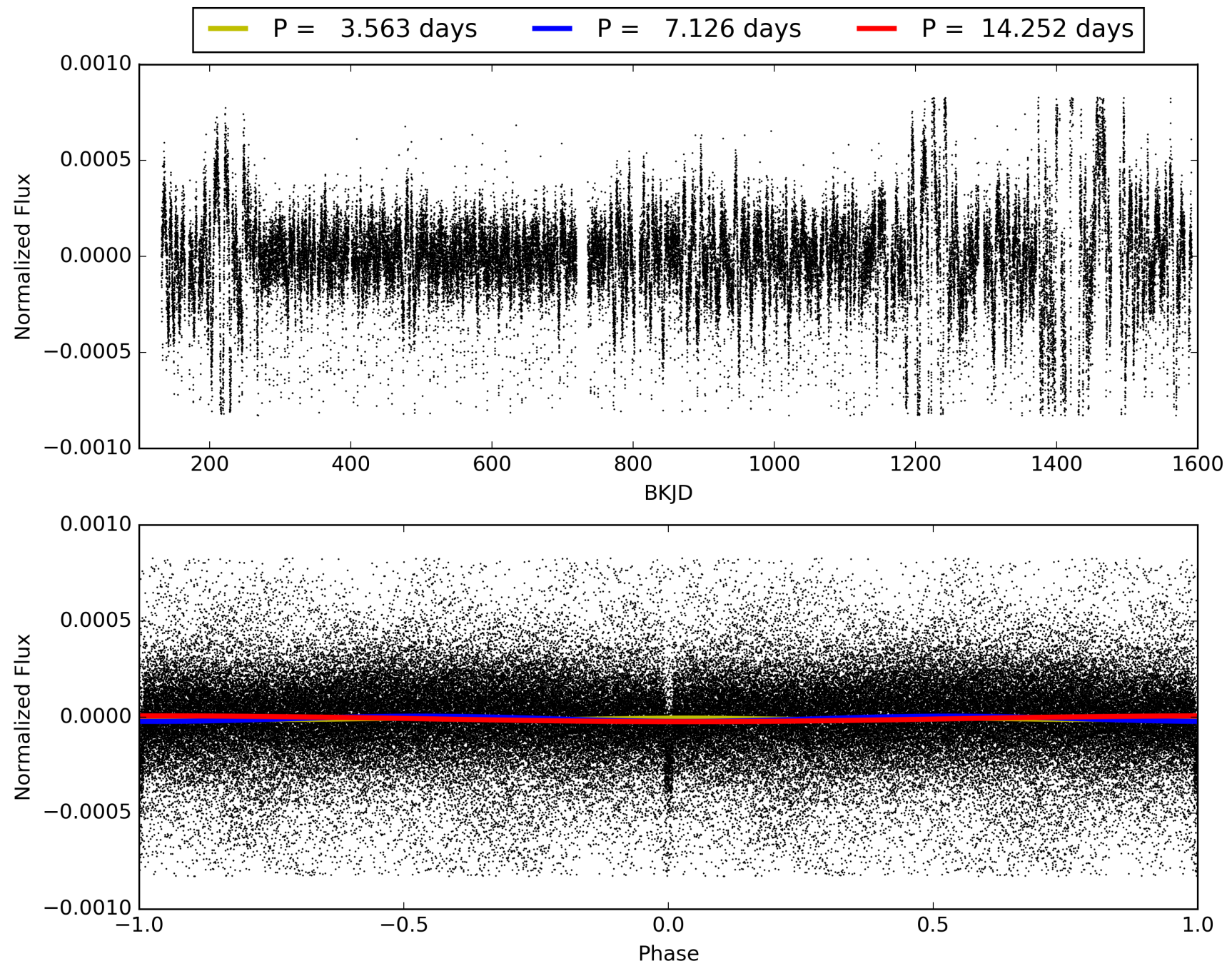
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.58σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [168/173]
GhostDiagnostic-chr: 13.53
Centroid-sig: 0.9%
Centroid-so: 0.788 arcsec [3.13σ]
OotOffset-rm: 0.055 arcsec [0.26σ]
KicOffset-rm: 0.231 arcsec [1.14σ]
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]

TCE 009579641-02, PDC Light Curves

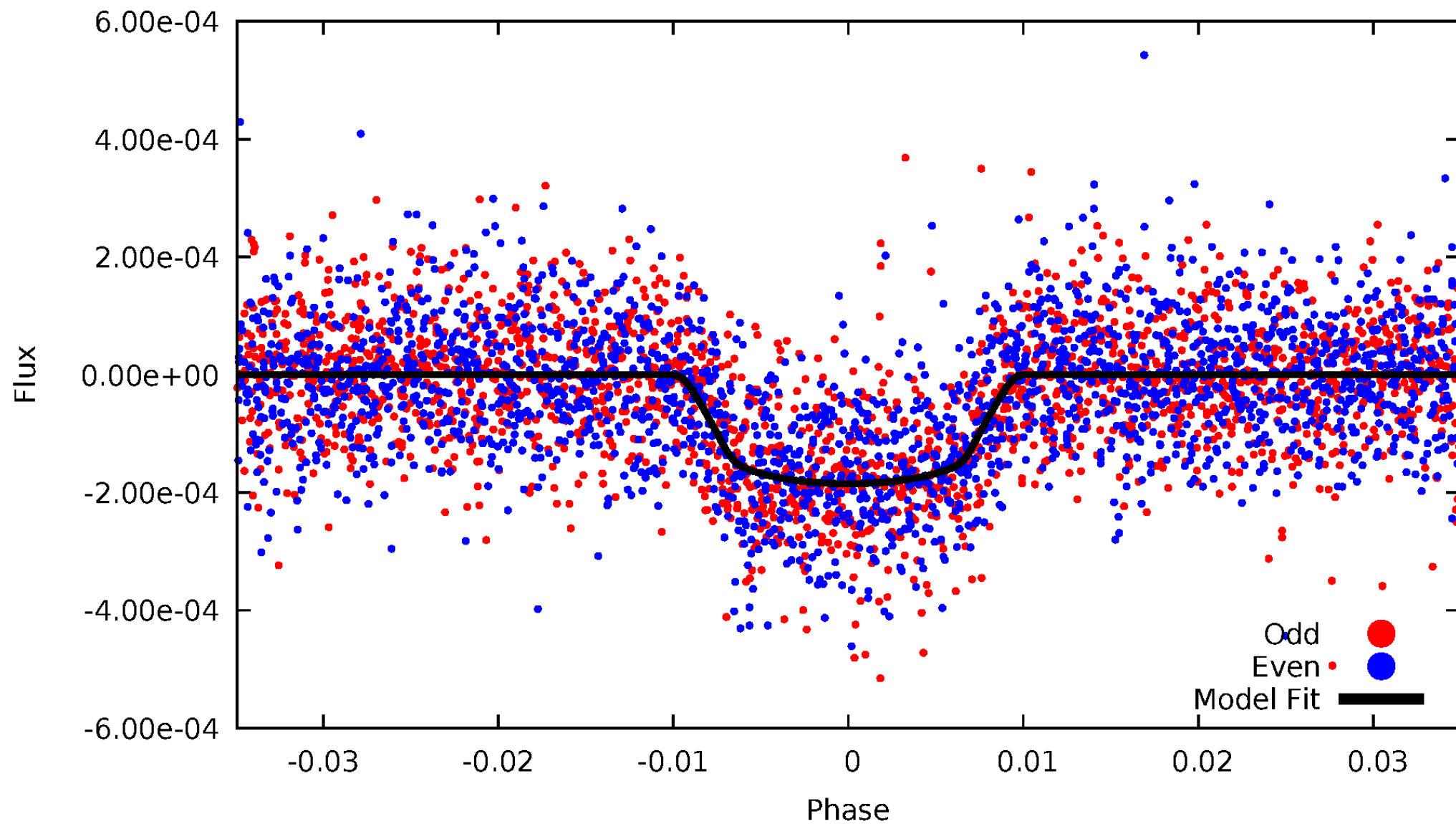


TCE 009579641-02



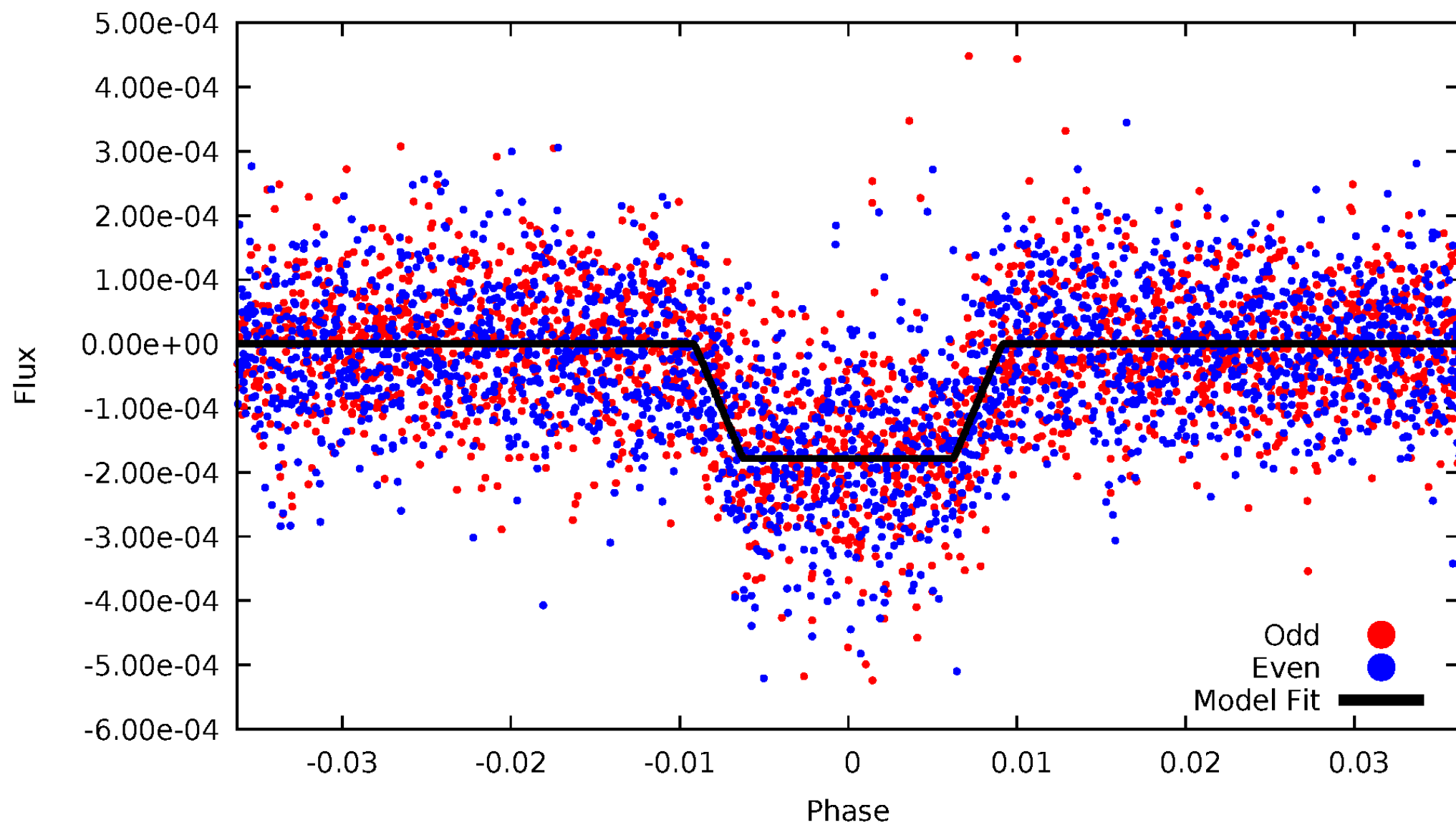
DV Odd/Even

TCE 009579641-02



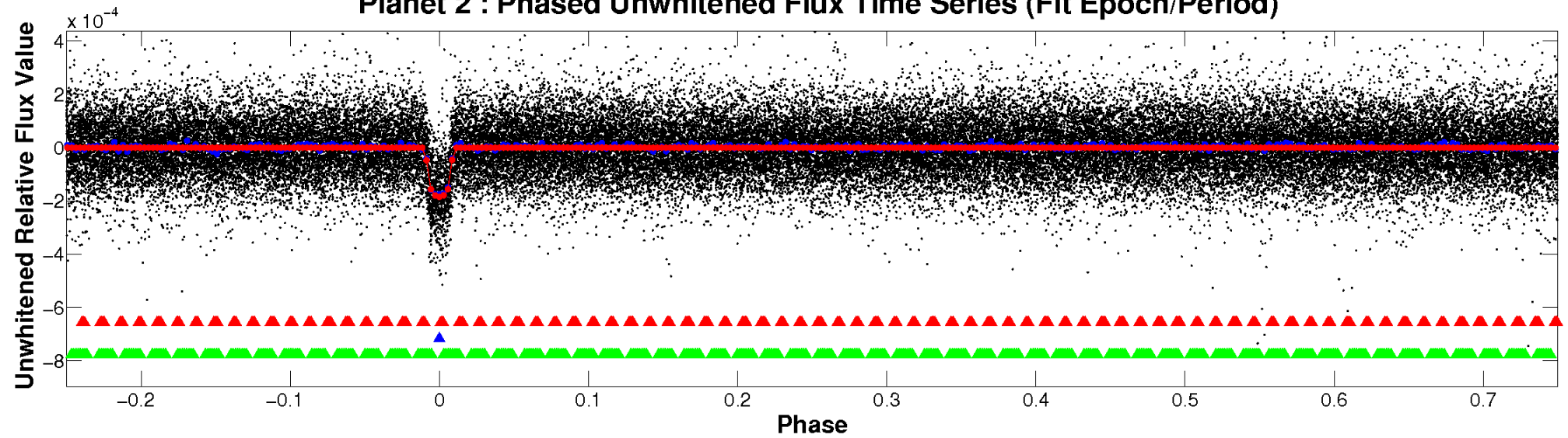
ALT Odd/Even

TCE 009579641-02

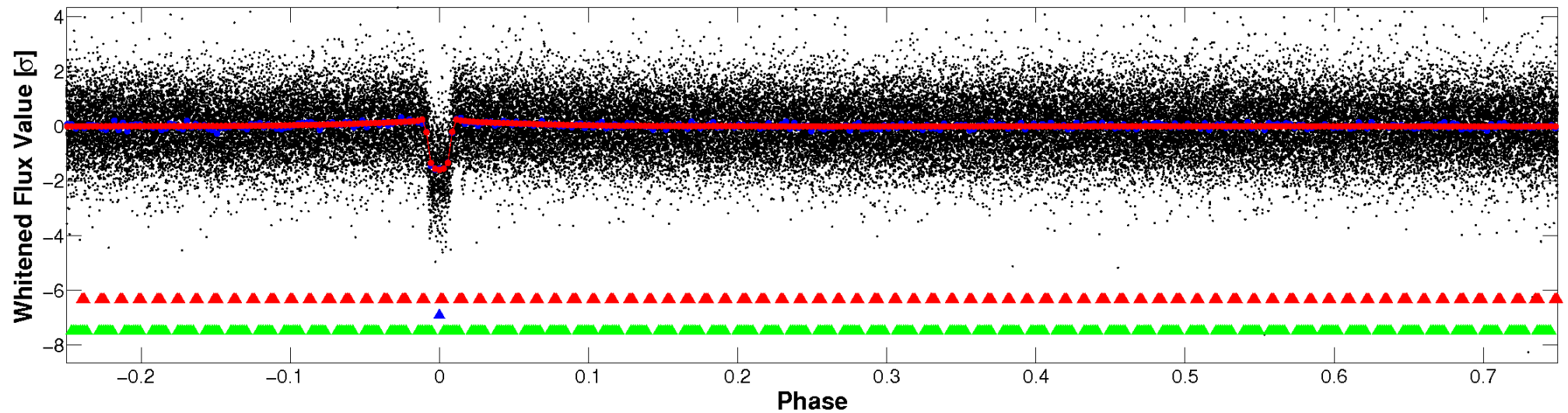


Non-Whitened Vs. Whitened Light Curve

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

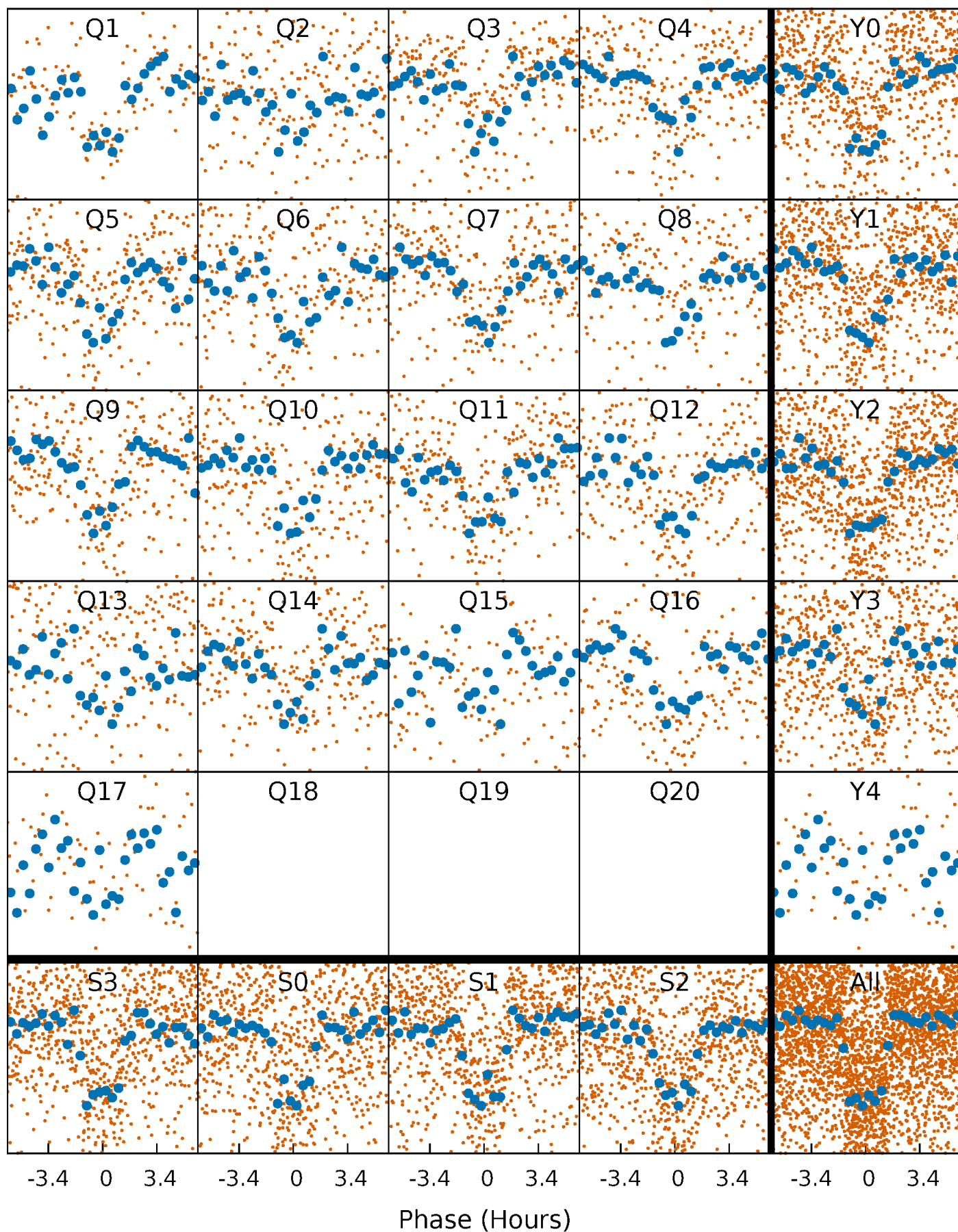


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



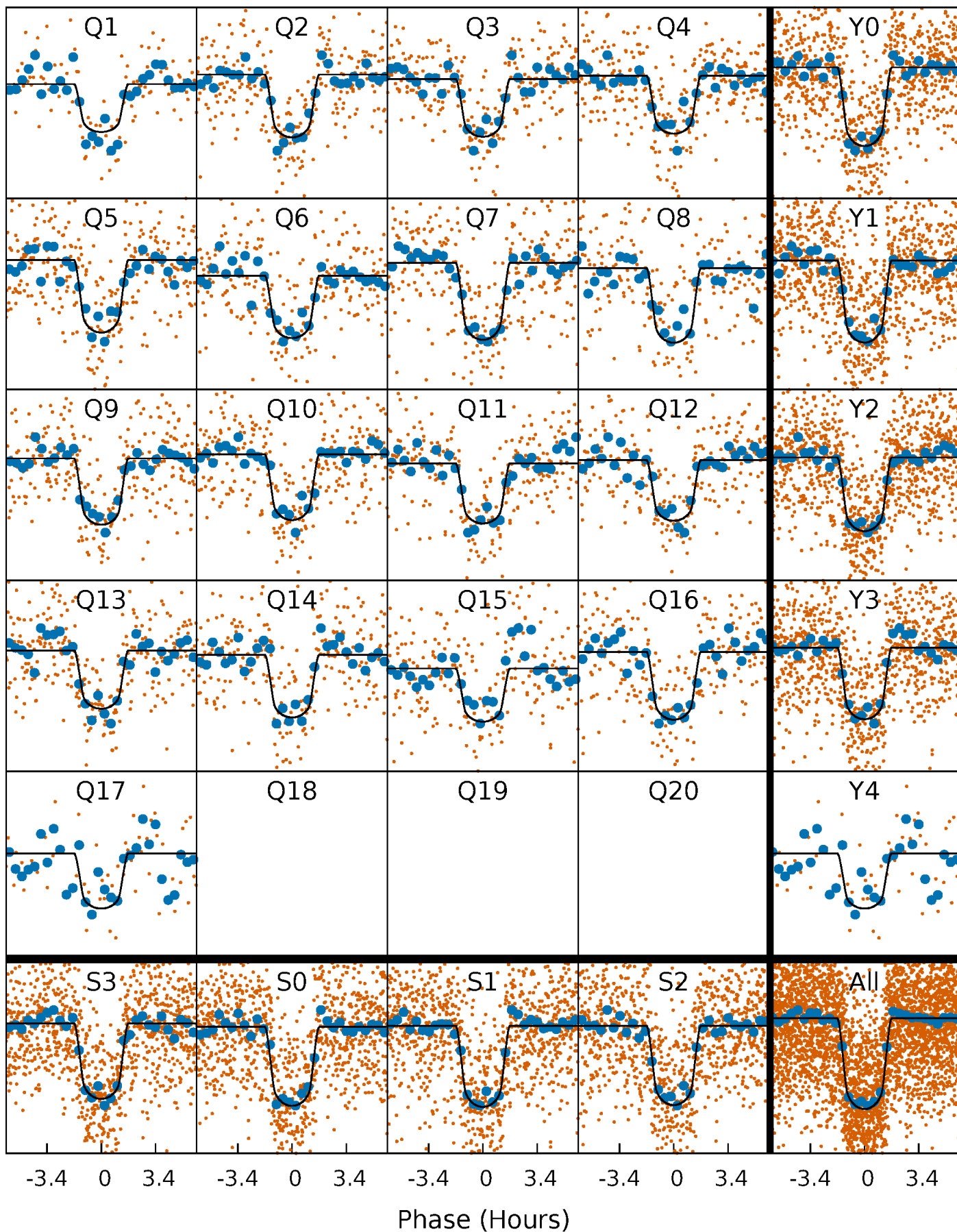
PDC Quarter-Phased Transit Curves

TCE 009579641-02 P= 7.125951 Days $T_0=131.878846$ (BKJD)



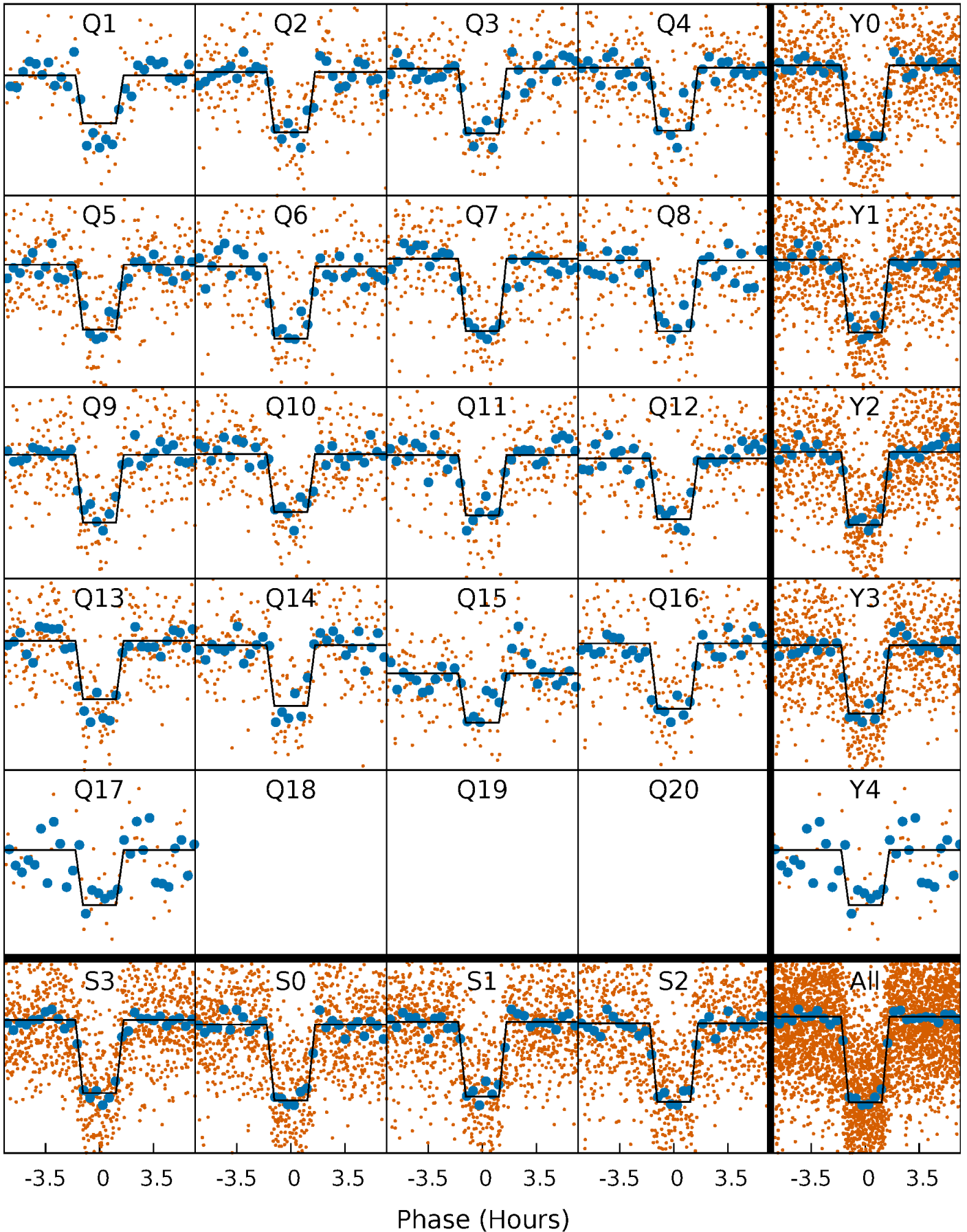
DV Quarter-Phased Transit Curves

TCE 009579641-02 P= 7.125951 Days $T_0=131.878846$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

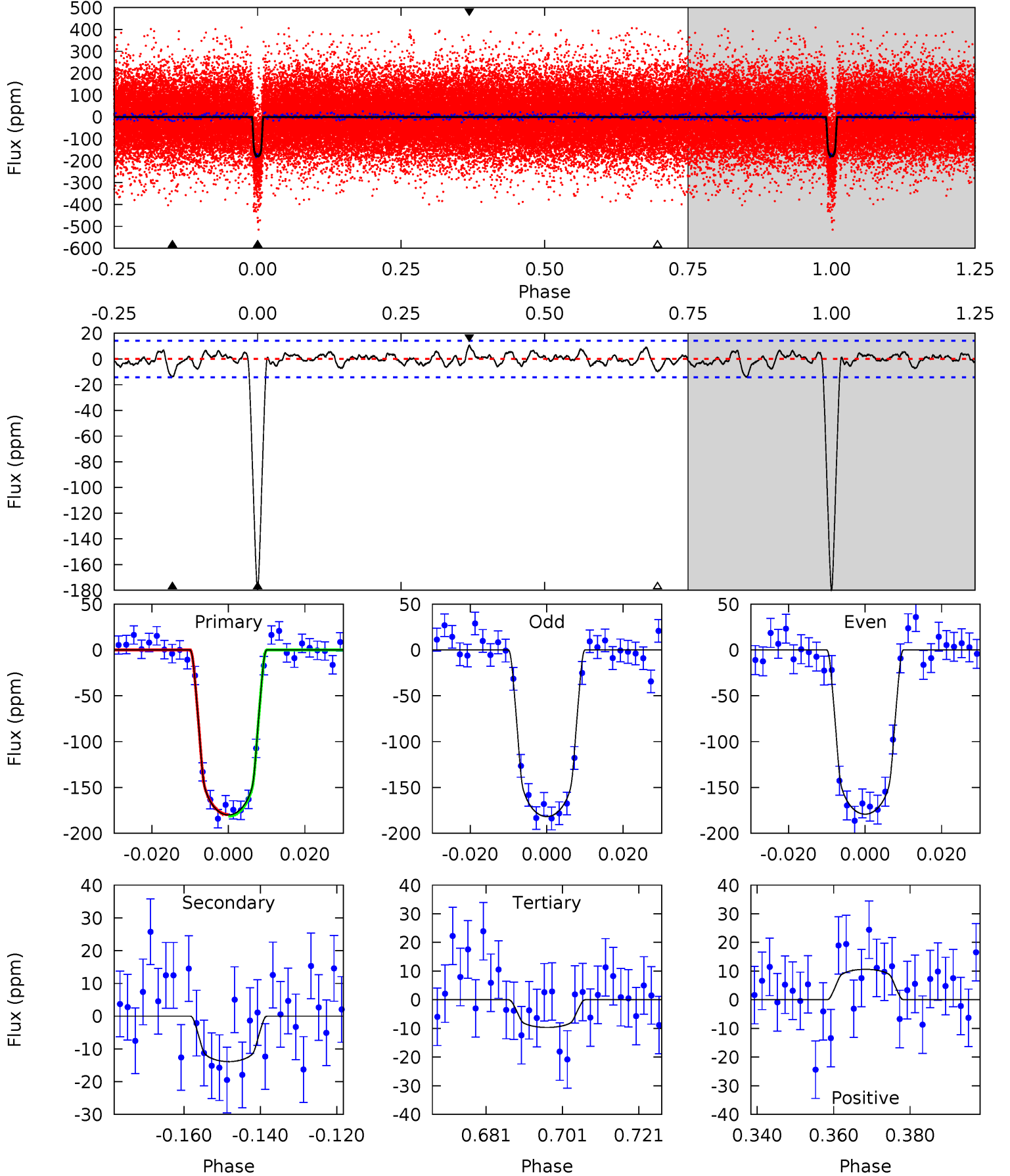
TCE 009579641-02 P= 7.125989 Days $T_0=131.874975$ (BKJD)



DV Model-Shift Uniqueness Test

009579641-02, P = 7.125951 Days, E = 124.752895 Days

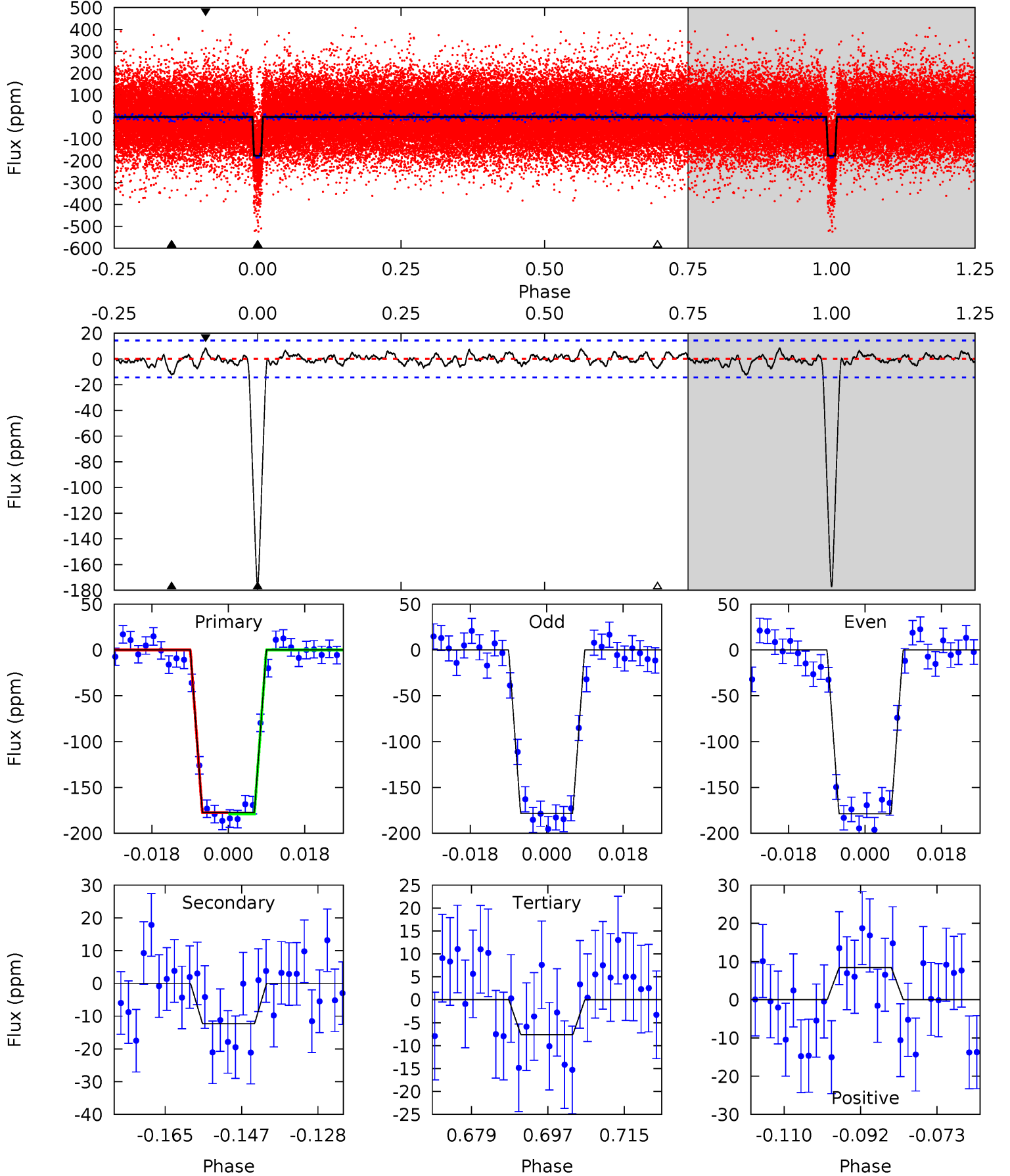
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.8	4.77	3.32	3.65	4.89	2.33	1.19	58.5	58.2	1.45	1.12	0.45	1.00	0.06	0.30



Alt Model-Shift Uniqueness Test

009579641-02, P = 7.125989 Days, E = 124.748986 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.4	4.19	2.59	2.88	4.91	2.36	1.02	57.8	57.5	1.60	1.31	0.06	1.01	0.05	0.26



Stellar Parameters For KIC 009579641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5779^{+104}_{-115}	$4.339^{+0.132}_{-0.108}$	$-0.060^{+0.150}_{-0.150}$	$1.087^{+0.157}_{-0.142}$	$0.941^{+0.074}_{-0.054}$	$1.033^{+0.572}_{-0.340}$
	+2%/-2%	+3%/-2%	+250%/-250%	+14%/-13%	+8%/-6%	+55%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 009579641-02 / KOI 0115.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 3	$1.74^{+0.27}_{-0.23}$	1388^{+64}_{-62}	3404^{+179}_{-177}	13^{+6}_{-4}
Alt.	-12 ± 3	$1.57^{+0.26}_{-0.23}$	1389^{+56}_{-60}	3447^{+202}_{-197}	14^{+6}_{-5}

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 $A_{obs} \gg 1.0$

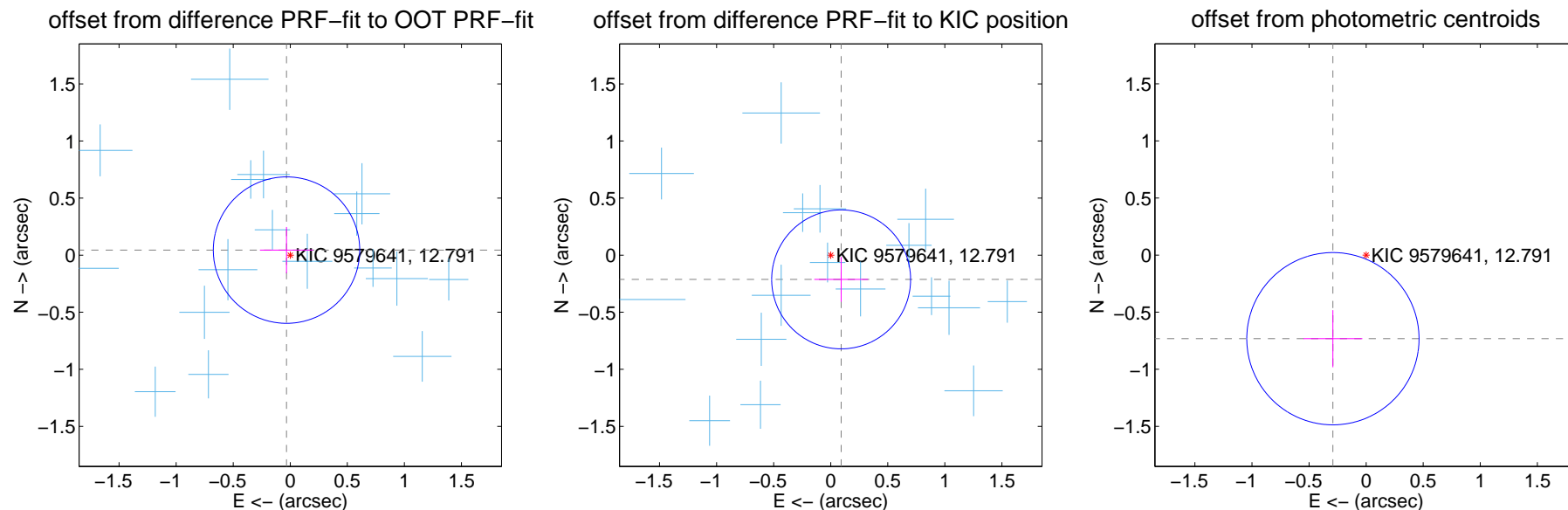
DV Centroid Data

Supplemental centroid analysis for 009579641-02. Kepler magnitude: 12.79. Transit SNR 43.81

There are 17 quarters with good PRF difference image offsets

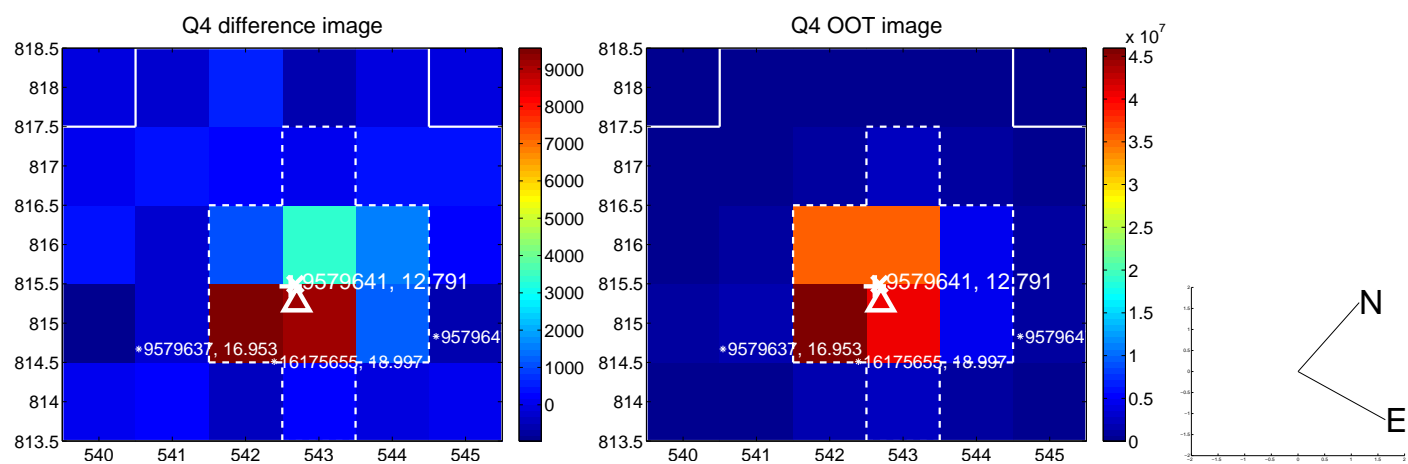
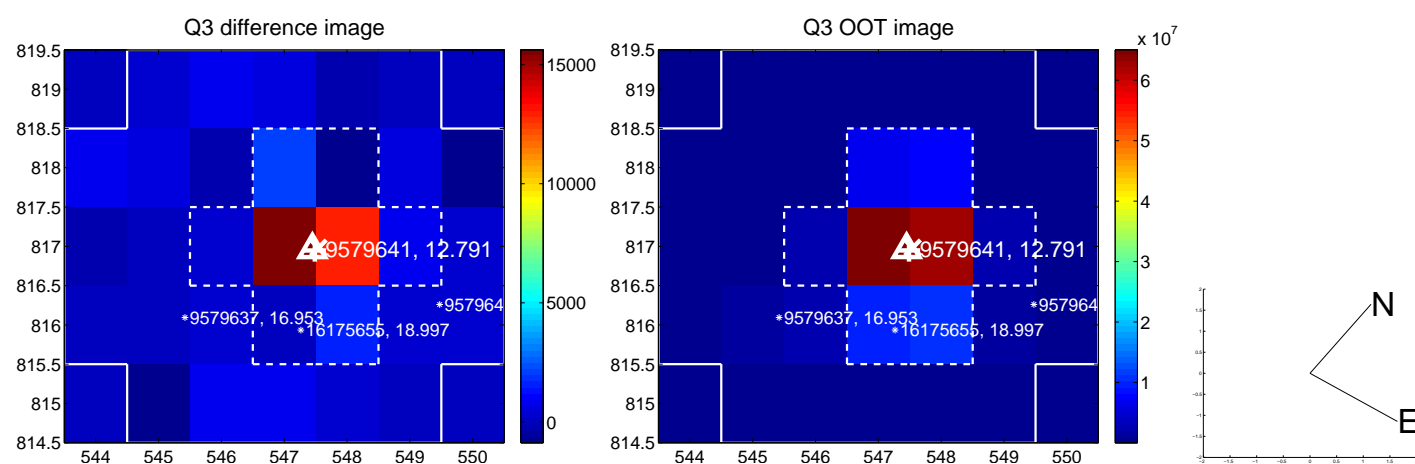
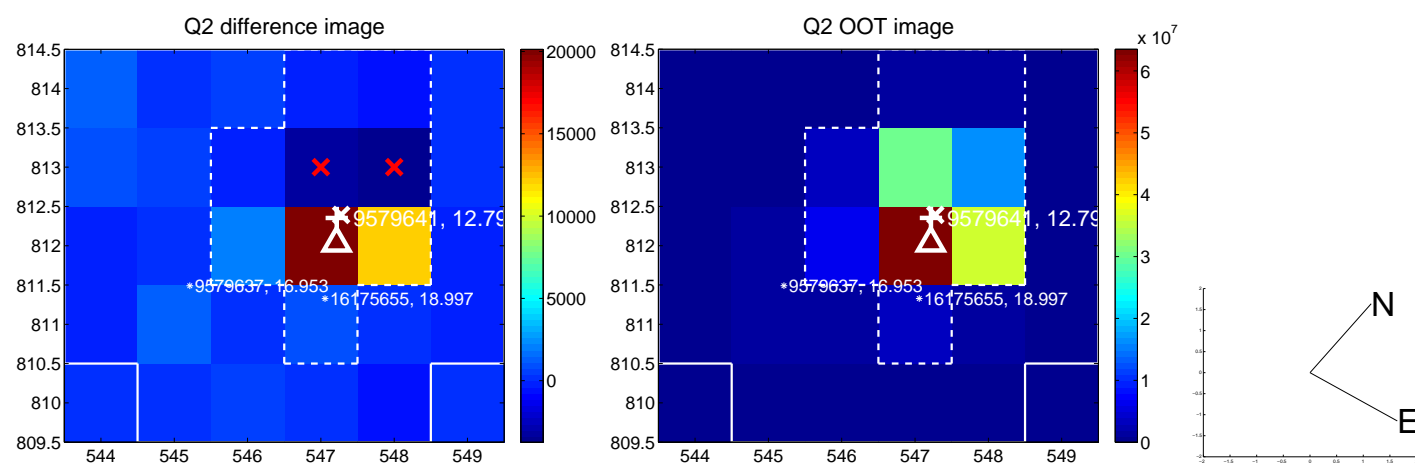
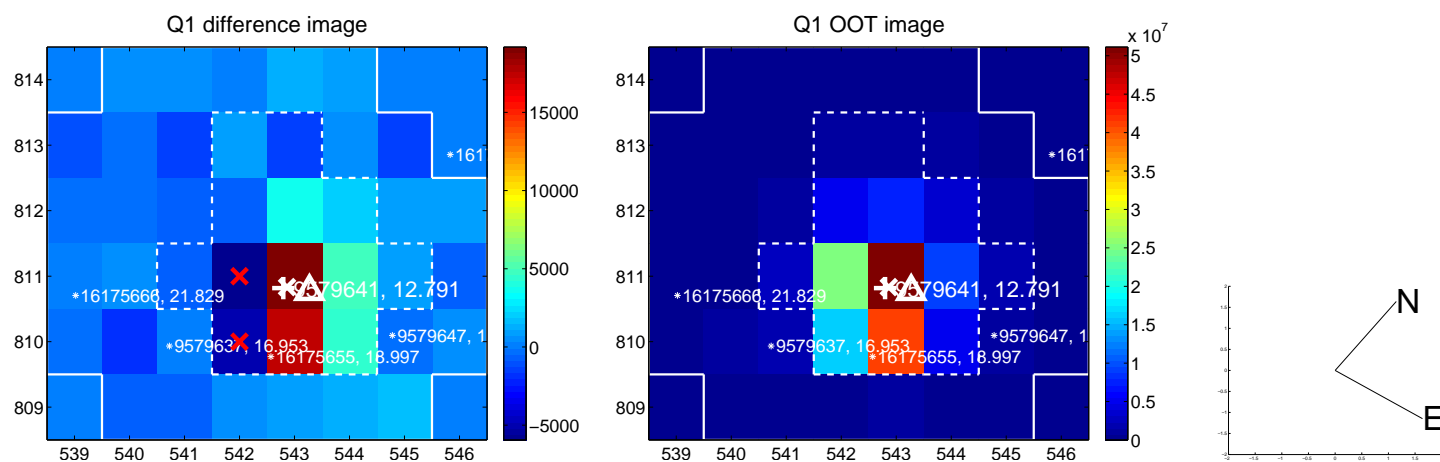
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.055 ± 0.214	0.26	0.033 ± 0.233	0.044 ± 0.202
PRF-fit source offset from KIC position	0.231 ± 0.203	1.14	-0.091 ± 0.235	-0.212 ± 0.196
photometric centroid source offset	0.79 ± 0.25	3.13	0.29 ± 0.26	-0.73 ± 0.25

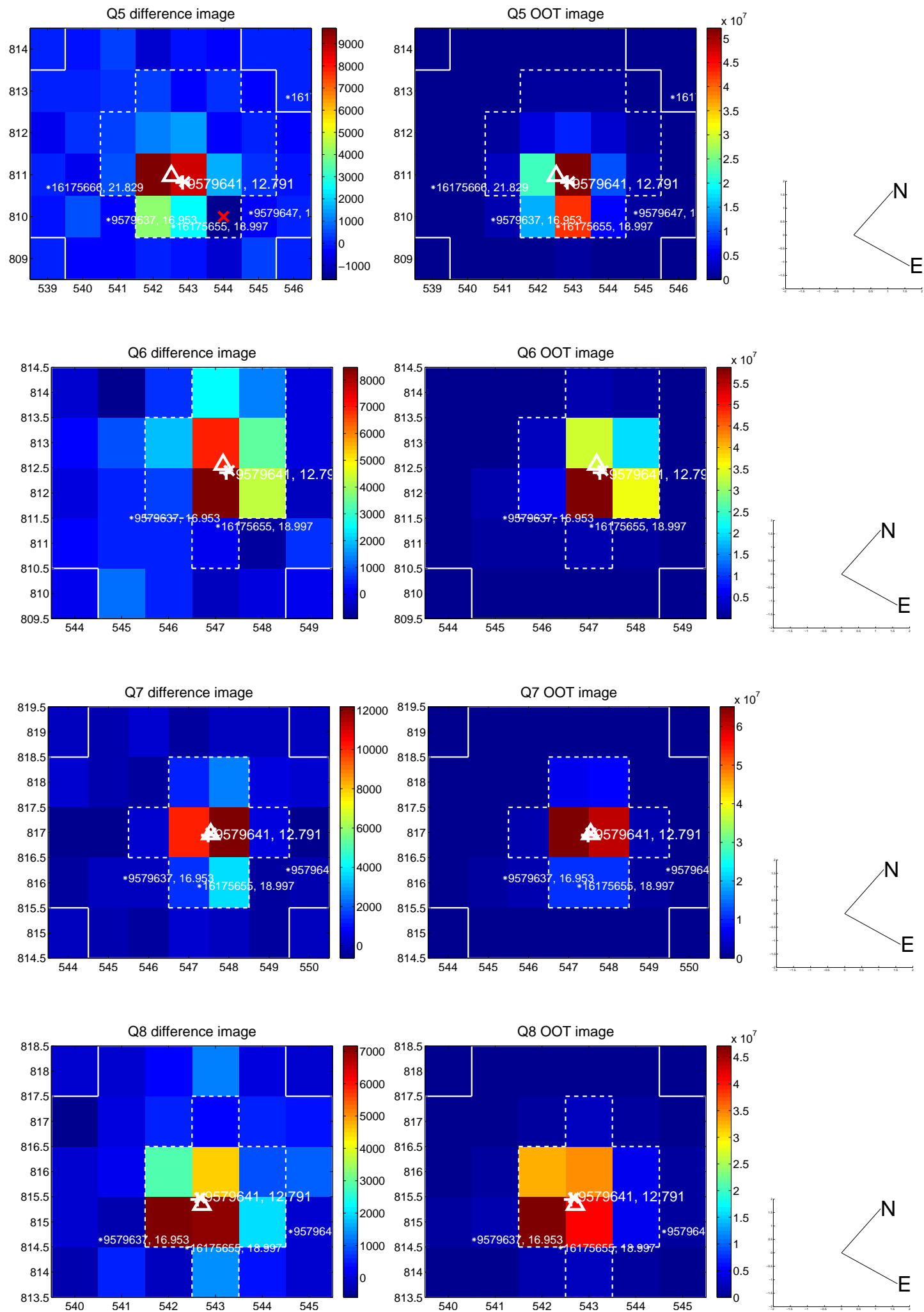


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

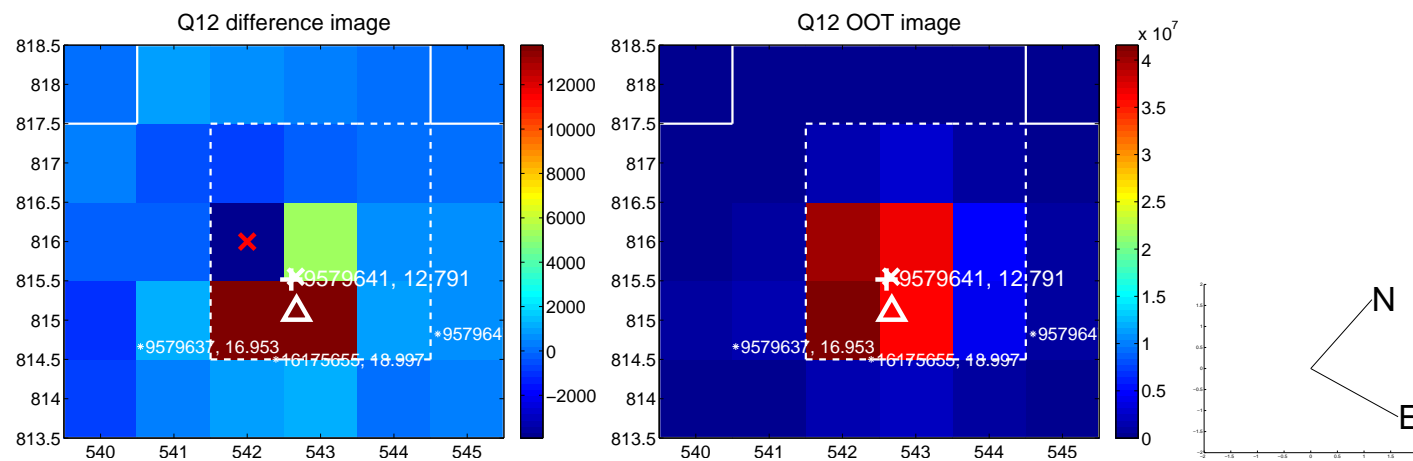
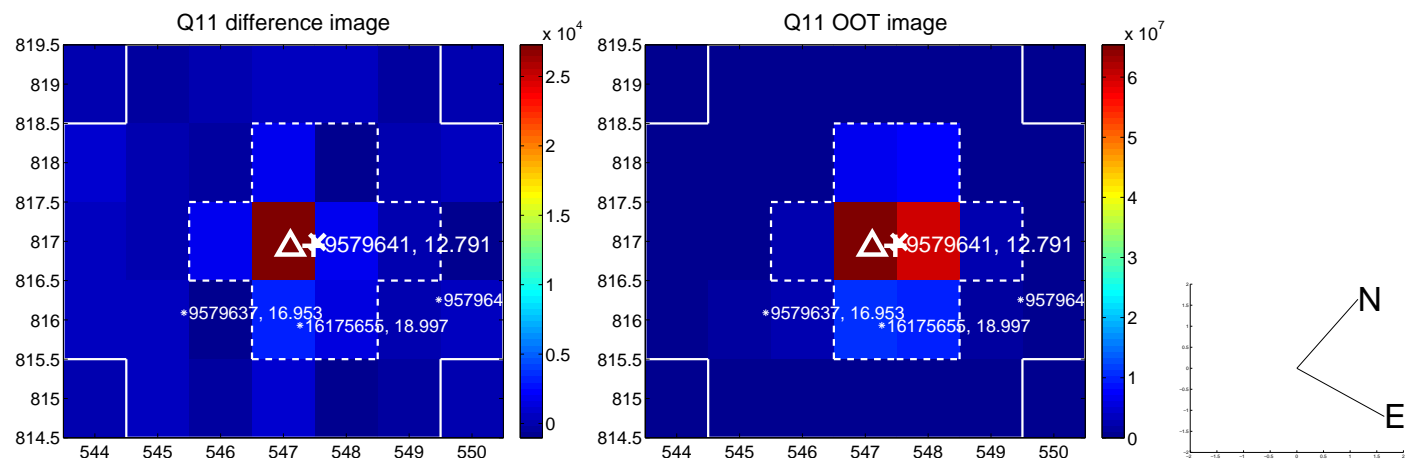
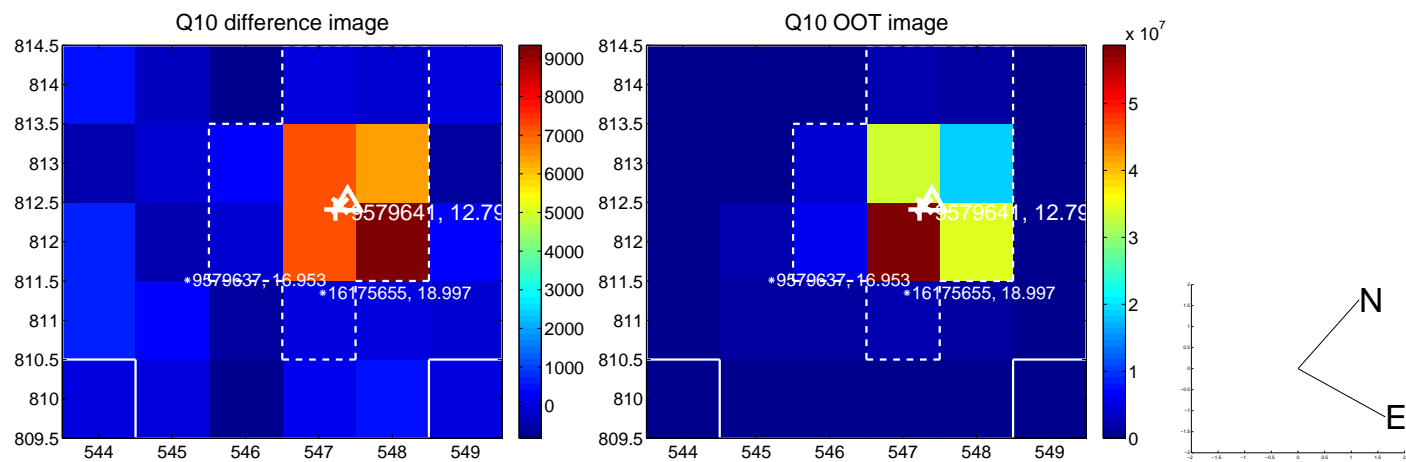
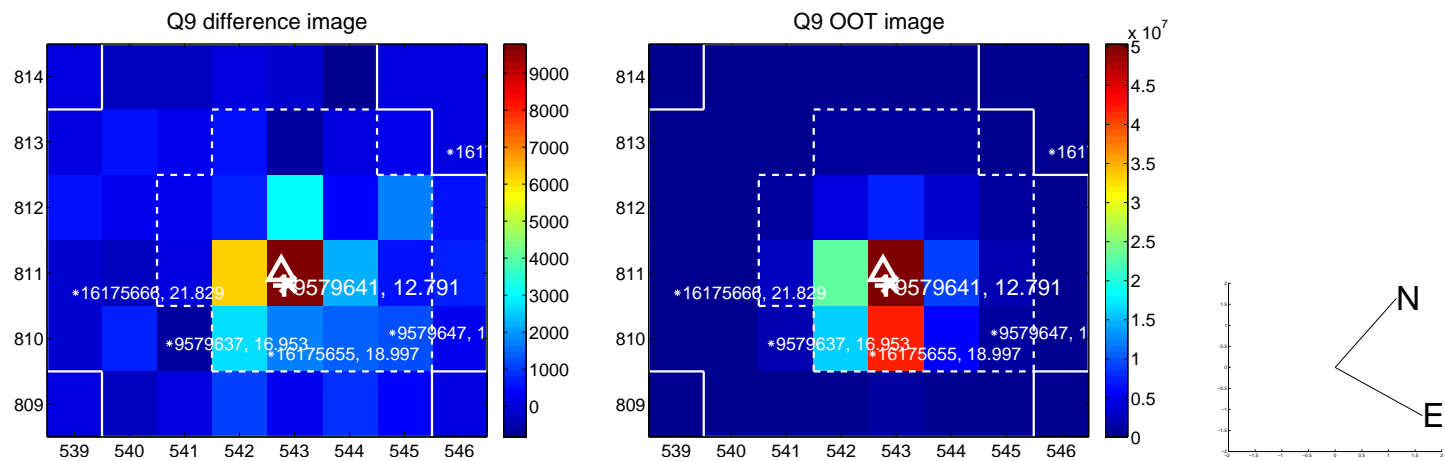
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



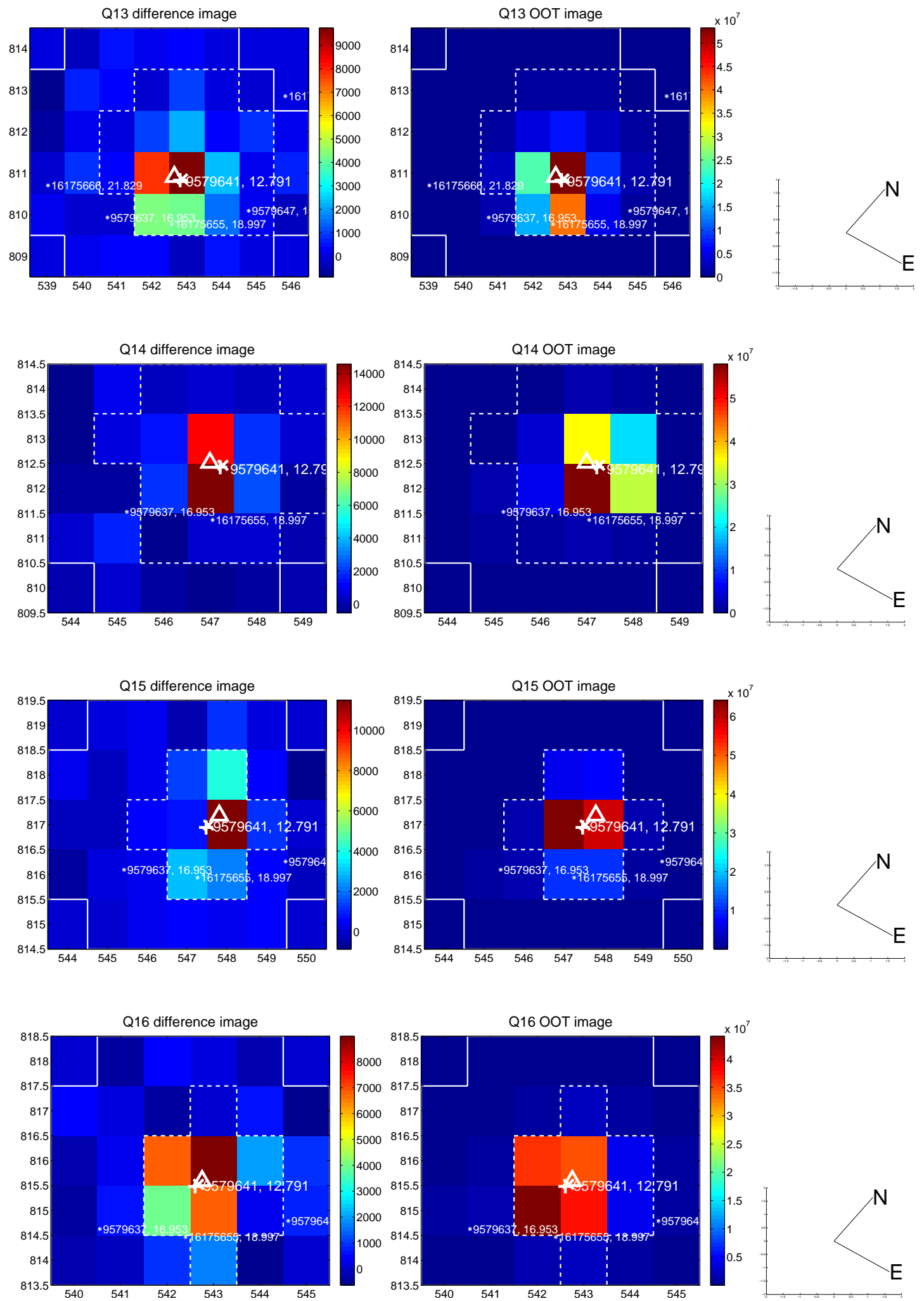
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



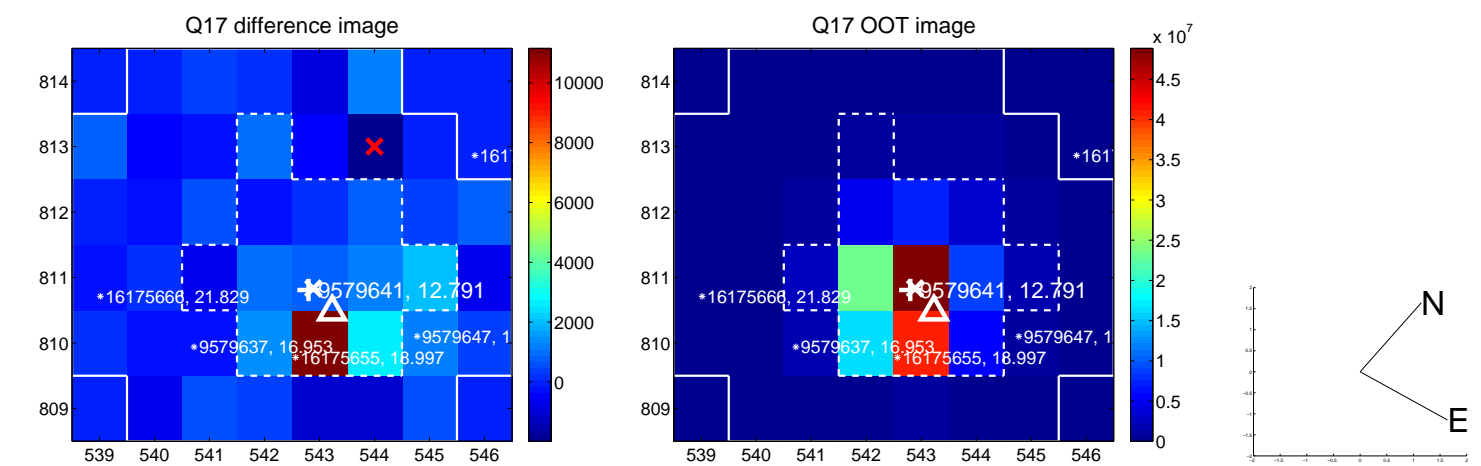
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



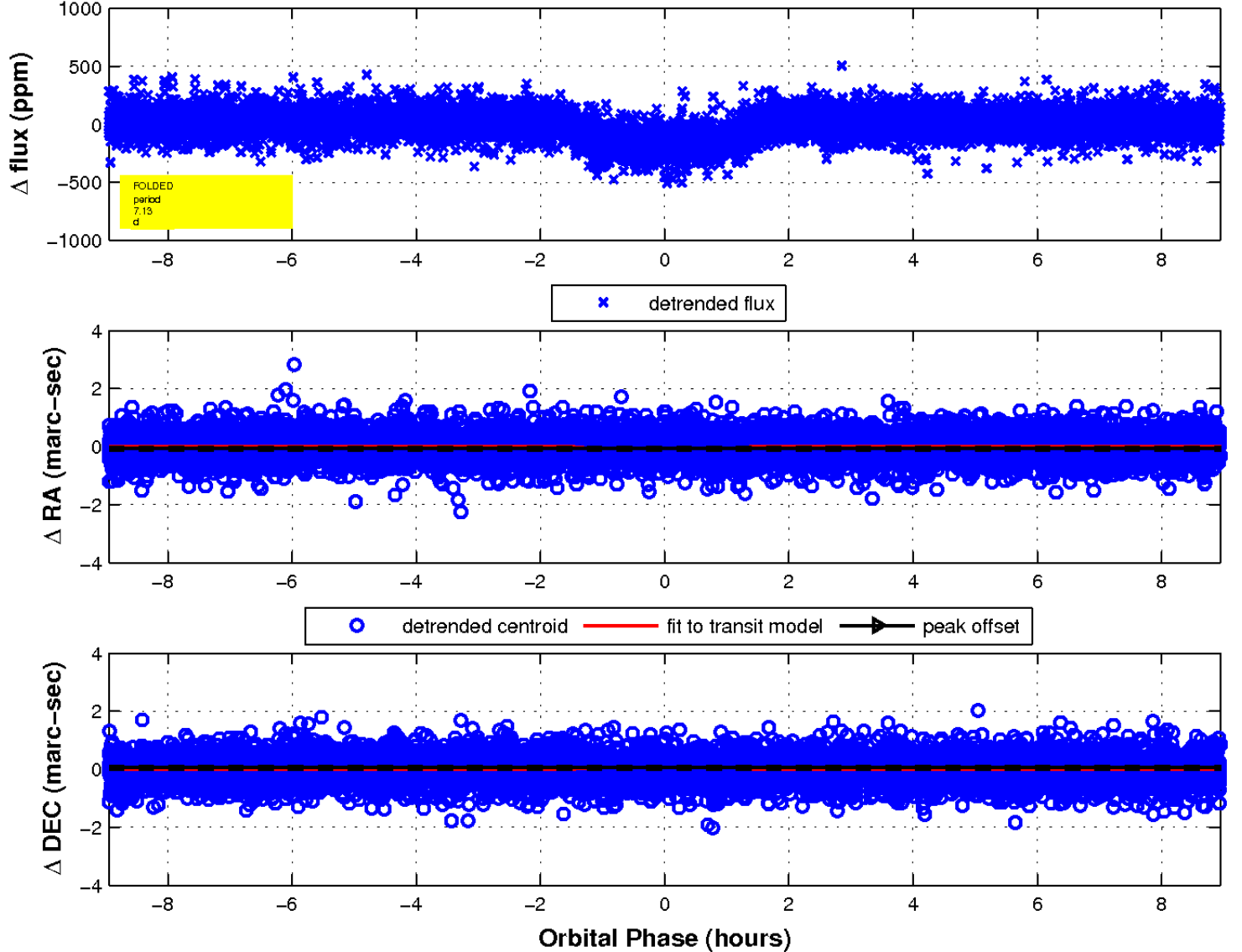
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

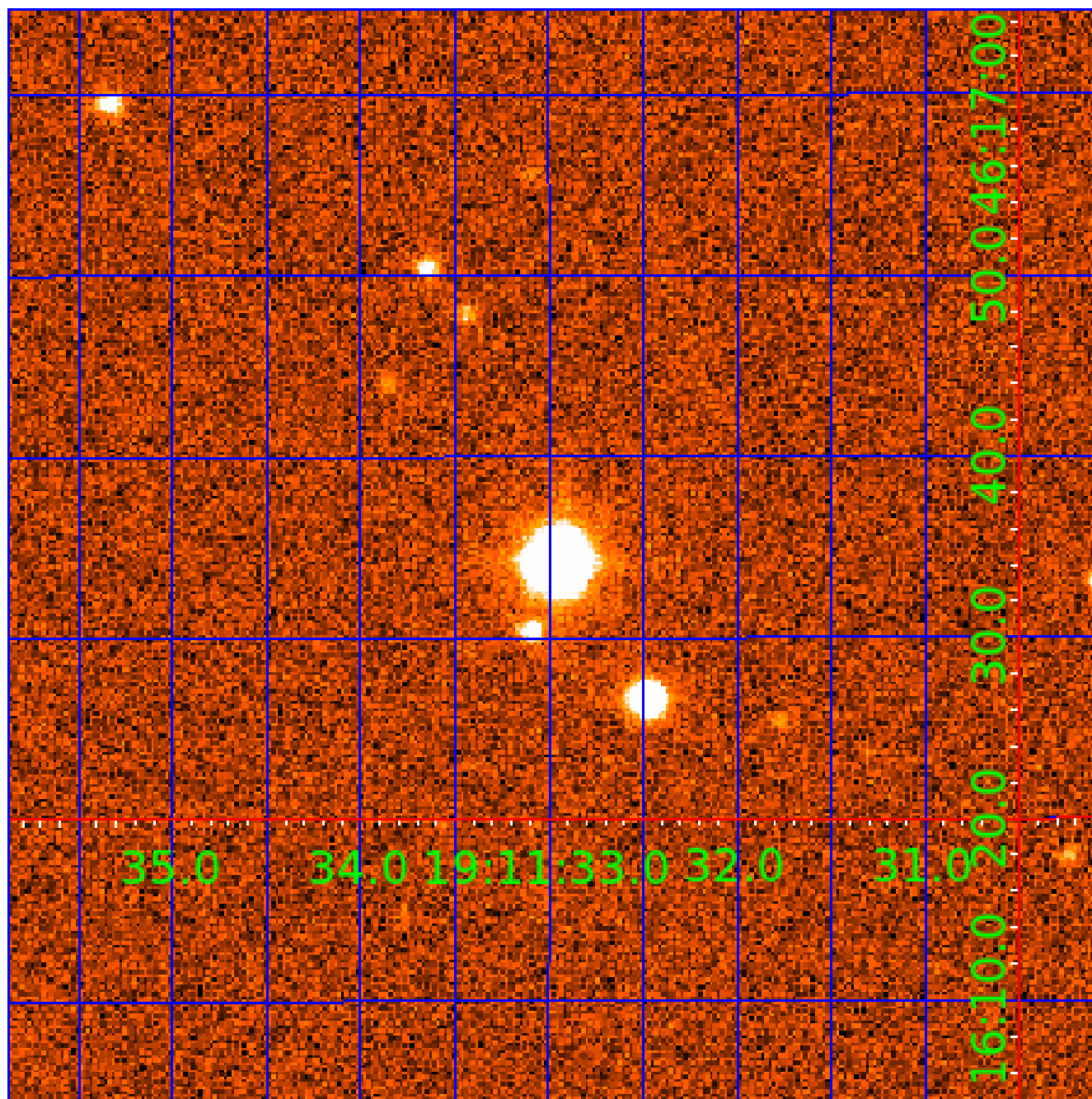


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009579641

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})
009579641-01	OBS	0115.01	5.412190	133.144829	600.4	3.082	163.5	160.3	1.09	5779	3.12	337.77
009579641-02	OBS	0115.02	7.125951	131.878846	184.9	2.986	39.8	43.8	1.09	5779	1.75	234.06
009579641-03	OBS	0115.03	3.435914	132.662216	24.6	3.320	7.4	8.7	1.09	5779	0.64	619.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009579641-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009579641-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009579641-03	OBS	PC	0.87	0	0	0	0	NO_COMMENT

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

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

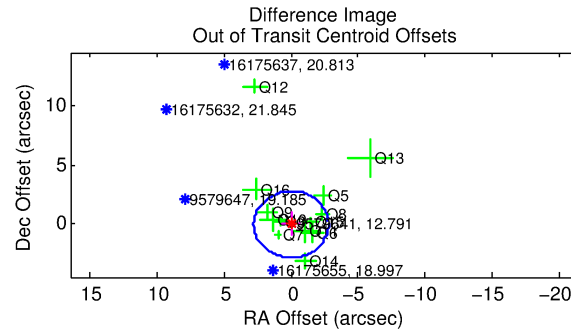
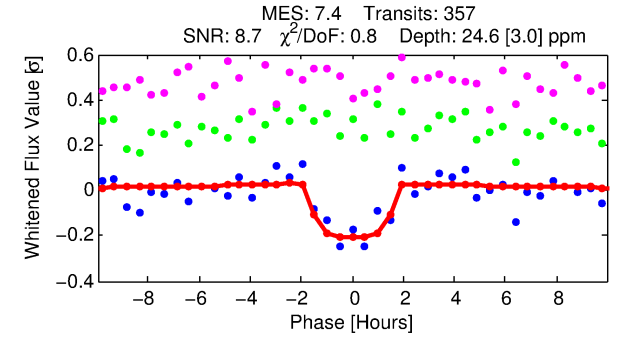
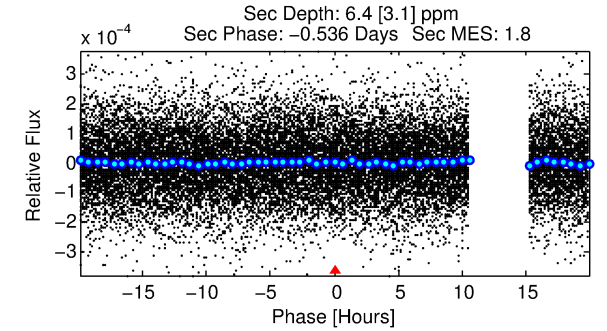
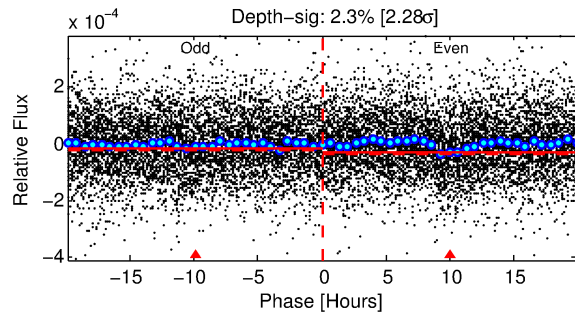
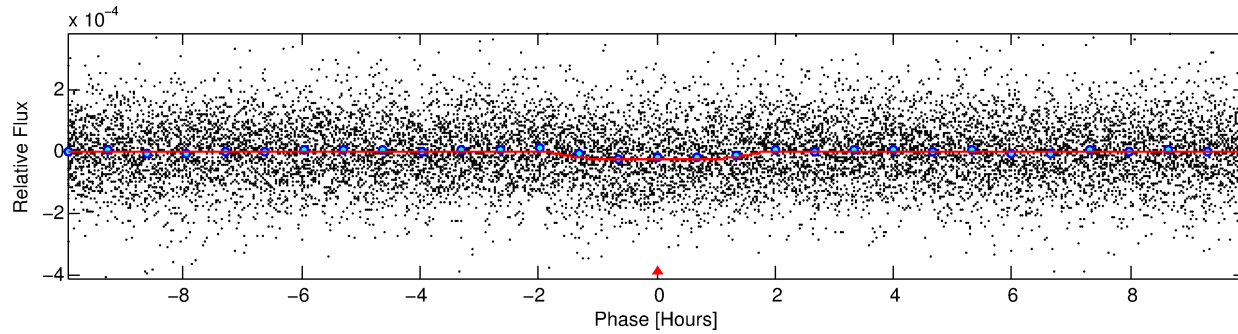
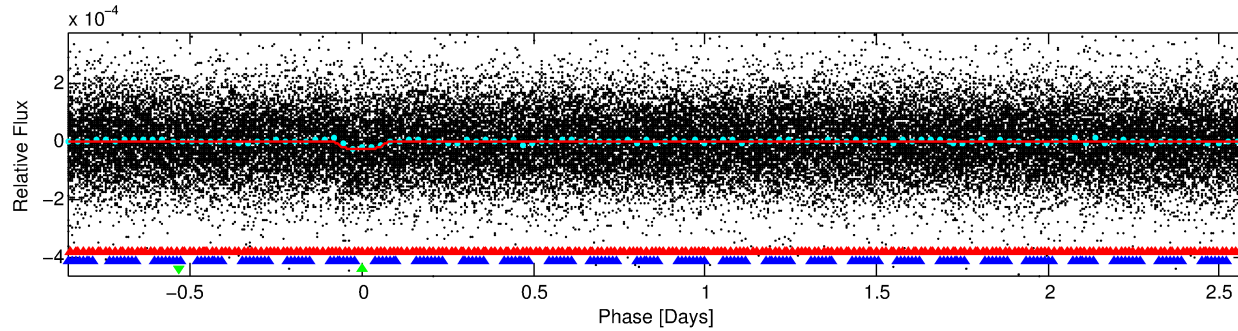
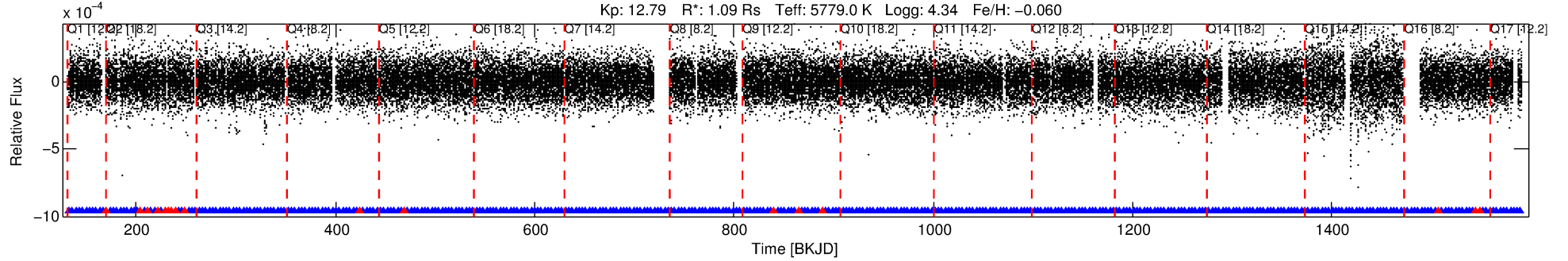
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009579641-03

No Significant Match Found

DV One-Page Summary

KIC: 9579641 Candidate: 3 of 3 Period: 3.436 d
KOI: K00115.03 Corr: 0.938



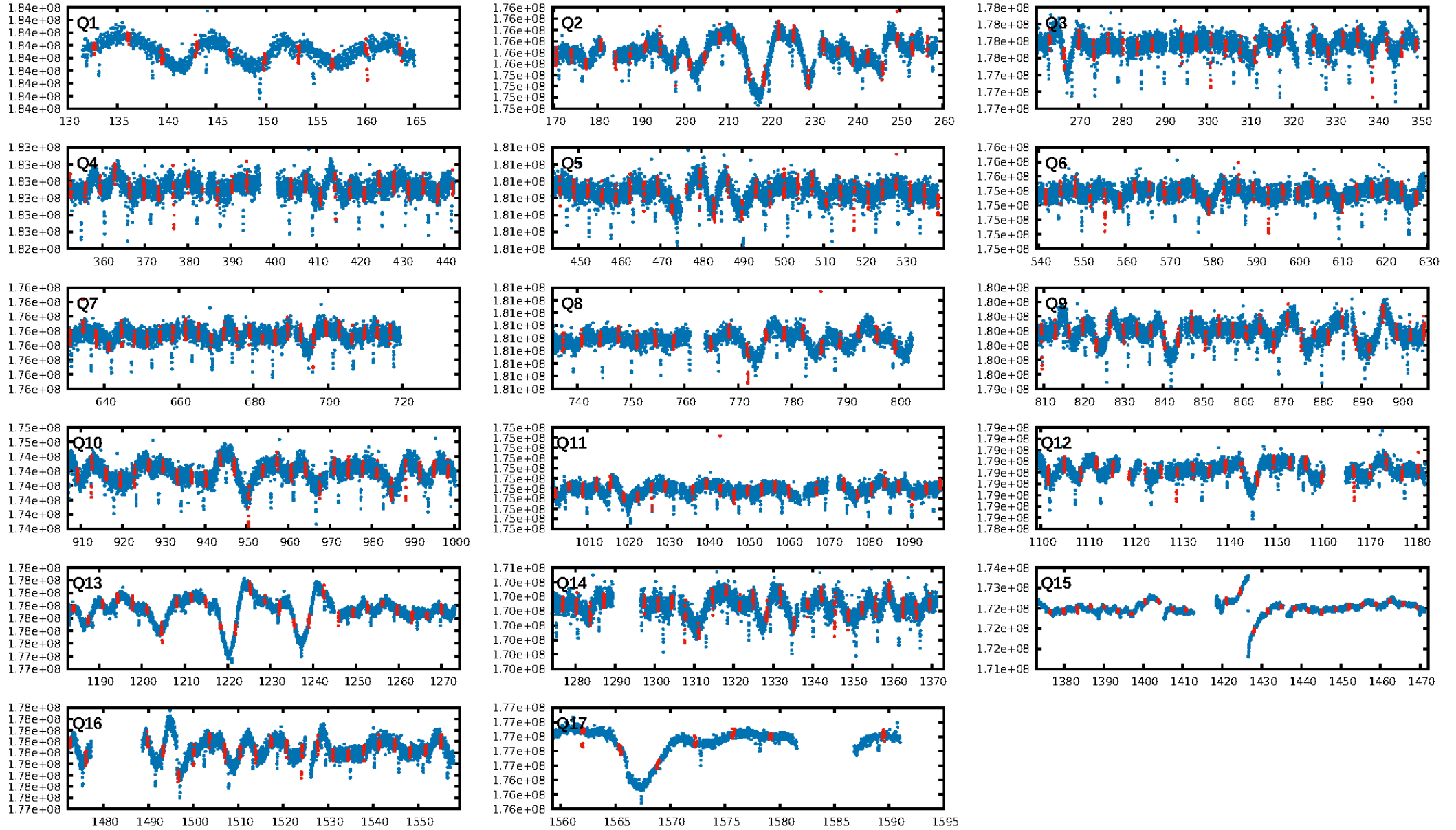
DV Fit Results:

Period = 3.43591 [0.00003] d
Epoch = 132.6622 [0.0052] BKJD
Rp/R* = 0.0054 [0.0020]
a/R* = 3.72 [6.14]
b = 0.90 [0.40]
Seff = 619.06 [147.37]
Teq = 1272 [76] K
Rp = 0.64 [0.25] Re
a = 0.0437 [0.0061] AU
Ag = 16.42 [14.88] [1.04 σ]
Teffp = 3959 [873] K [3.07 σ]

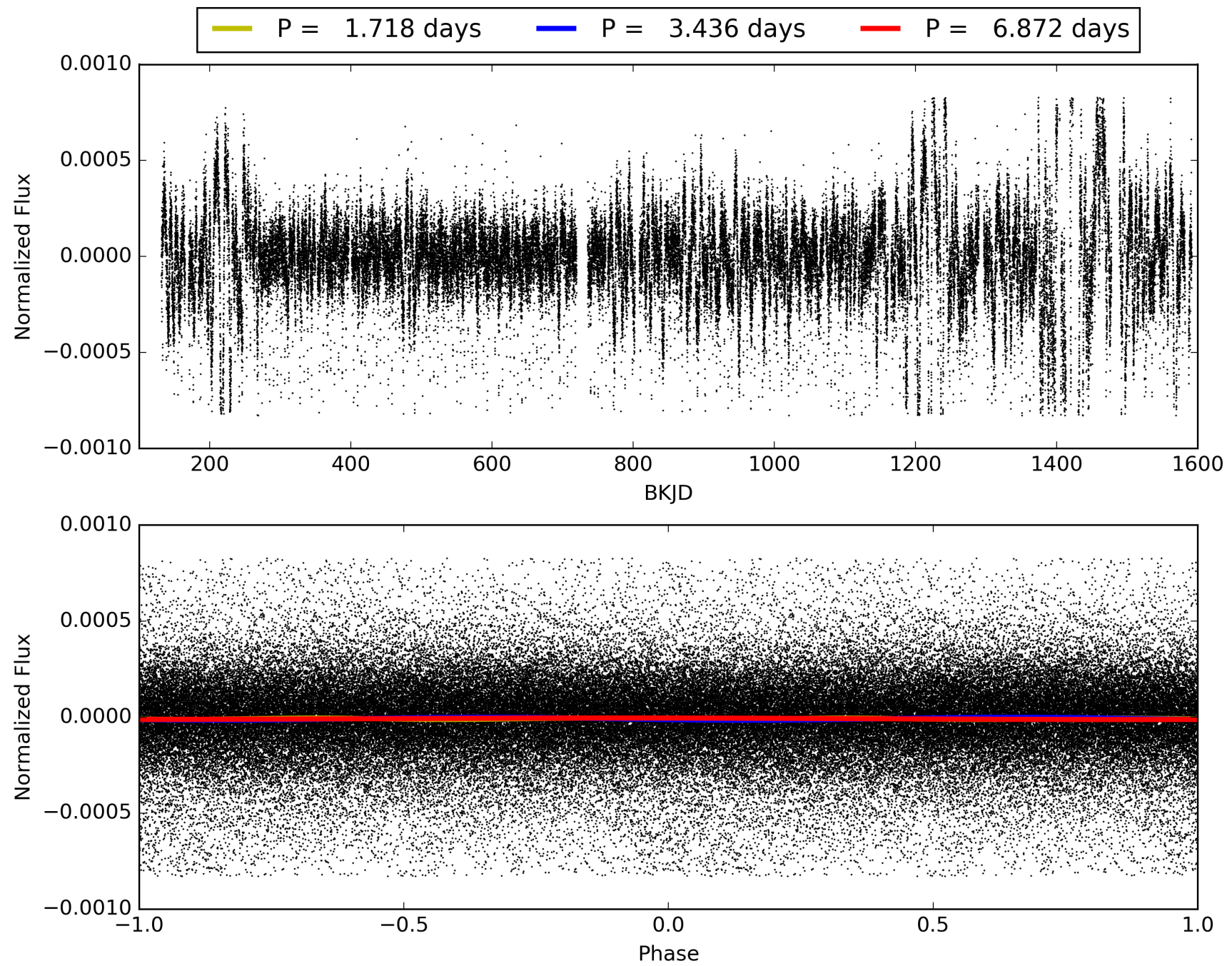
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.47 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.91e-14
RollingBand-fgt: 0.95 [326/343]
GhostDiagnostic-chr: 1.502
Centroid-sig: 85.8%
Centroid-so: 0.645 arcsec [0.52 σ]
OotOffset-rm: 0.047 arcsec [0.05 σ]
KicOffset-rm: 0.341 arcsec [0.34 σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009579641-03, PDC Light Curves

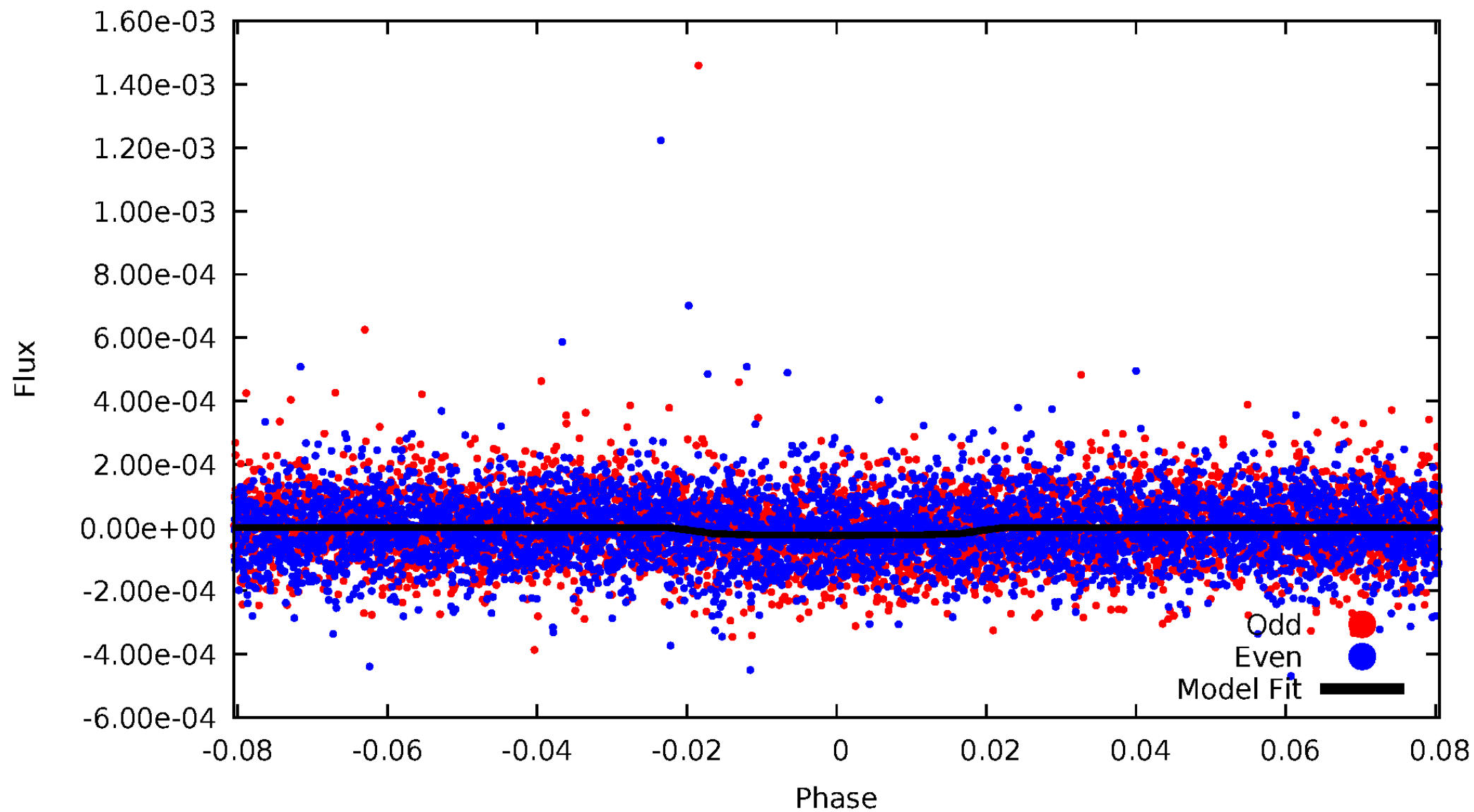


TCE 009579641-03



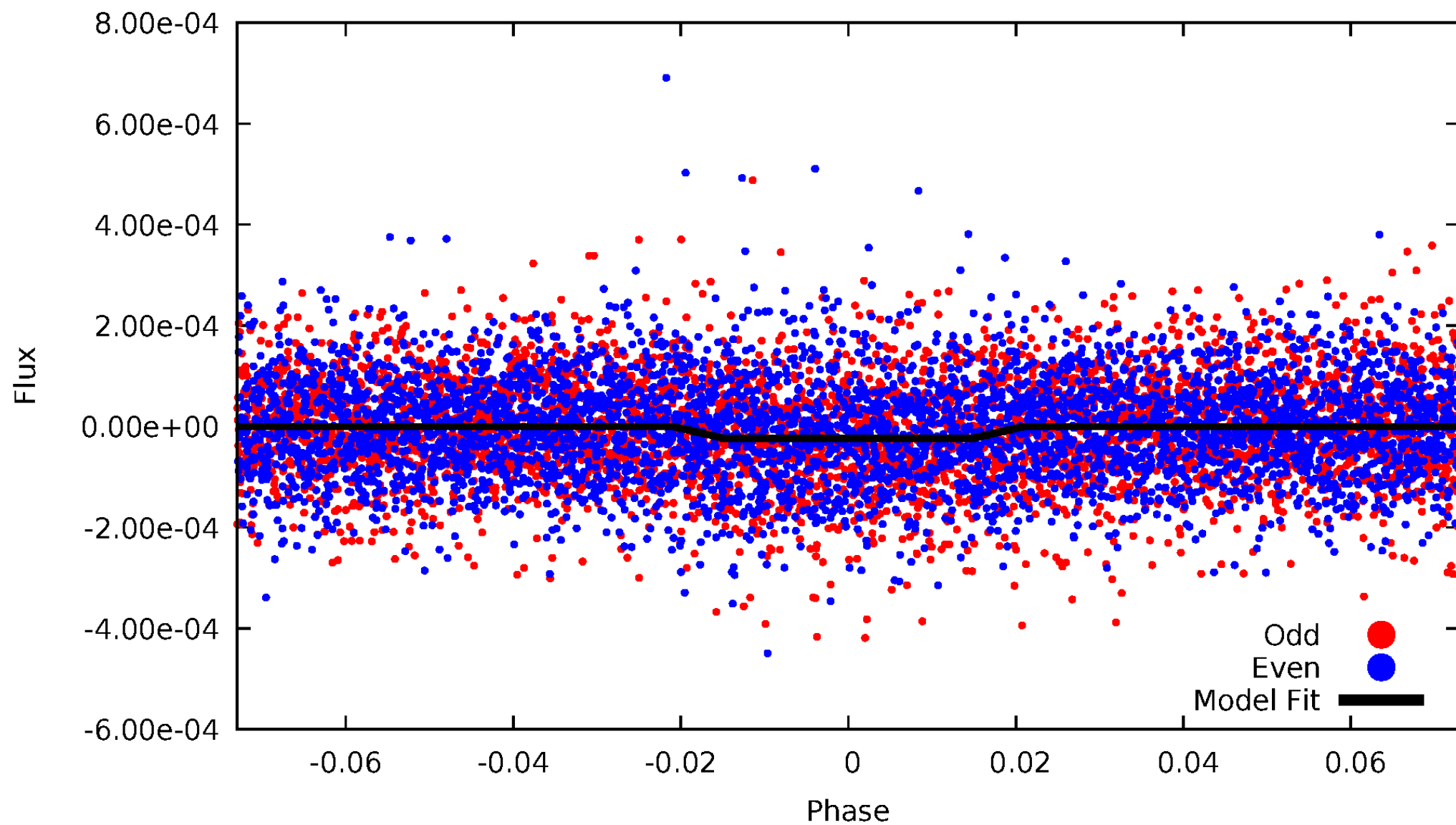
DV Odd/Even

TCE 009579641-03



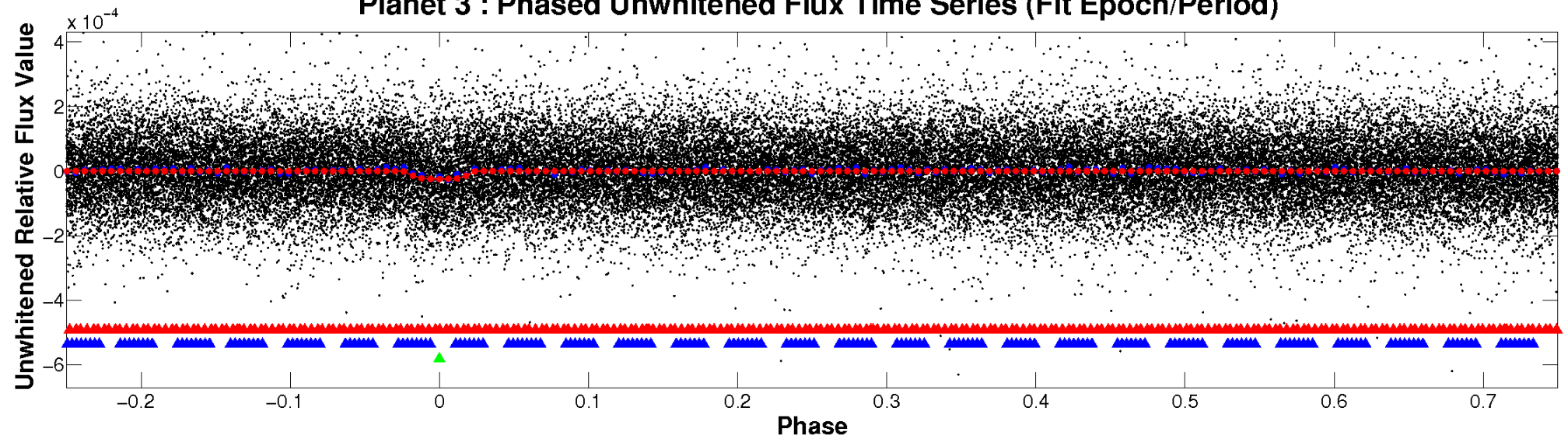
ALT Odd/Even

TCE 009579641-03

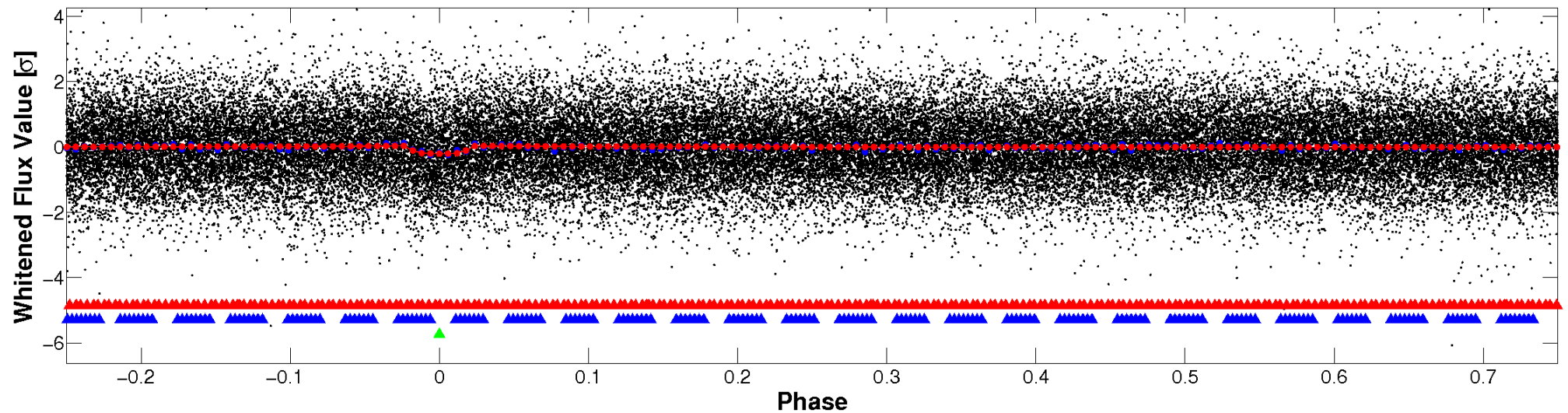


Non-Whitened Vs. Whitened Light Curve

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

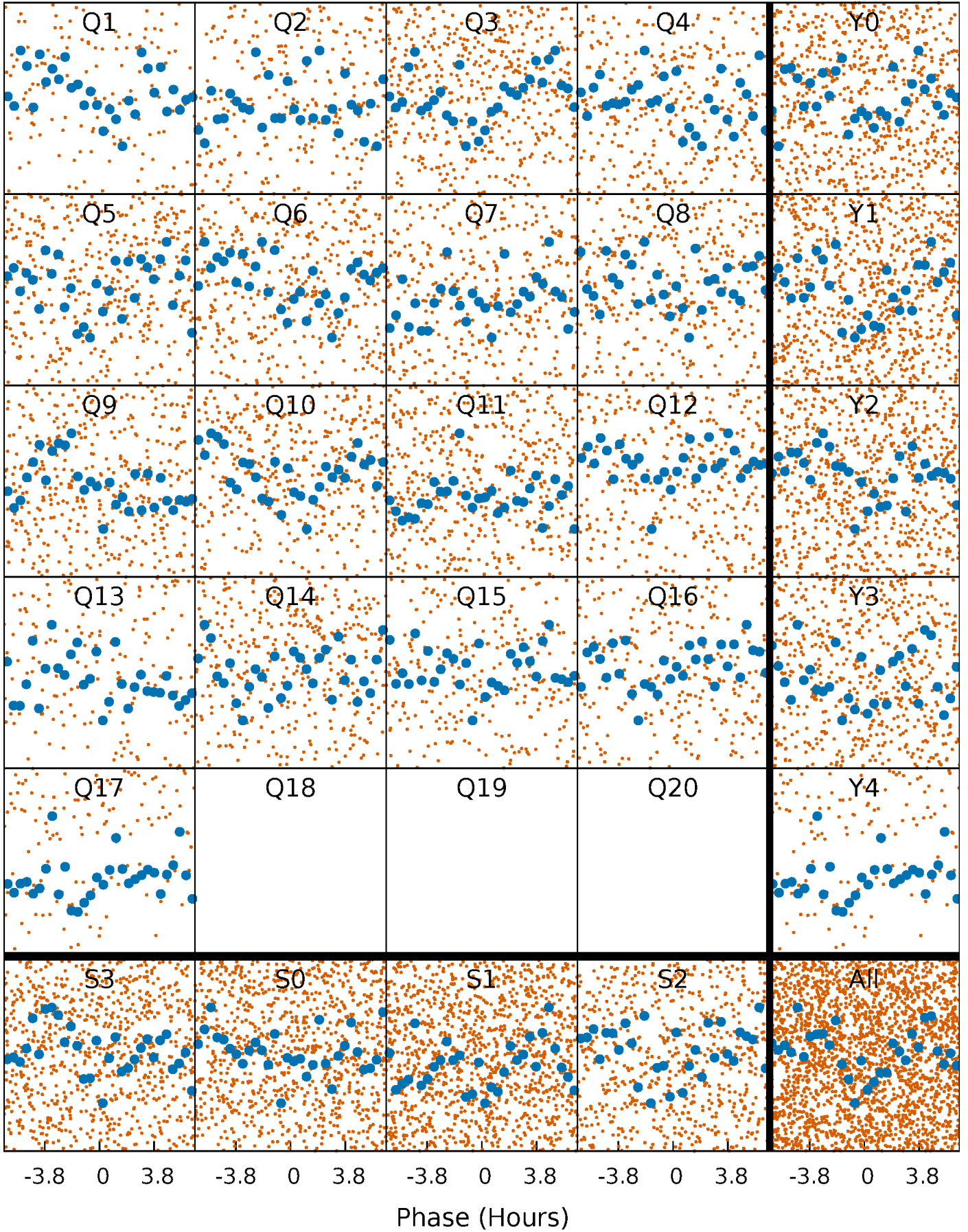


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



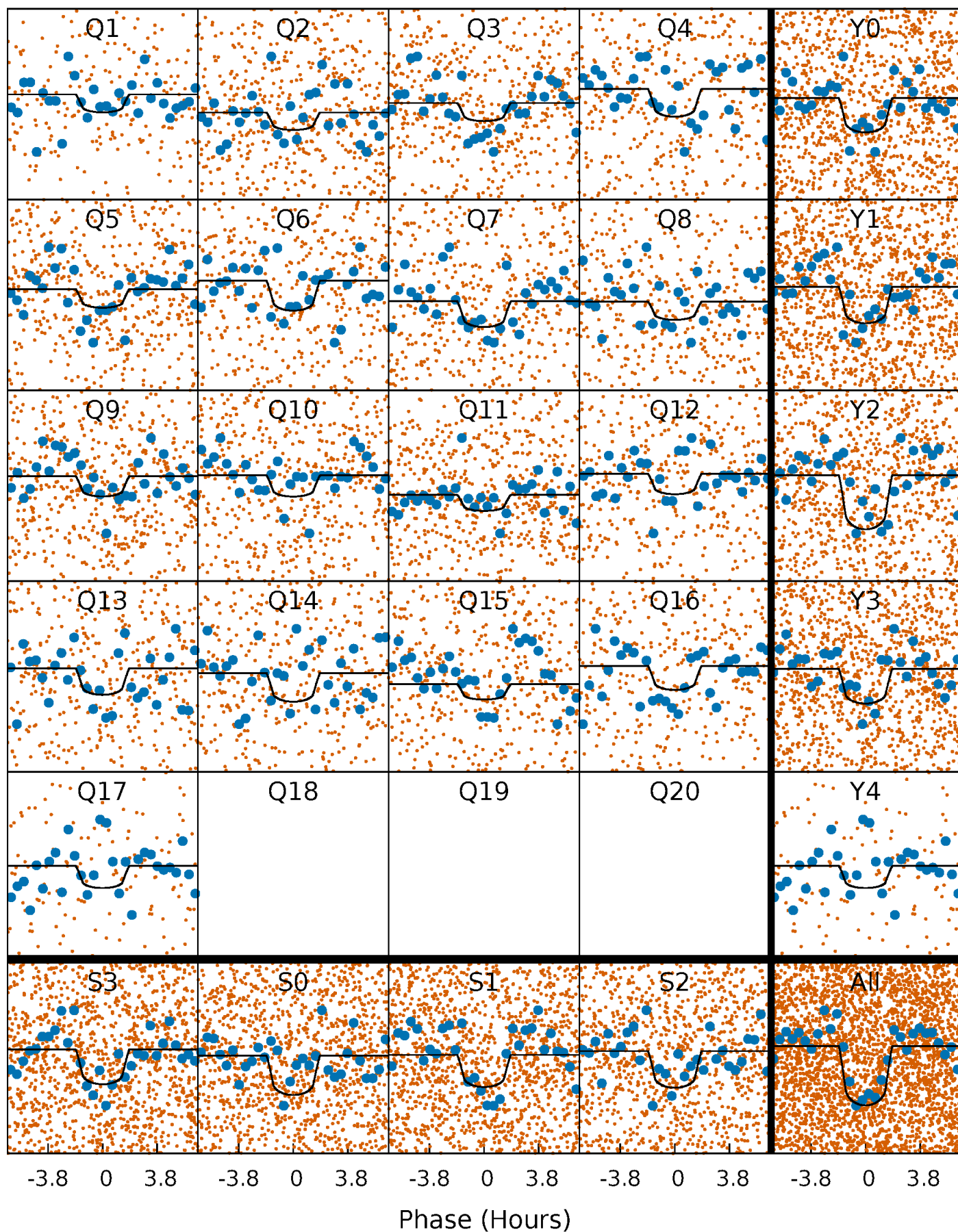
PDC Quarter-Phased Transit Curves

TCE 009579641-03 P= 3.435914 Days $T_0=132.662216$ (BKJD)



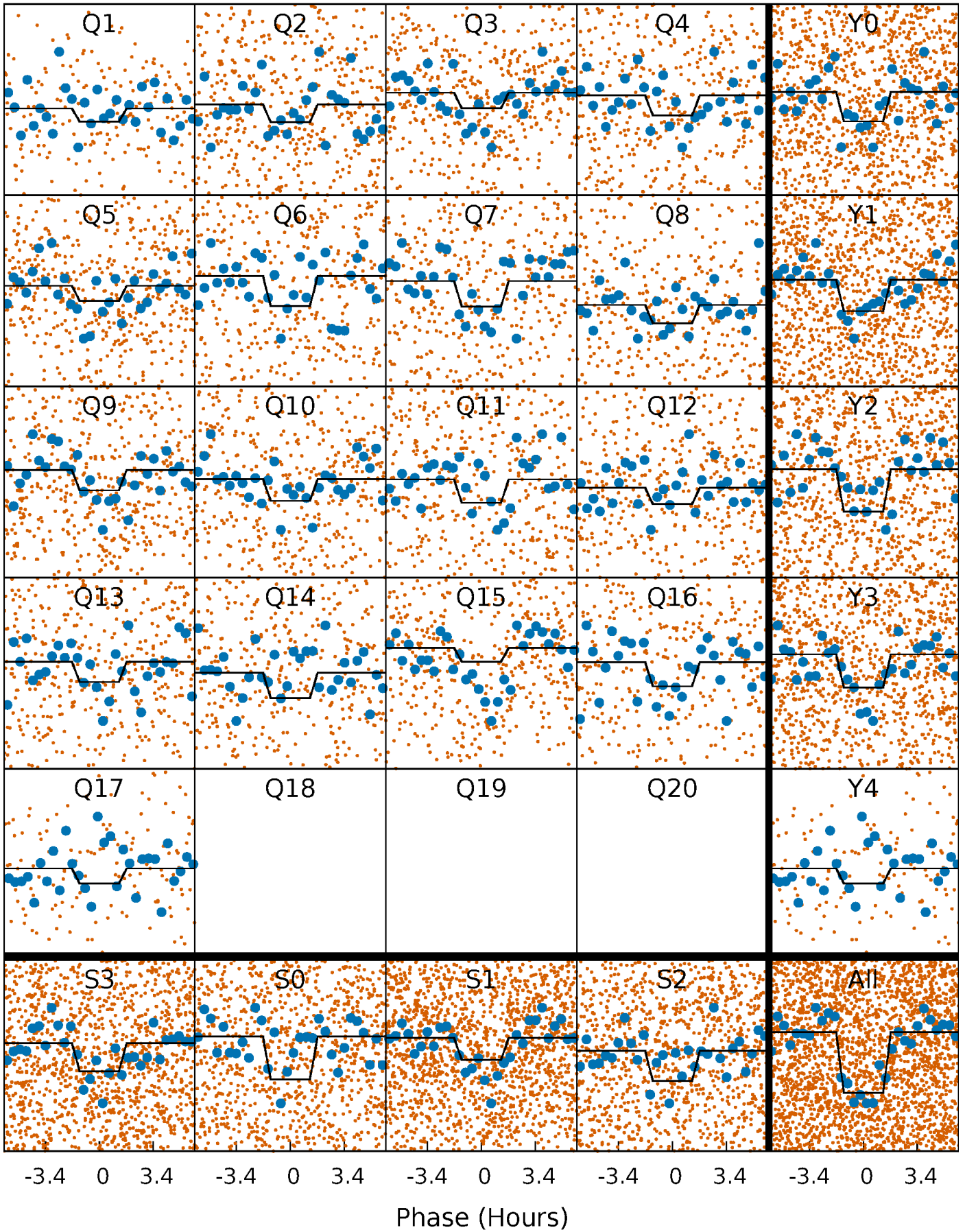
DV Quarter-Phased Transit Curves

TCE 009579641-03 $P = 3.435914$ Days $T_0 = 132.662216$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

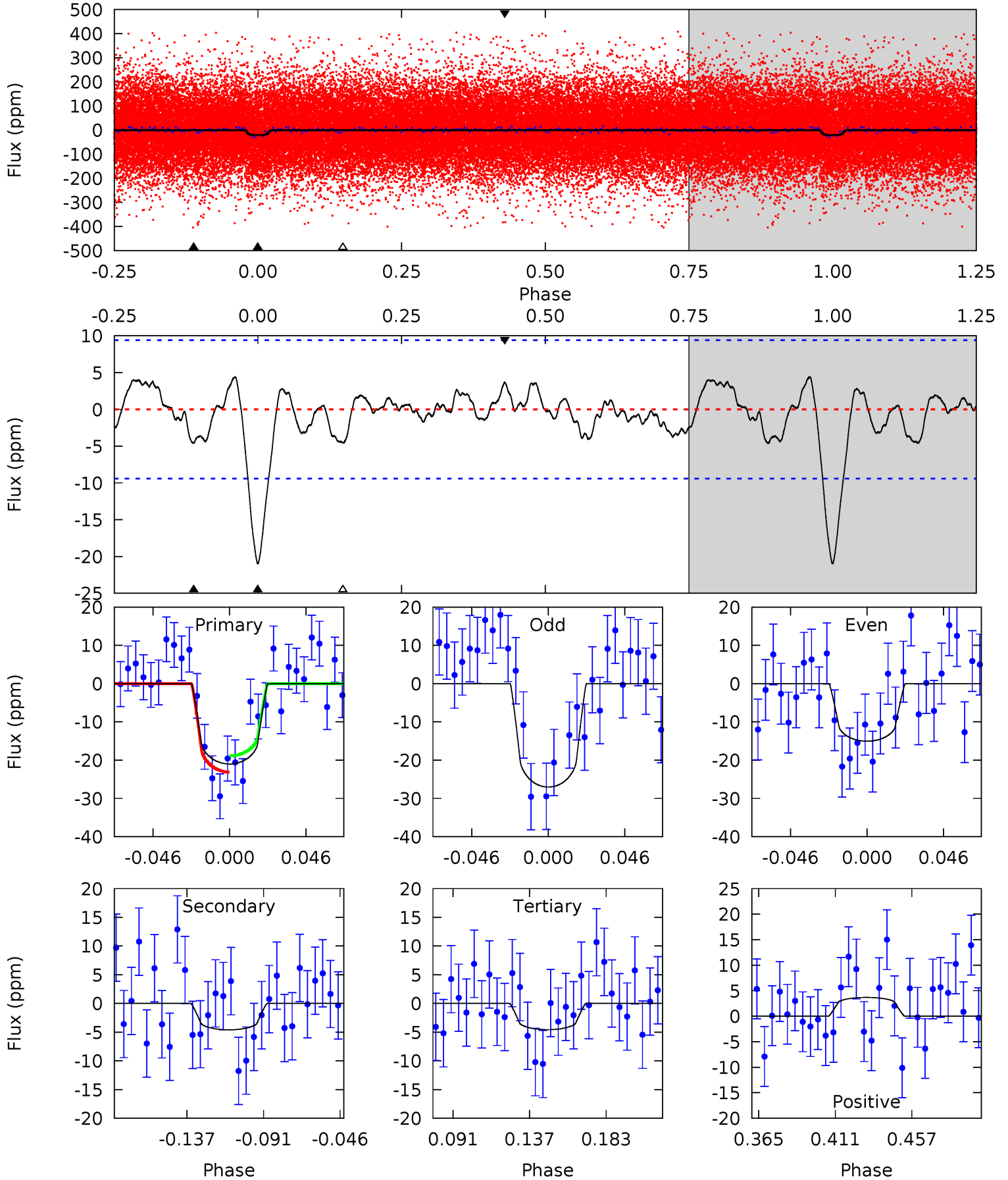
TCE 009579641-03 $P = 3.435868$ Days $T_0 = 132.670598$ (BKJD)



DV Model-Shift Uniqueness Test

009579641-03, P = 3.435914 Days, E = 129.226302 Days

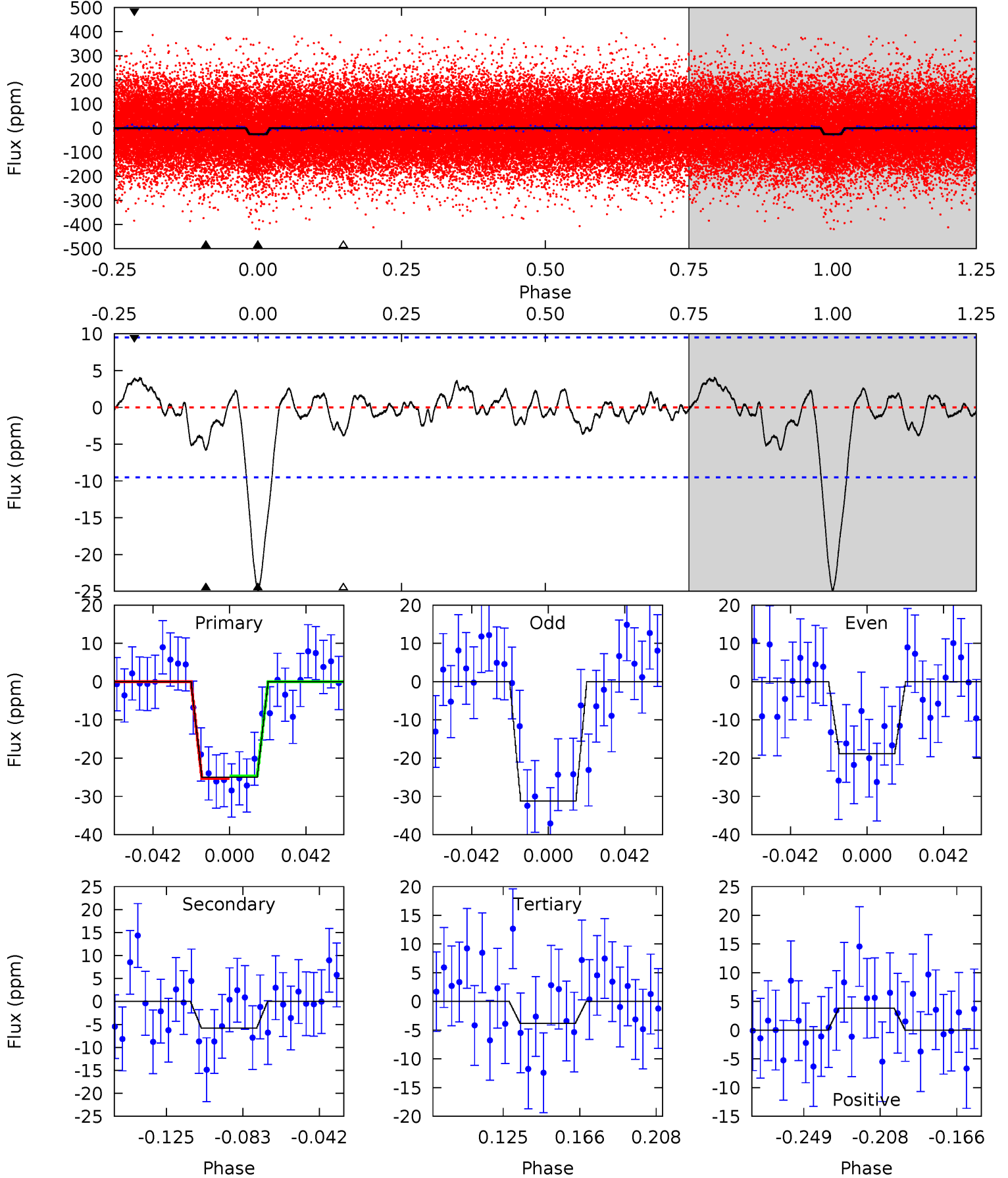
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	2.31	2.30	1.85	4.73	2.00	1.01	8.26	8.71	0.01	0.46	3.03	0.82	0.17	1.07



Alt Model-Shift Uniqueness Test

009579641-03, P = 3.435868 Days, E = 129.234730 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	2.90	1.90	1.91	4.75	2.04	0.80	10.6	10.5	1.00	0.99	3.09	0.92	0.14	0.17



Stellar Parameters For KIC 009579641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5779^{+104}_{-115}	$4.339^{+0.132}_{-0.108}$	$-0.060^{+0.150}_{-0.150}$	$1.087^{+0.157}_{-0.142}$	$0.941^{+0.074}_{-0.054}$	$1.033^{+0.572}_{-0.340}$
	+2%/-2%	+3%/-2%	+250%/-250%	+14%/-13%	+8%/-6%	+55%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 009579641-03 / KOI 0115.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-5 ± 2	$0.63^{+0.25}_{-0.23}$	1769^{+84}_{-76}	3897^{+769}_{-536}	11^{+17}_{-7}
Alt.	-6 ± 2	$0.59^{+0.21}_{-0.23}$	1773^{+74}_{-81}	4241^{+1010}_{-526}	18^{+33}_{-9}

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

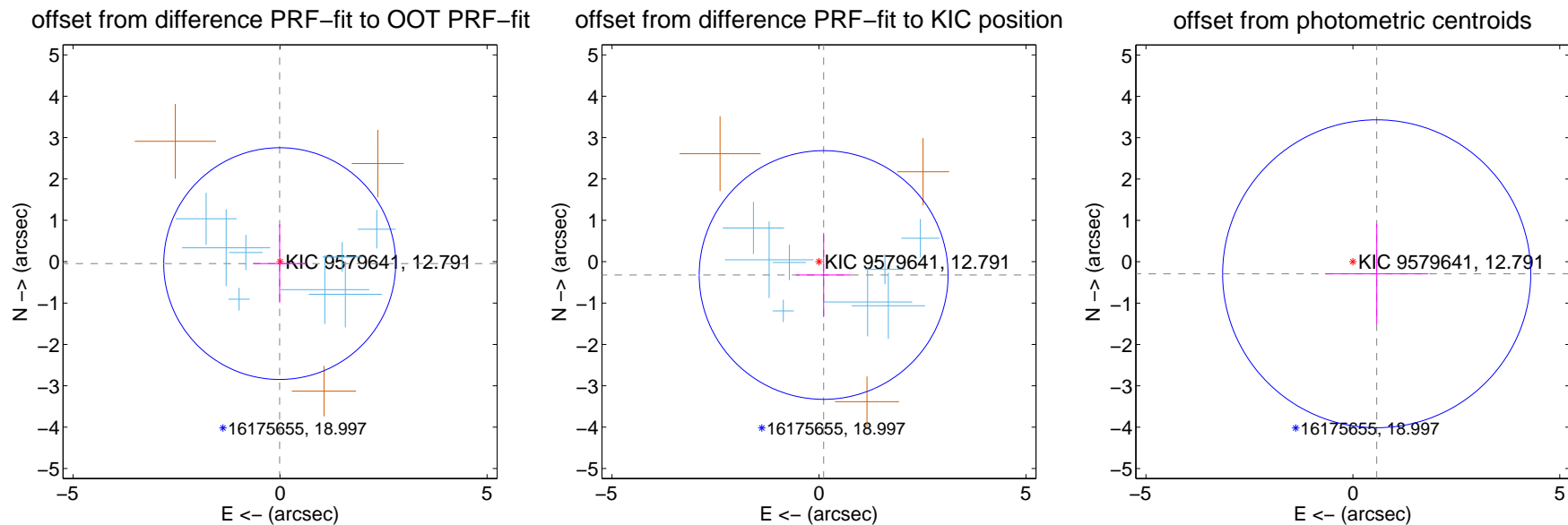
DV Centroid Data

Supplemental centroid analysis for 009579641-03. Kepler magnitude: 12.79. Transit SNR 8.75

There are 8 quarters with good PRF difference image offsets

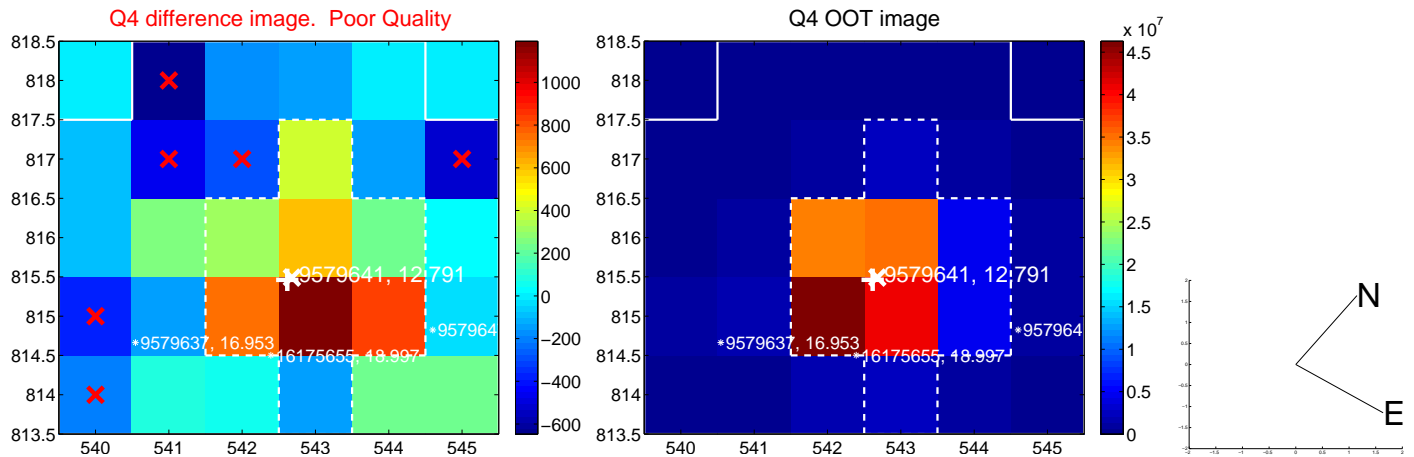
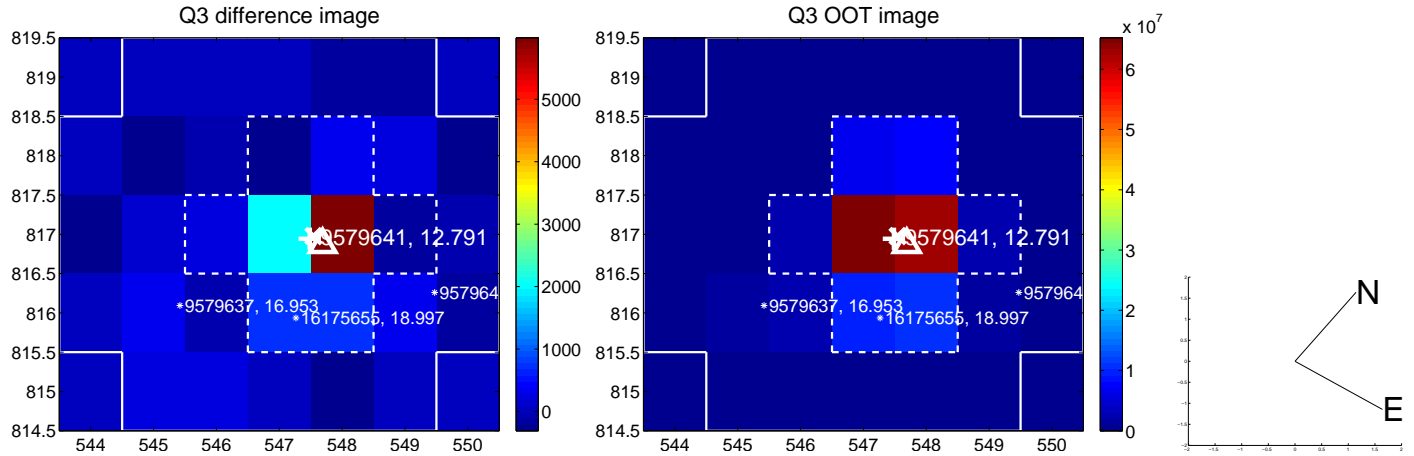
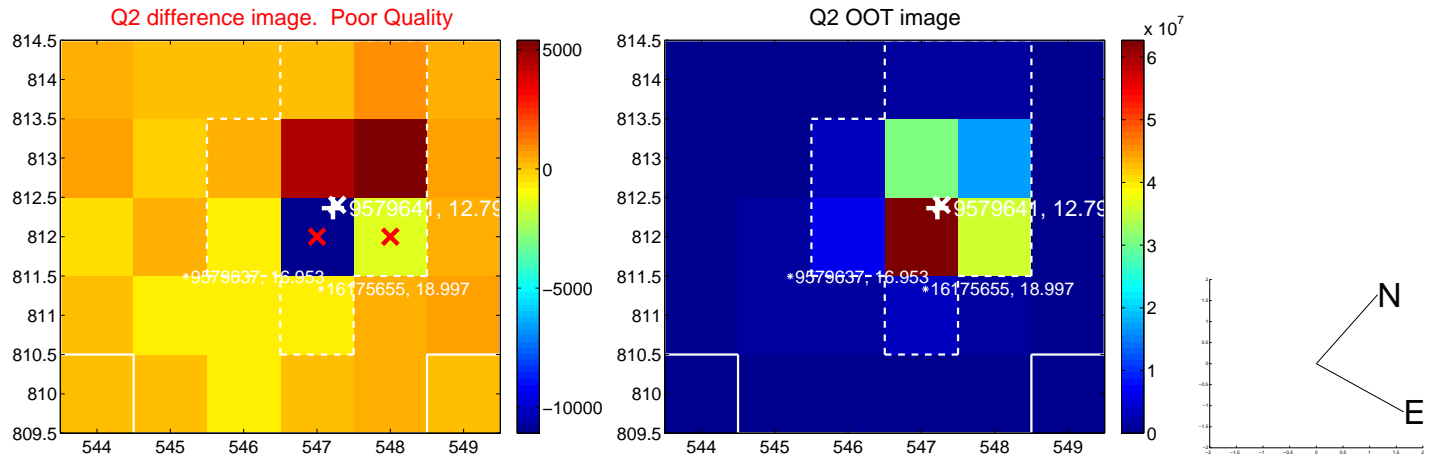
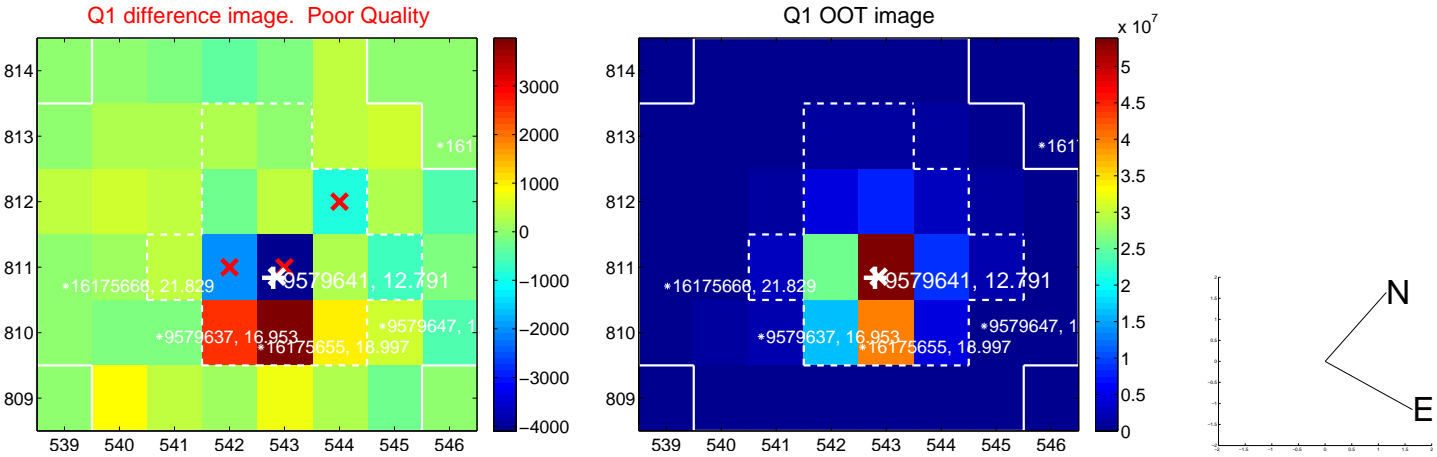
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.047 ± 0.934	0.05	0.010 ± 0.640	-0.046 ± 0.953
PRF-fit source offset from KIC position	0.341 ± 1.002	0.34	-0.113 ± 0.664	-0.321 ± 1.018
photometric centroid source offset	0.65 ± 1.24	0.52	-0.58 ± 1.25	-0.29 ± 1.21

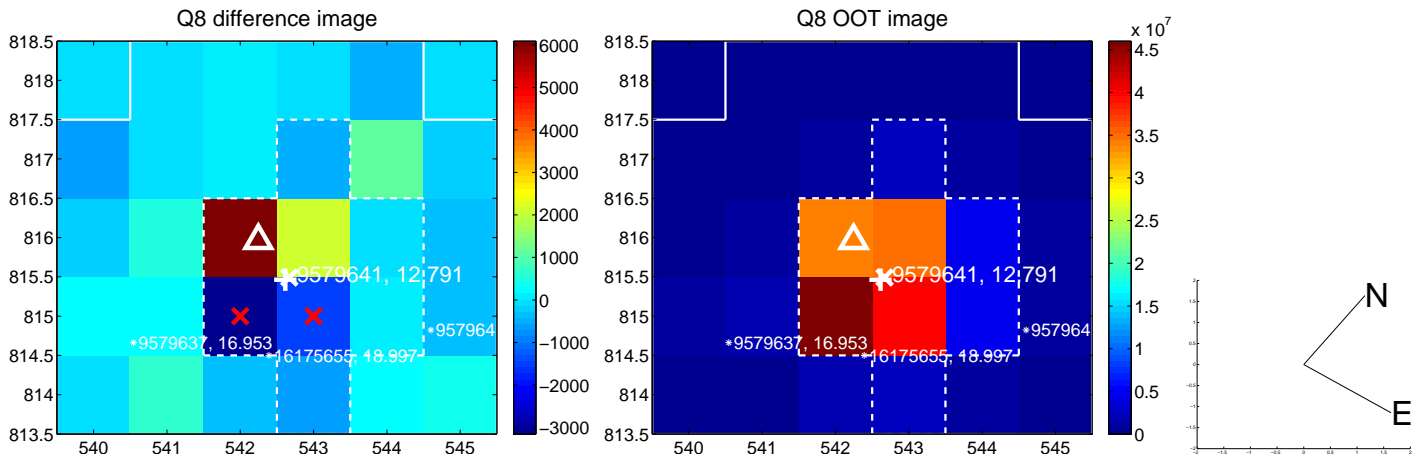
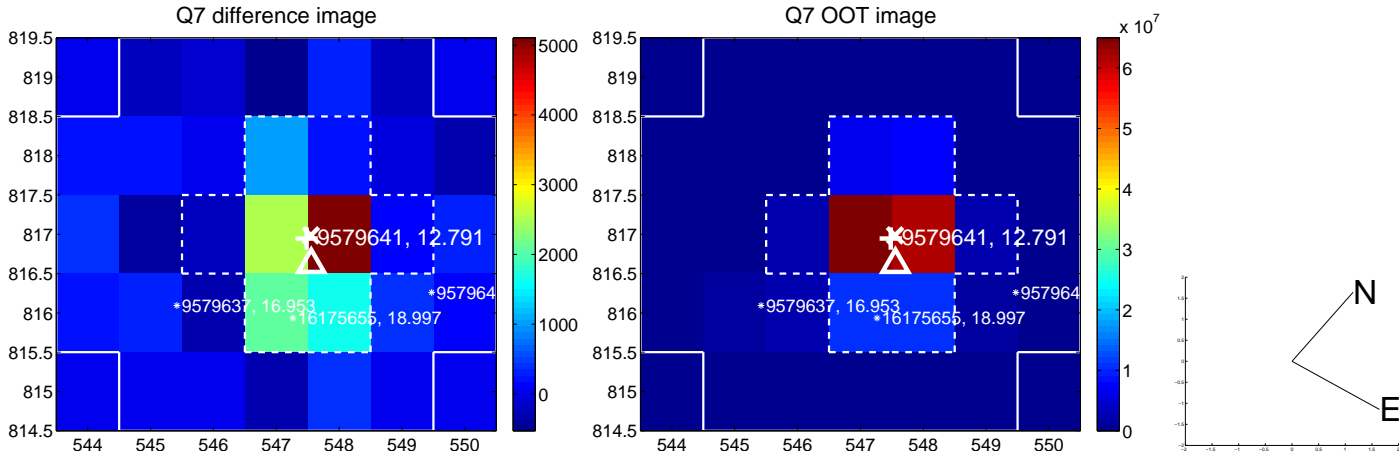
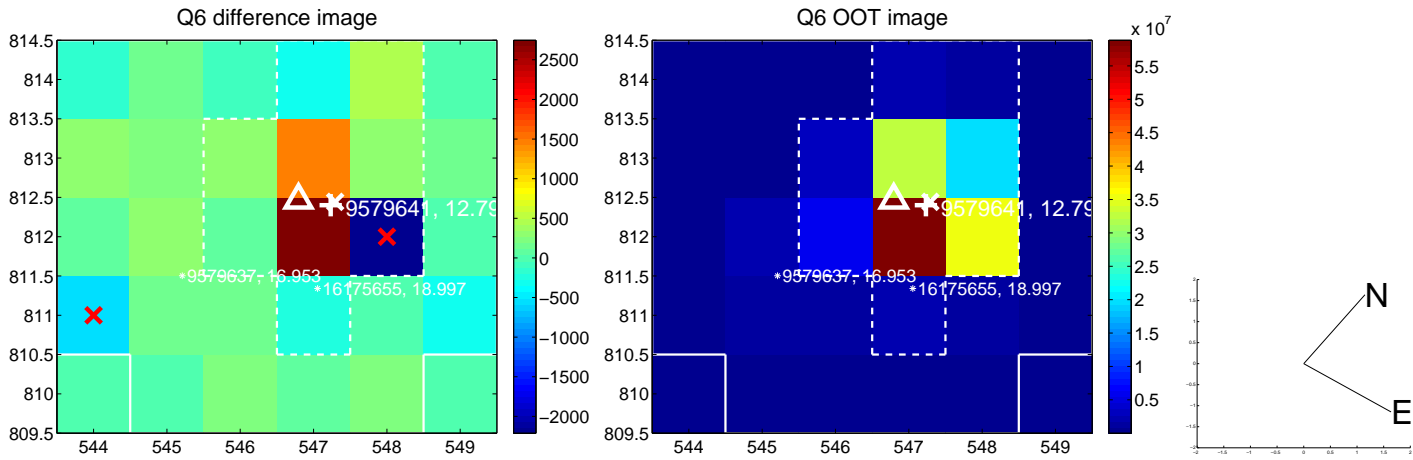
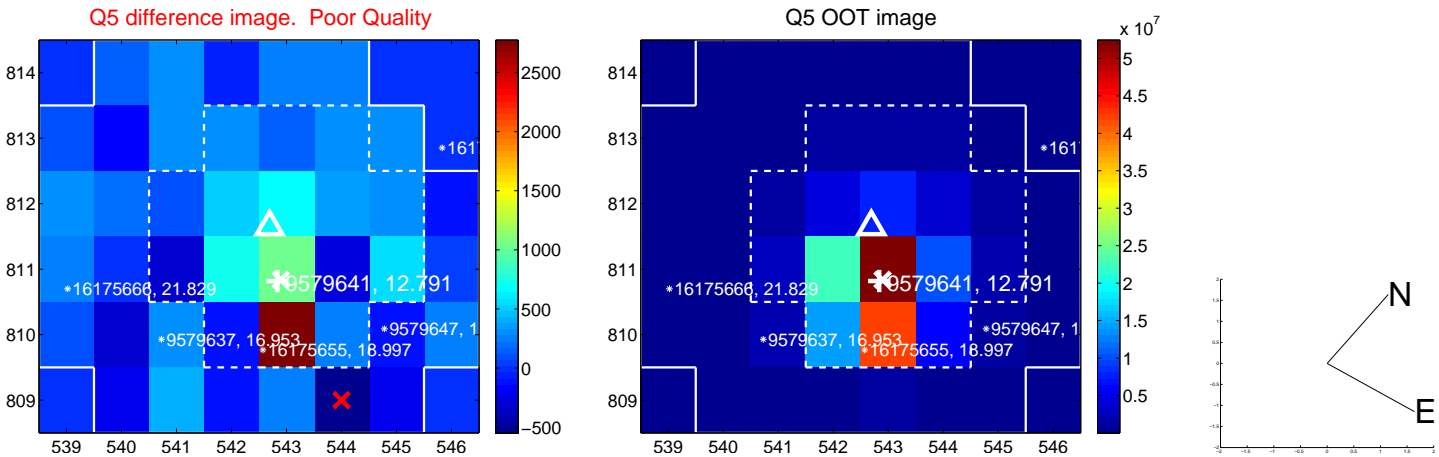


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

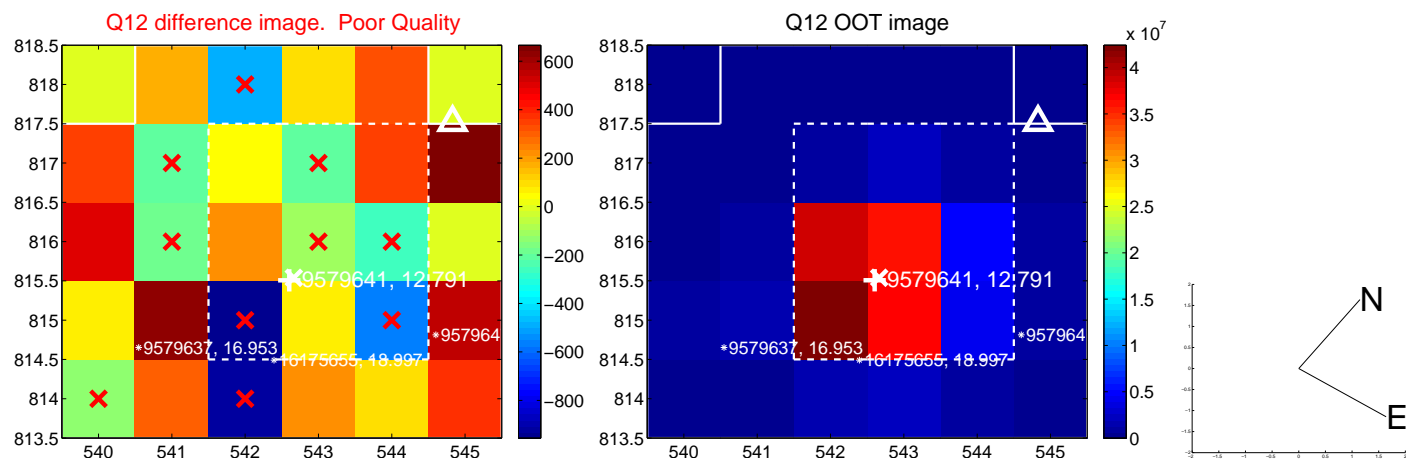
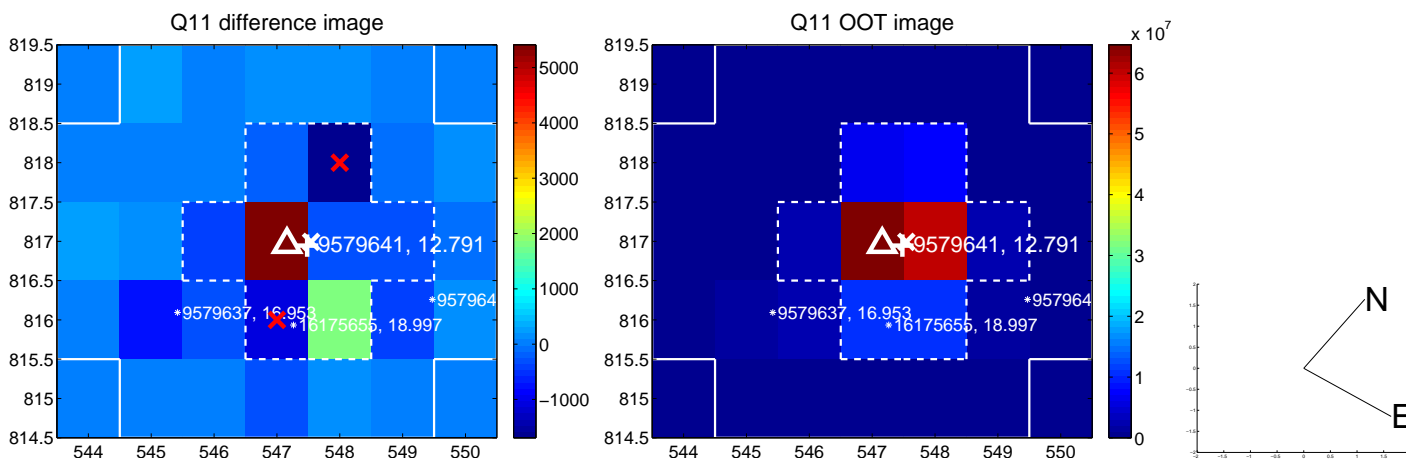
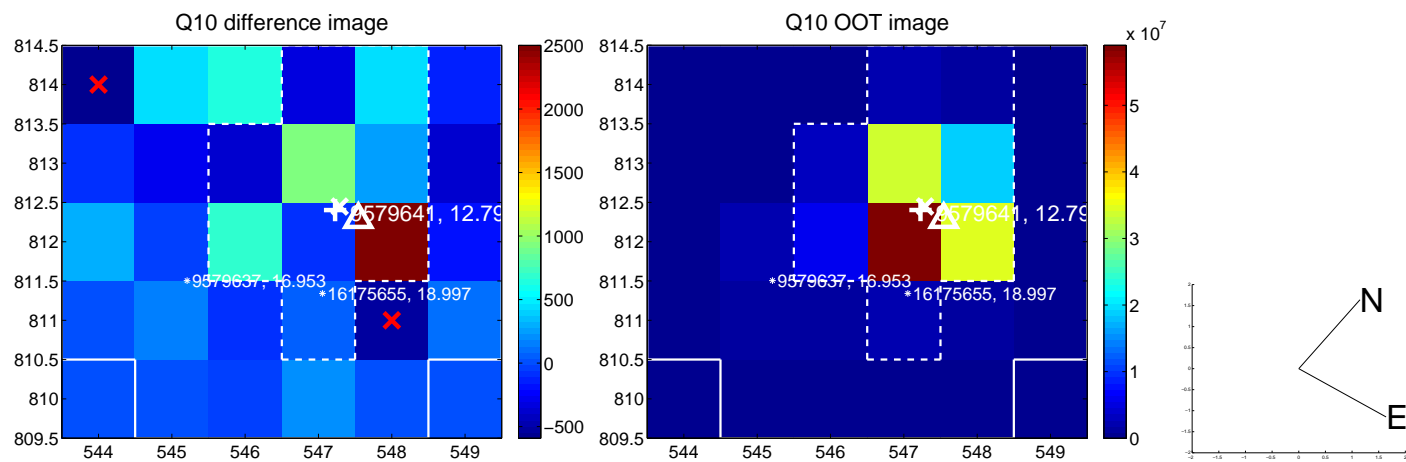
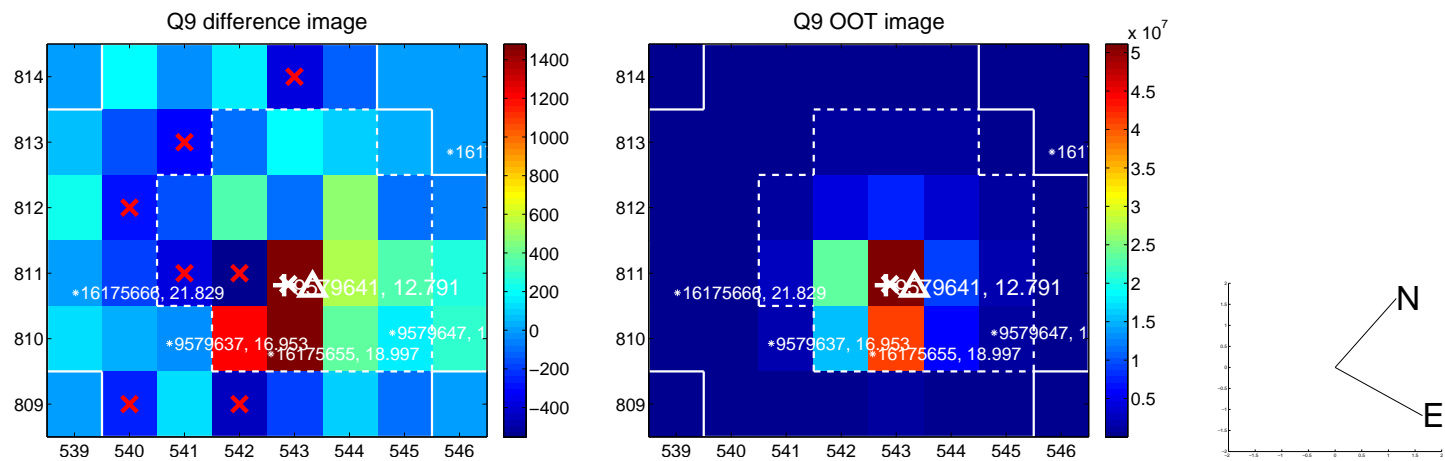
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



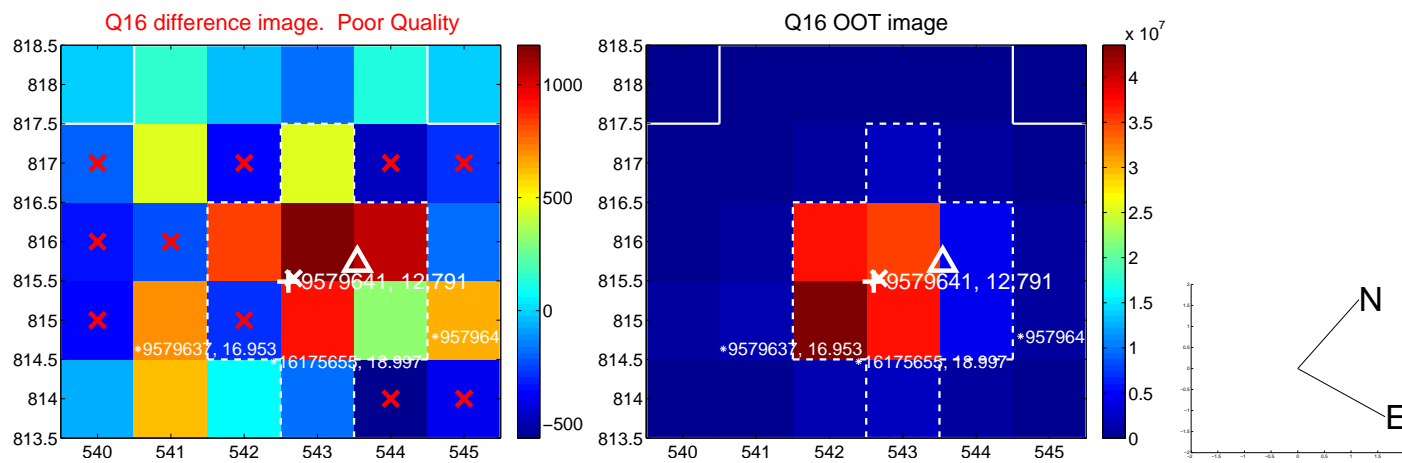
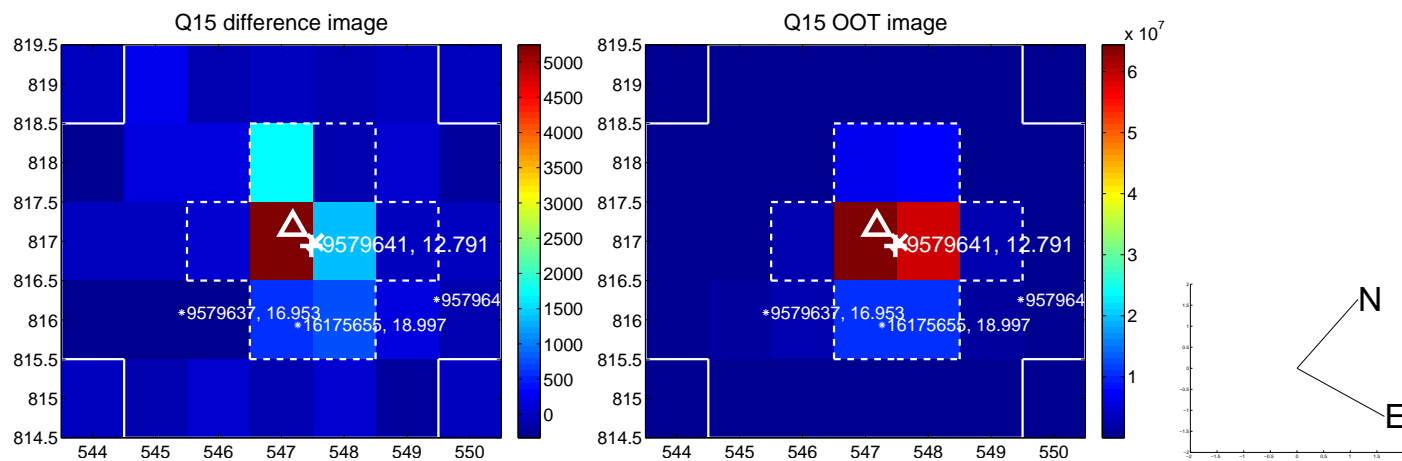
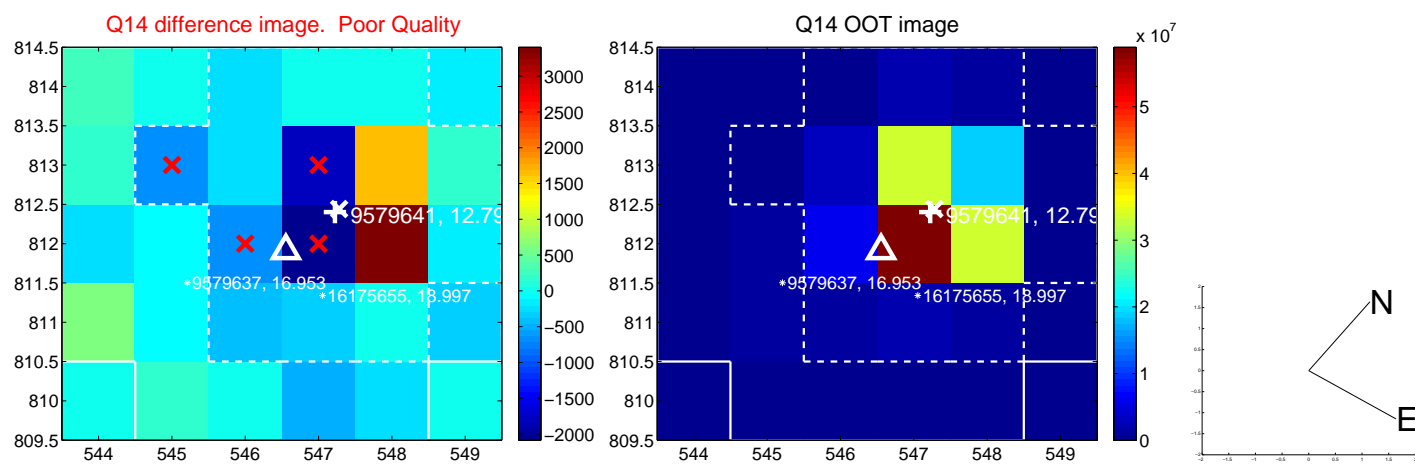
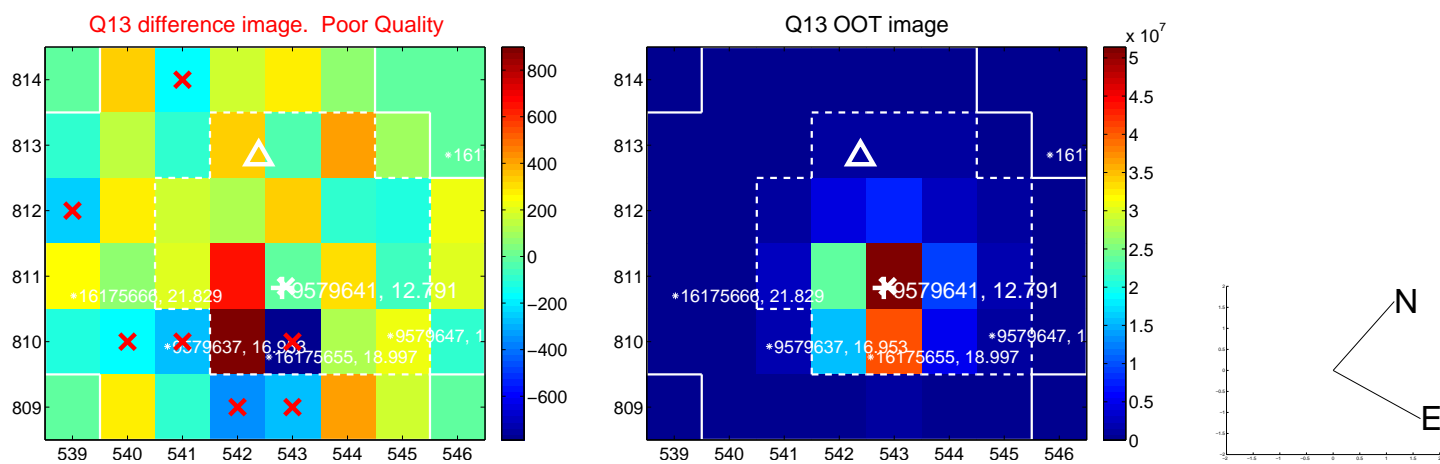
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



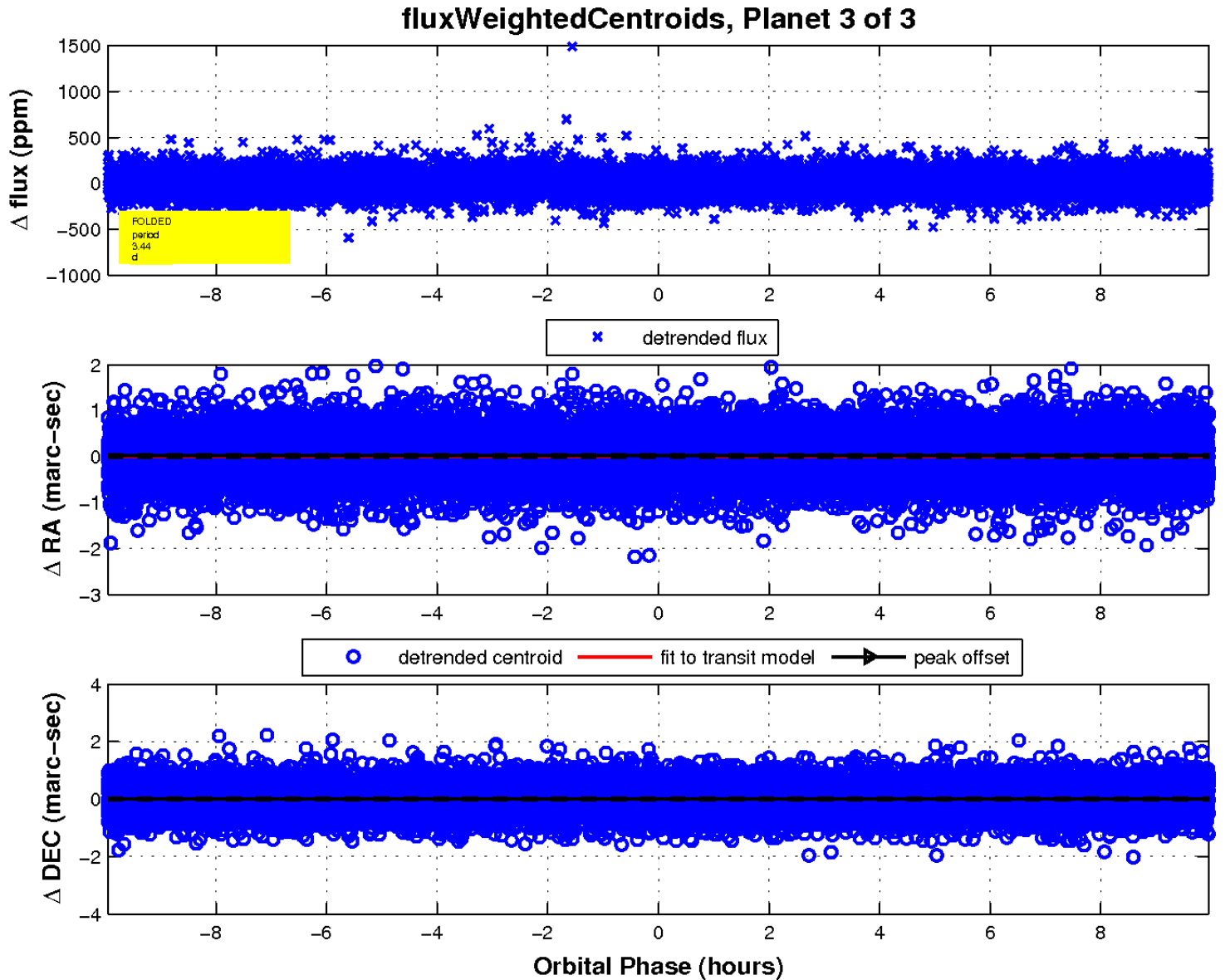
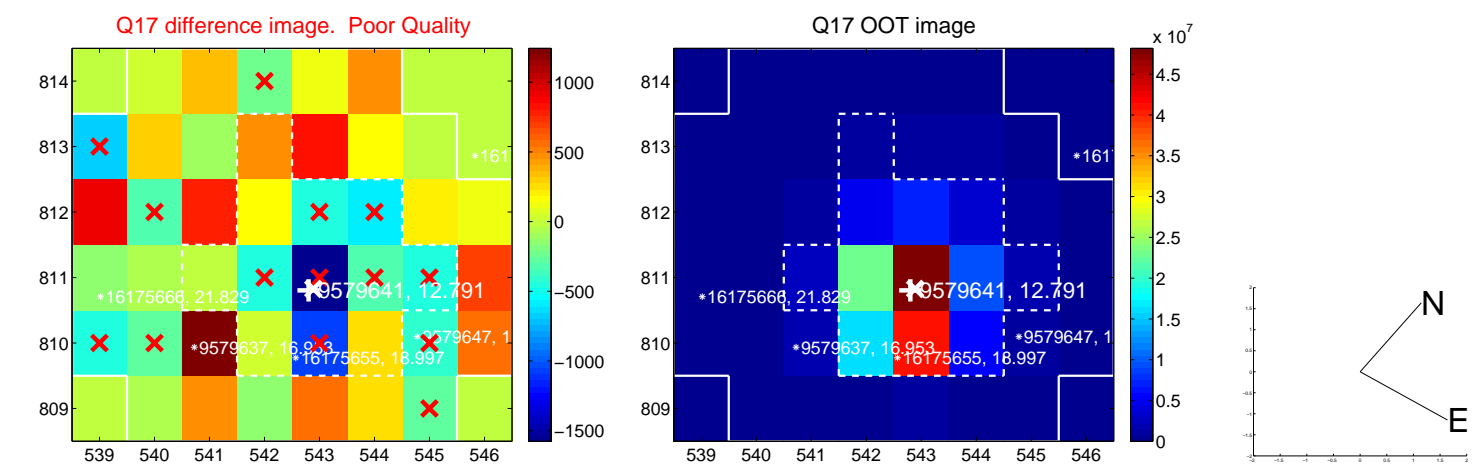
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

