

KIC 009146018

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})
009146018-01	OBS	0584.01	9.926728	135.979299	717.6	4.147	76.8	82.1	0.98	5475	3.16	98.50
009146018-02	OBS	0584.02	21.223444	149.151724	591.2	5.094	47.0	50.3	0.98	5475	2.76	35.76
009146018-03	OBS	0584.03	6.470329	136.499763	119.2	3.647	14.9	16.1	0.98	5475	1.43	174.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009146018-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009146018-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009146018-03	OBS	PC	0.93	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.

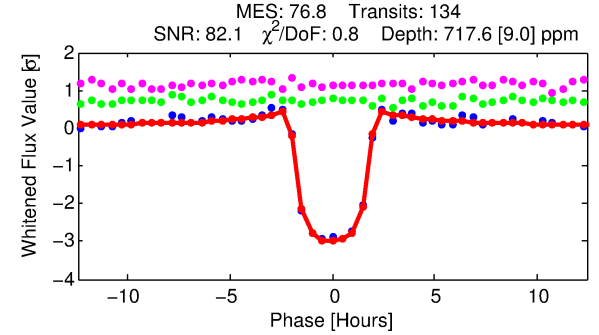
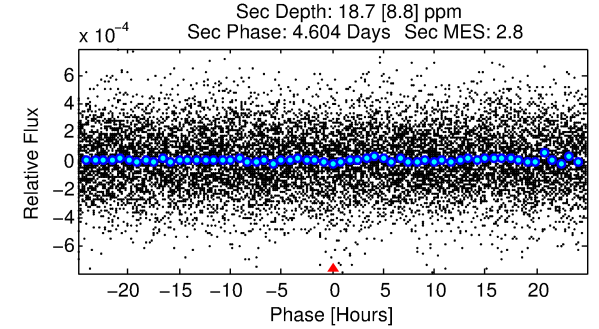
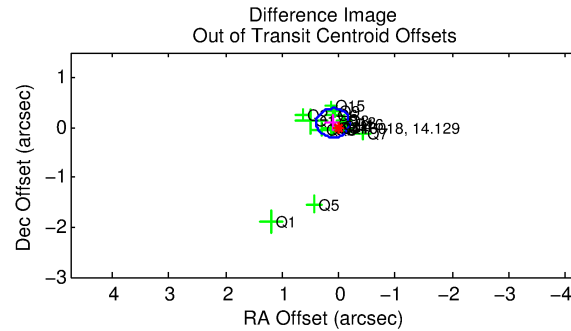
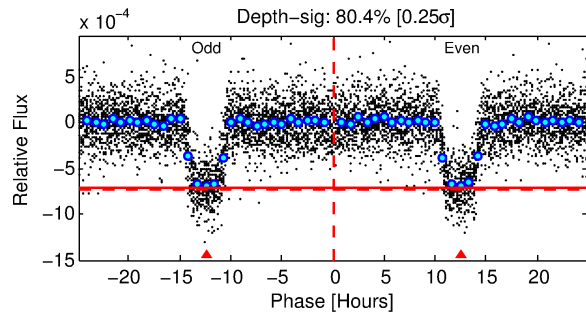
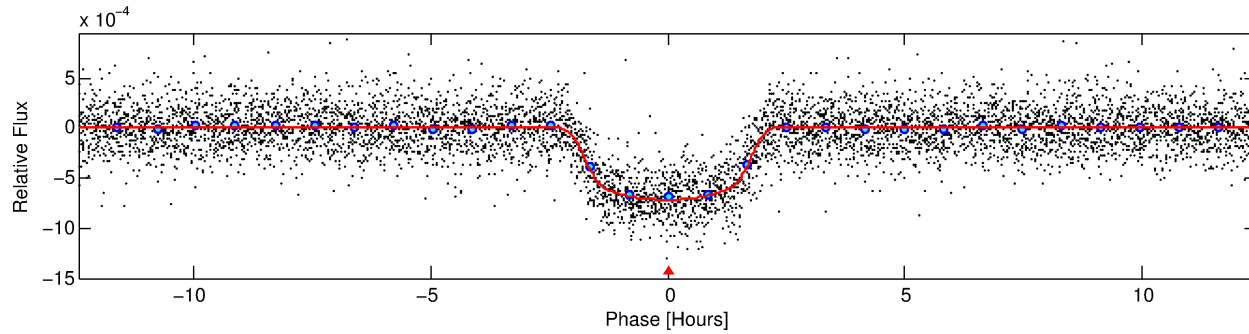
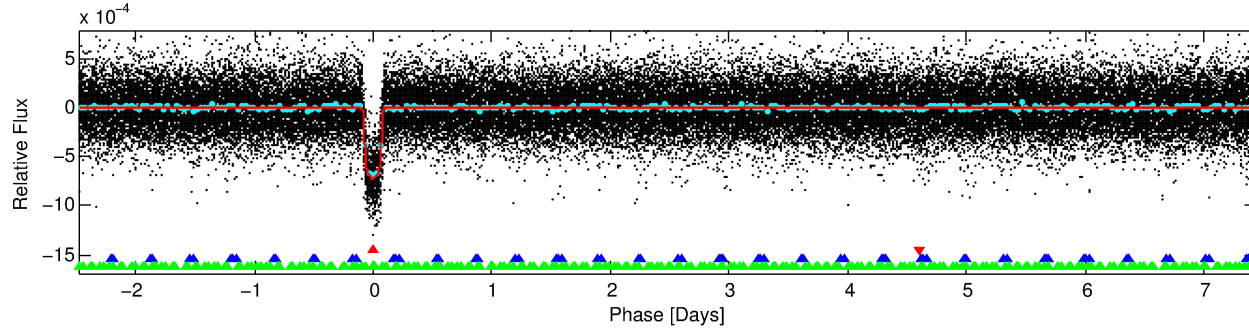
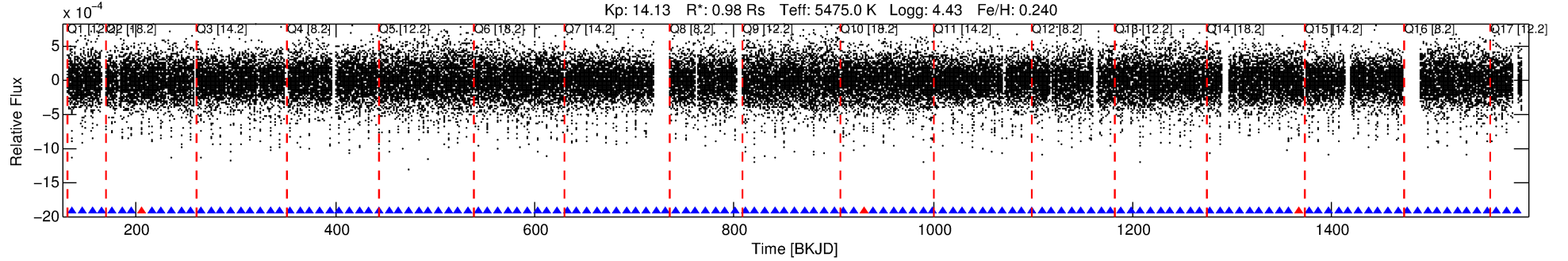
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009146018-01

No Significant Match Found

DV One-Page Summary

KIC: 9146018 Candidate: 1 of 3 Period: 9.927 d
KOI: K00584.01 Name: Kepler-192b Corr: 0.955



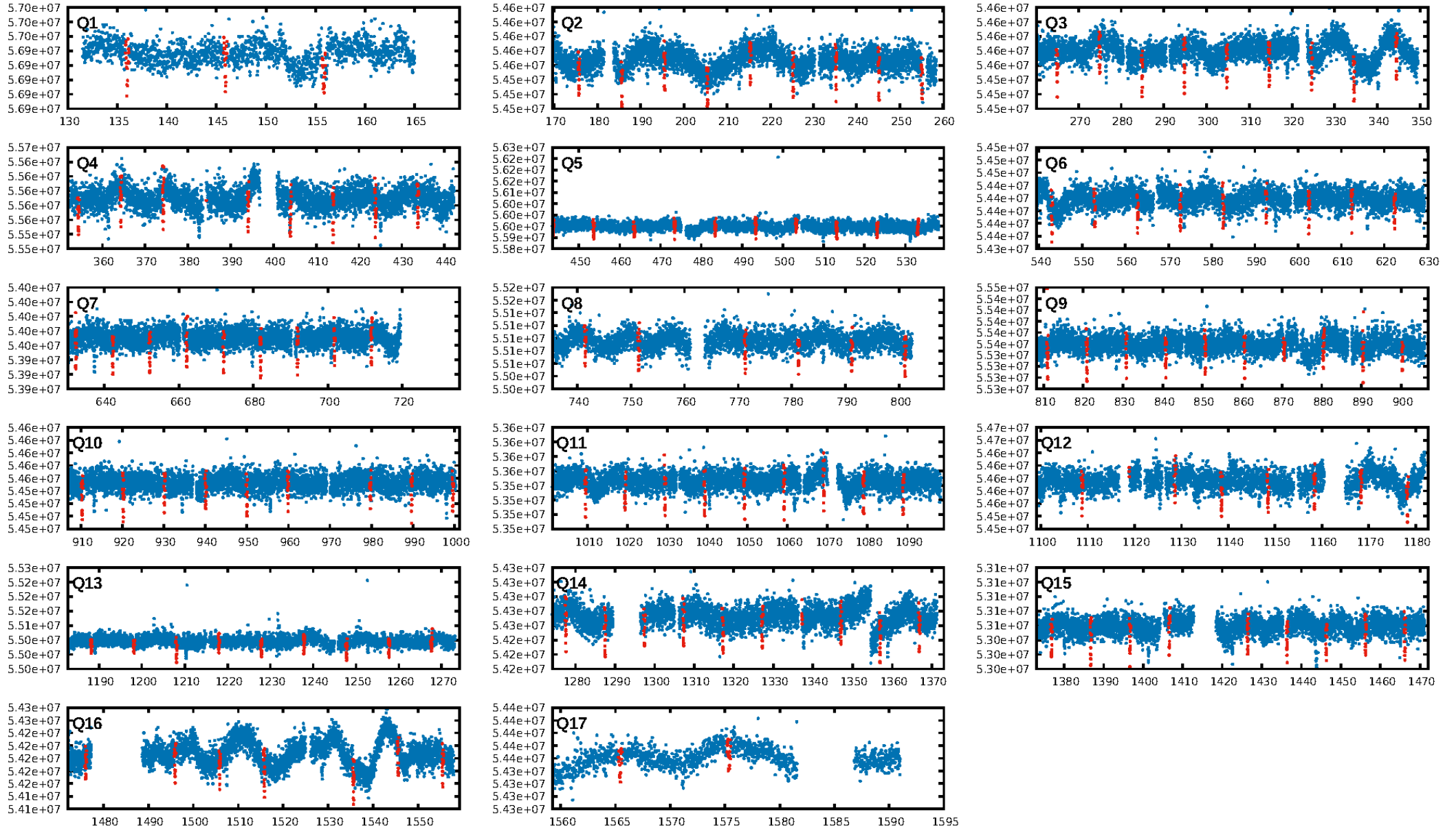
DV Fit Results:

Period = 9.92673 [0.00001] d
Epoch = 135.9793 [0.0010] BKJD
Rp/R* = 0.0295 [0.0007]
a/R* = 9.25 [0.90]
b = 0.90 [0.02]
Seff = 98.50 [20.30]
Teq = 803 [41] K
Rp = 3.16 [0.45] Re
a = 0.0888 [0.0111] AU
Ag = 8.10 [4.15] [1.71 σ]
Teffp = 2095 [253] K [5.05 σ]

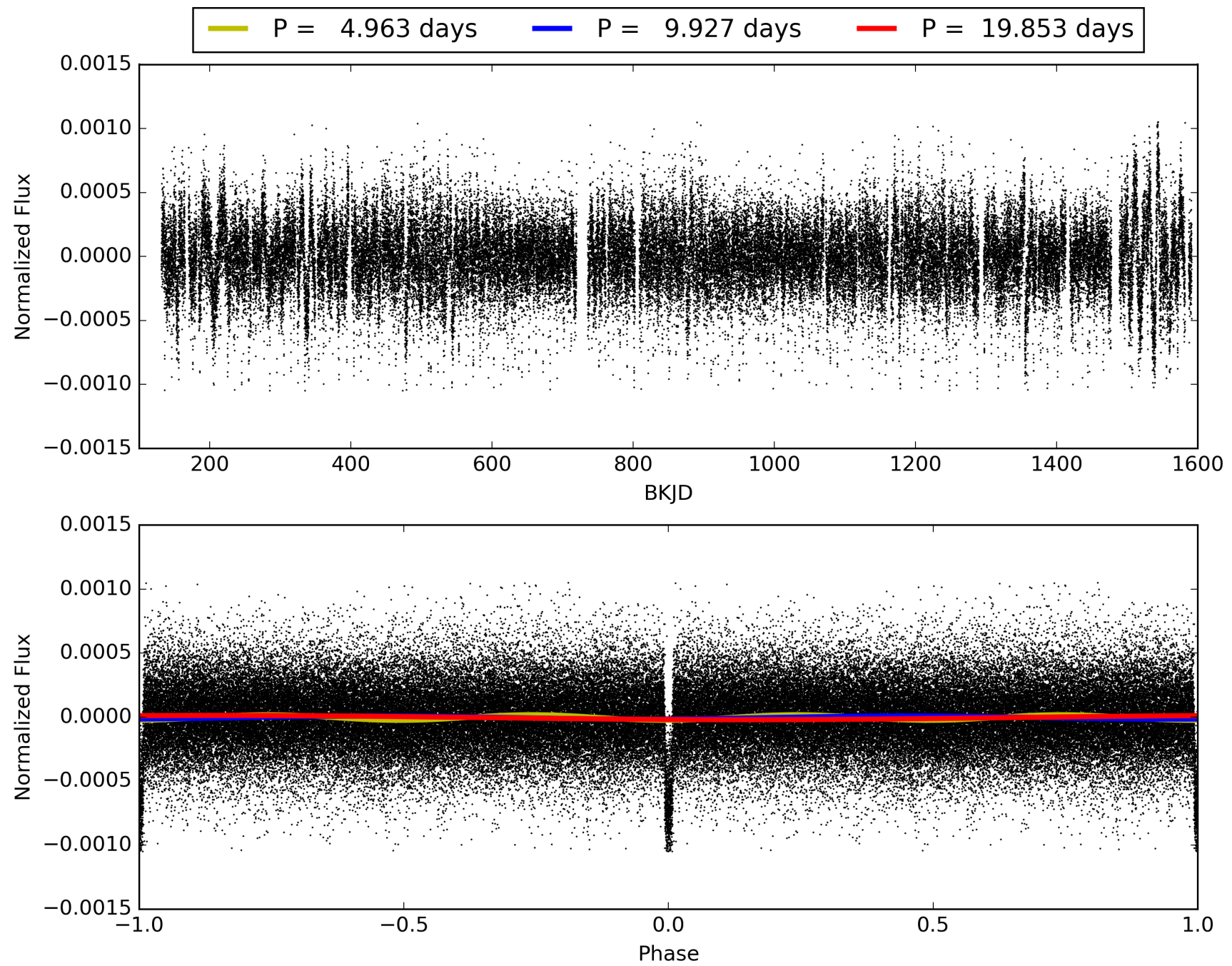
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.02 σ]
LongPeriod-sig: 100.0% [41.28 σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [126/129]
GhostDiagnostic-chr: 7.122
Centroid-sig: 0.8%
Centroid-so: 0.387 arcsec [2.70 σ]
OotOffset-rm: 0.136 arcsec [1.40 σ]
KicOffset-rm: 0.238 arcsec [2.13 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]

TCE 009146018-01, PDC Light Curves

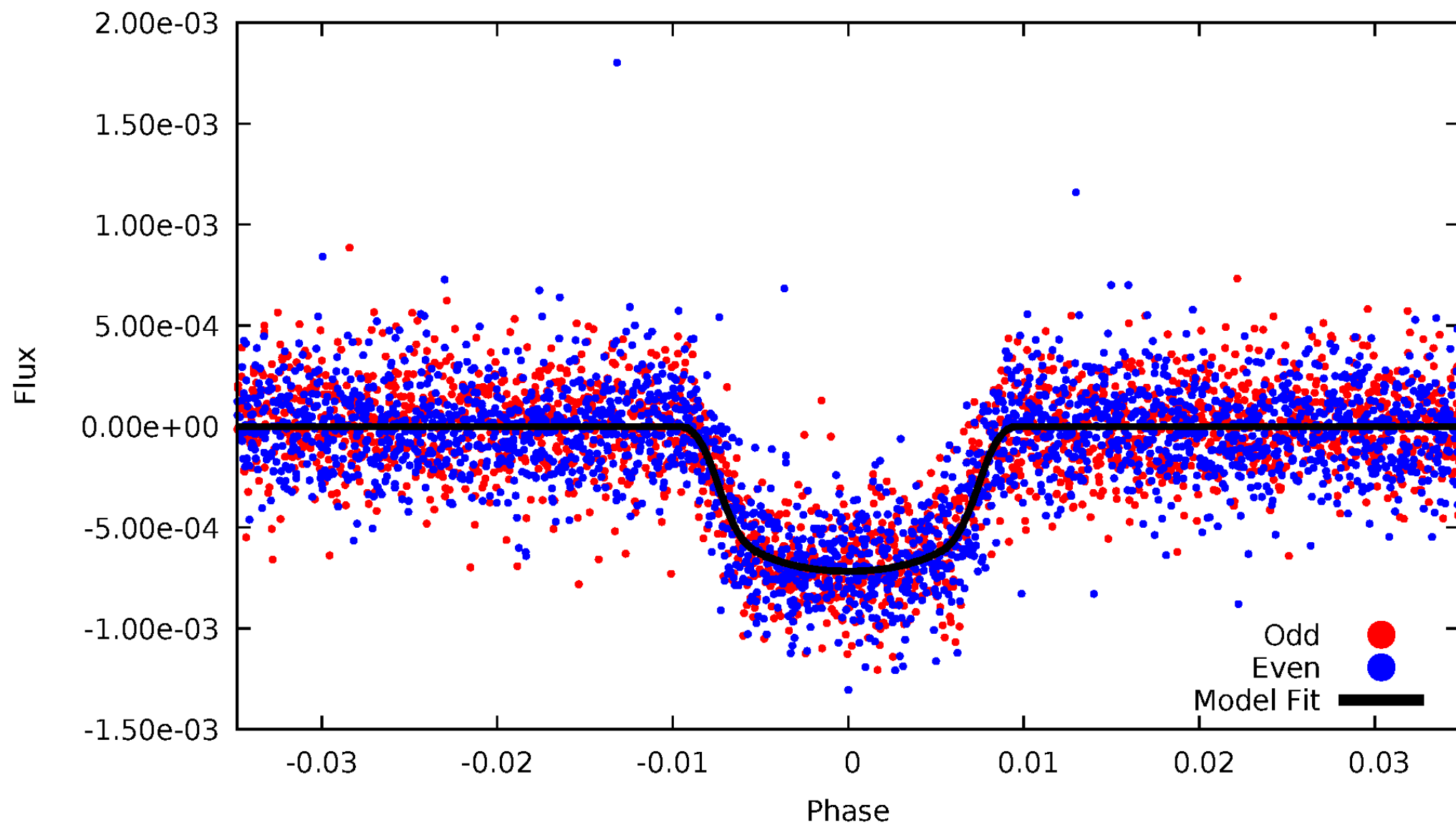


TCE 009146018-01



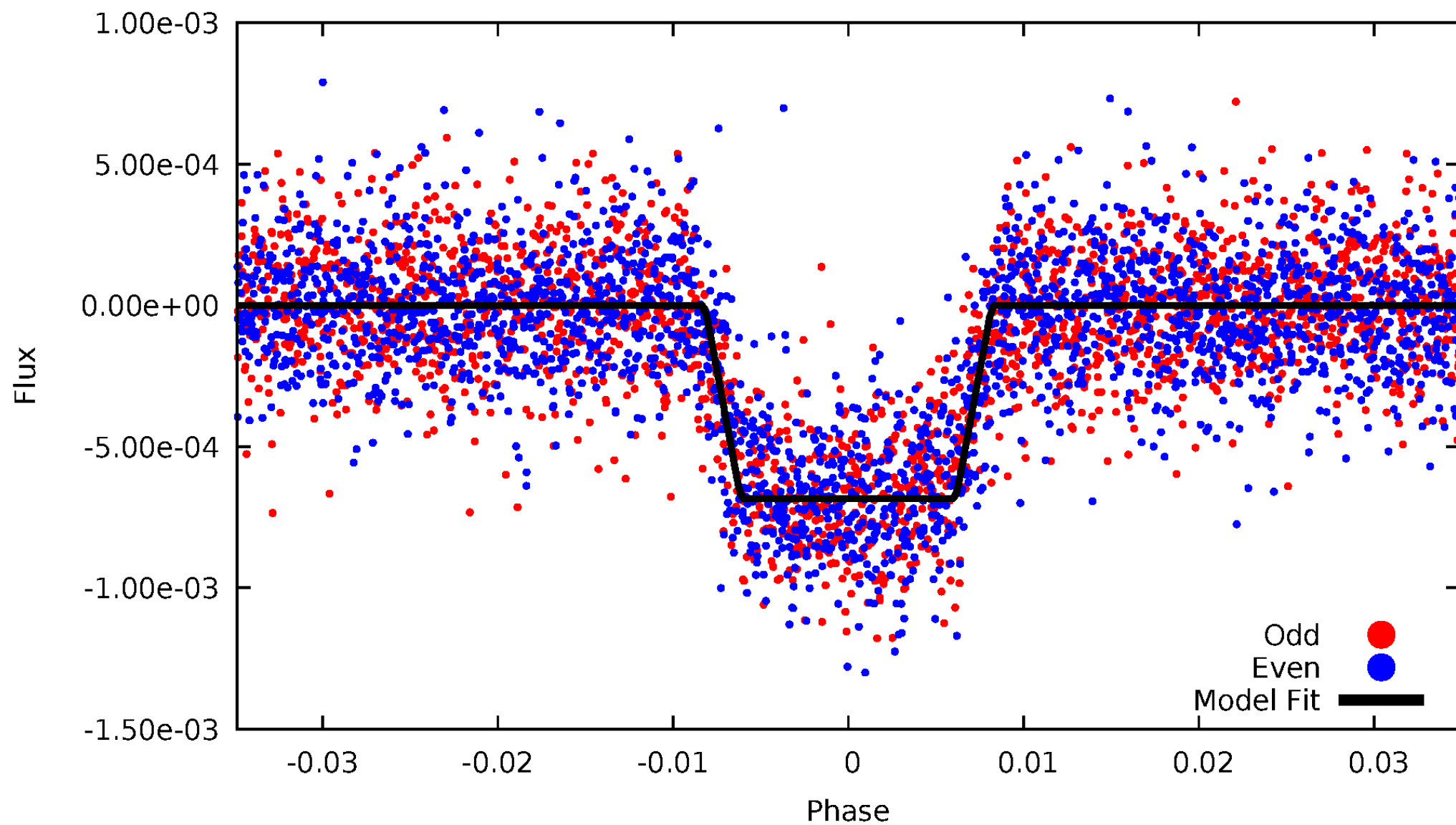
DV Odd/Even

TCE 009146018-01



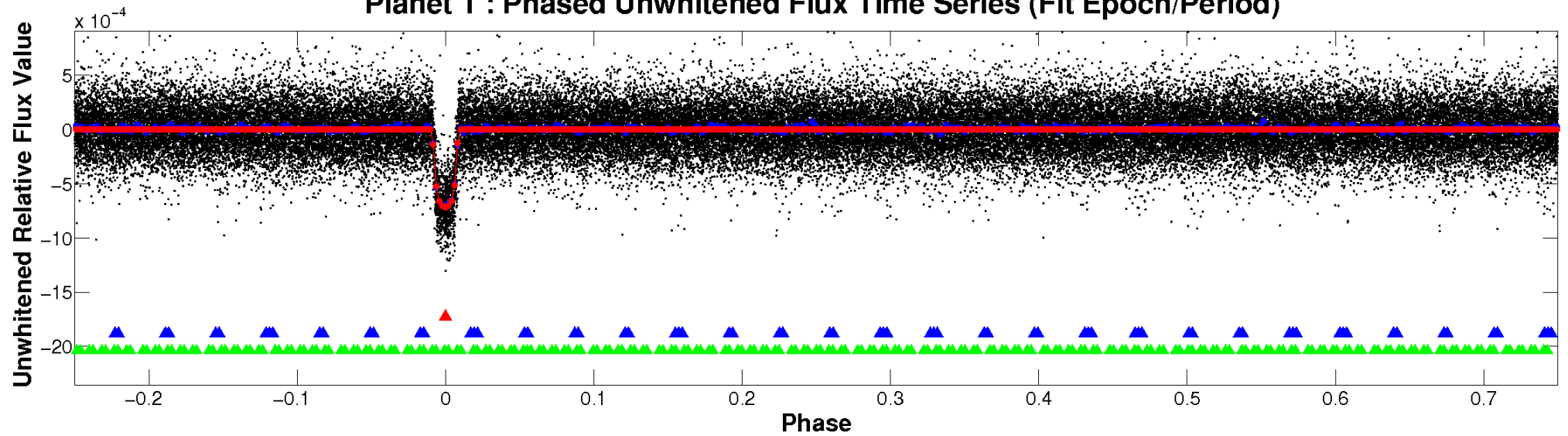
ALT Odd/Even

TCE 009146018-01

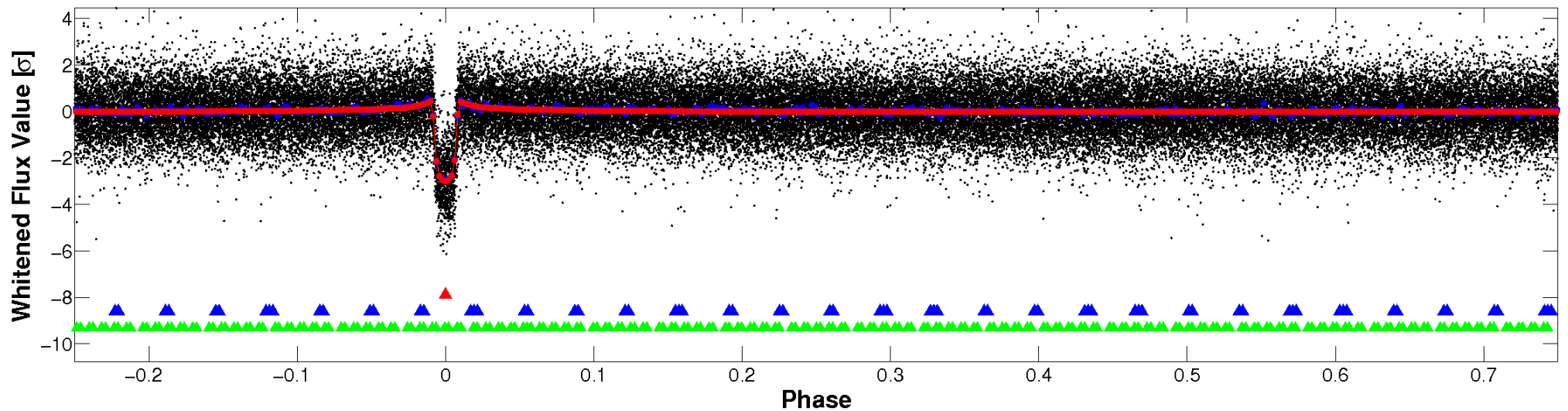


Non-Whitened Vs. Whitened Light Curve

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

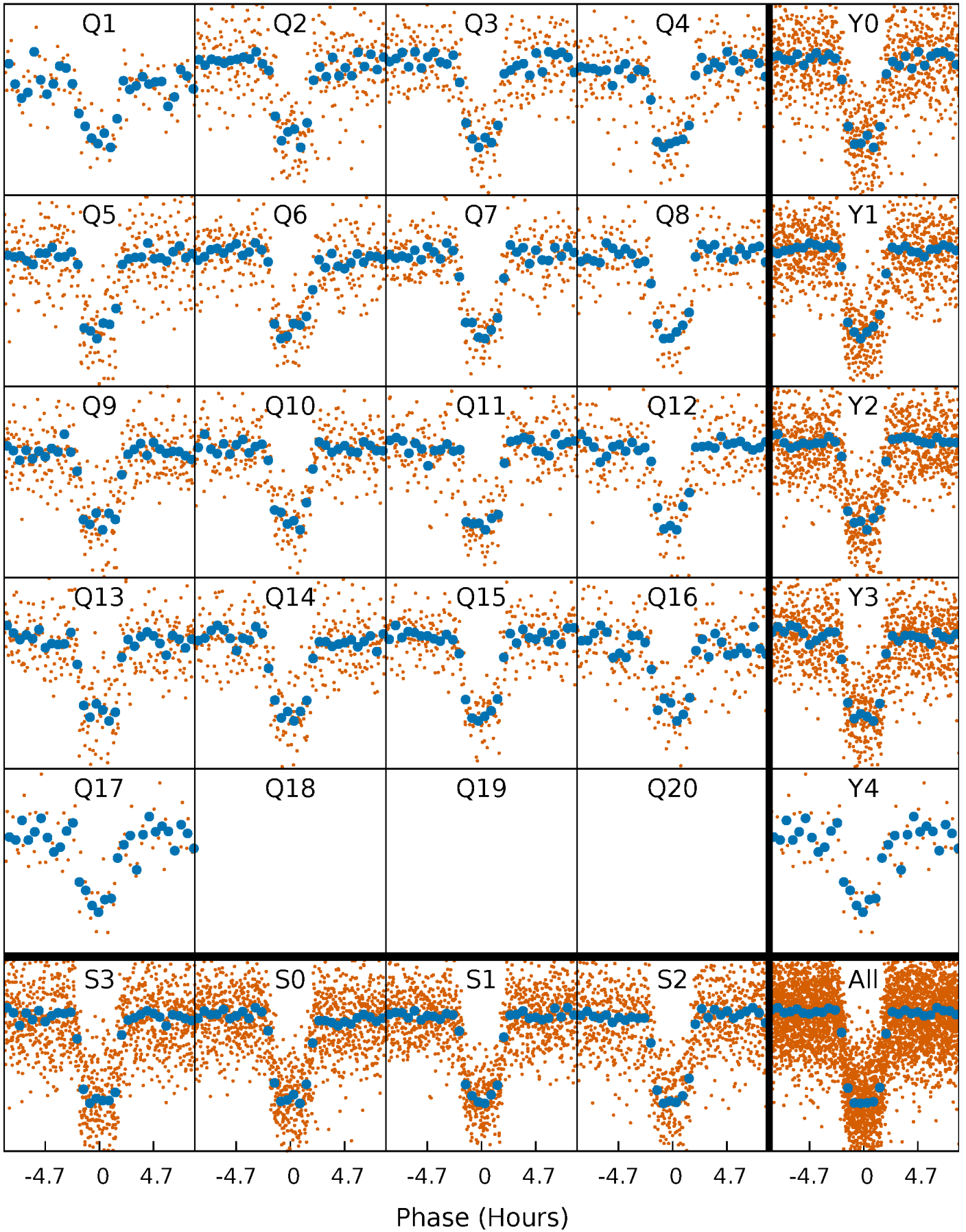


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



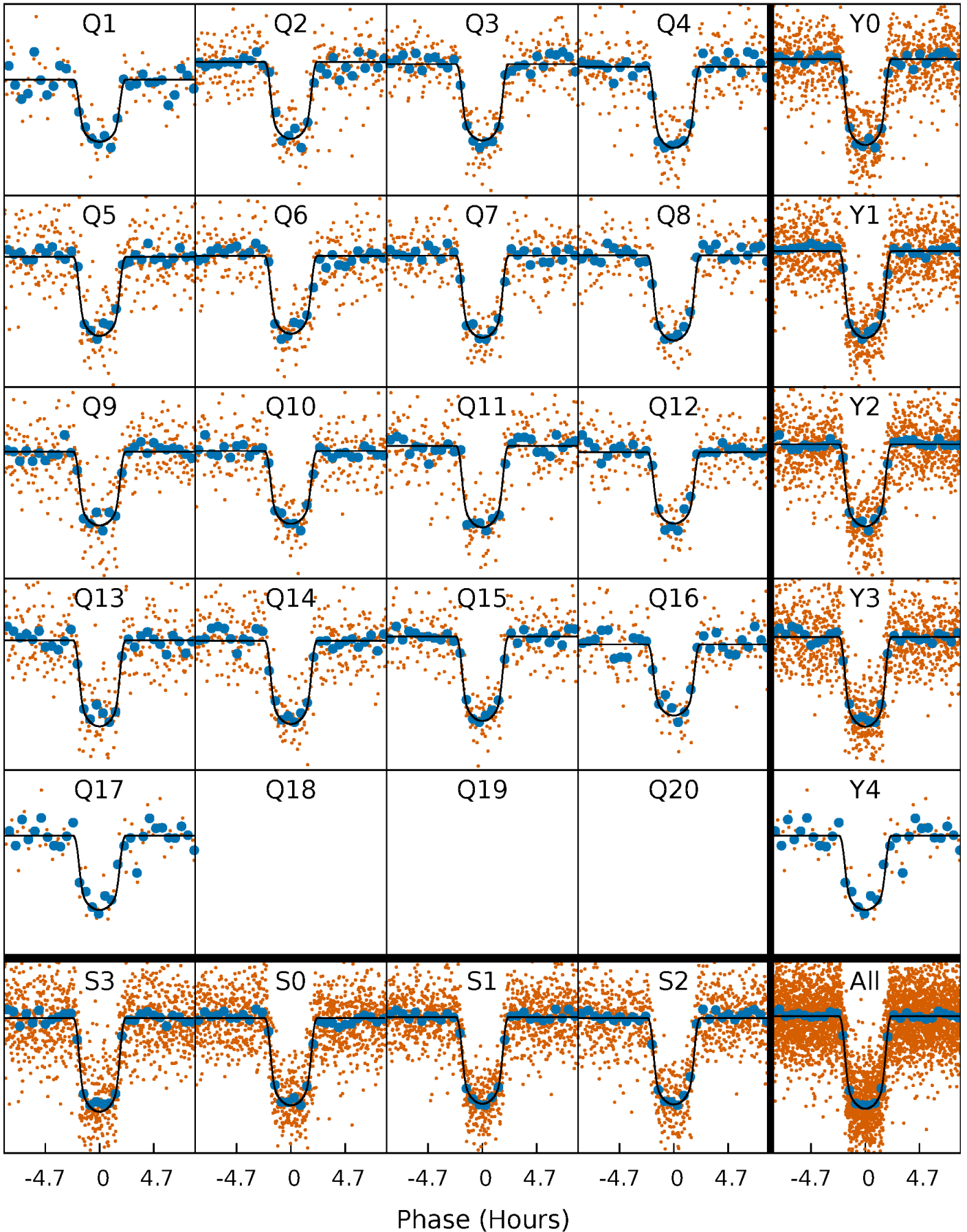
PDC Quarter-Phased Transit Curves

TCE 009146018-01 P= 9.926728 Days $T_0=135.979299$ (BKJD)



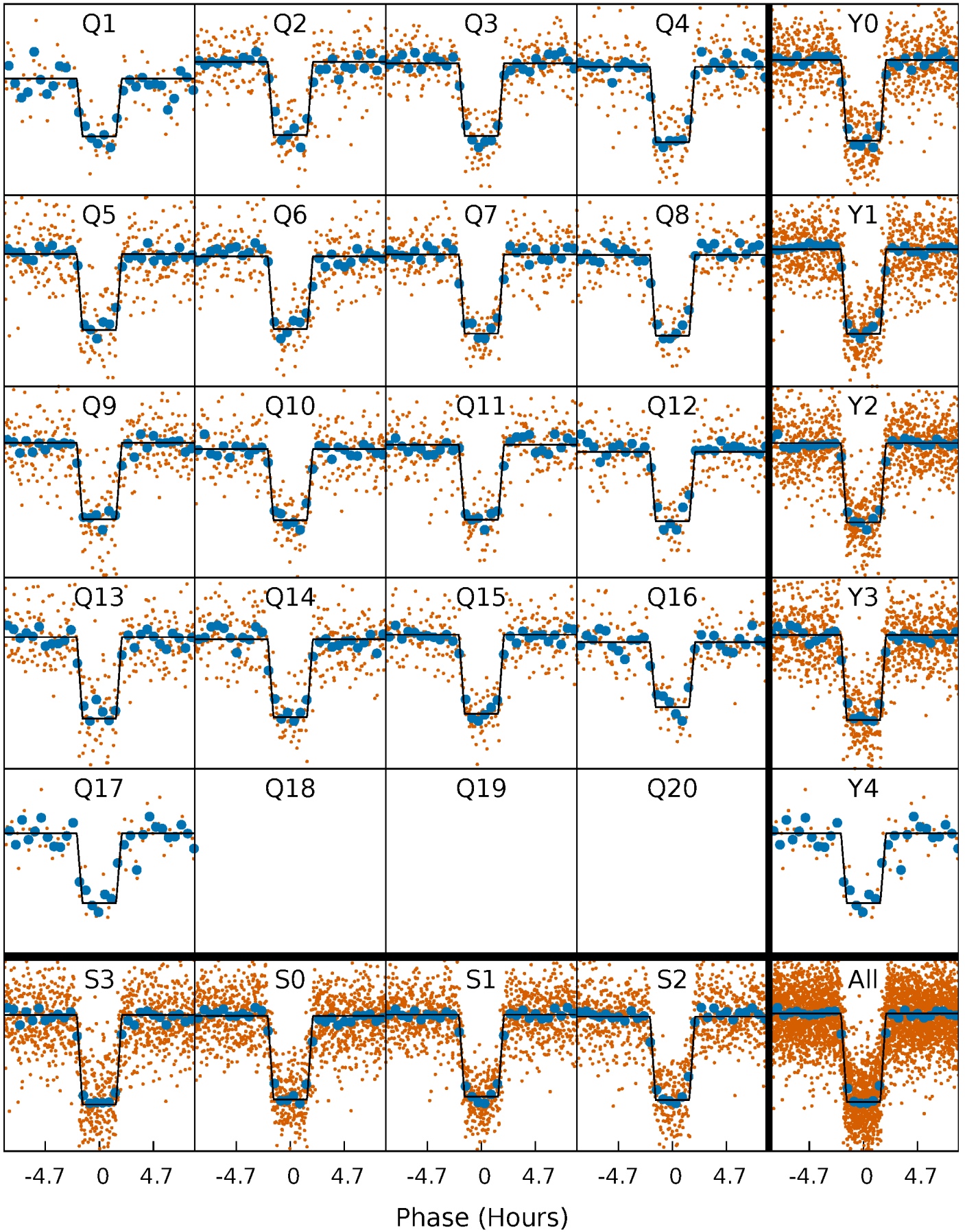
DV Quarter-Phased Transit Curves

TCE 009146018-01 P= 9.926728 Days $T_0=135.979299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

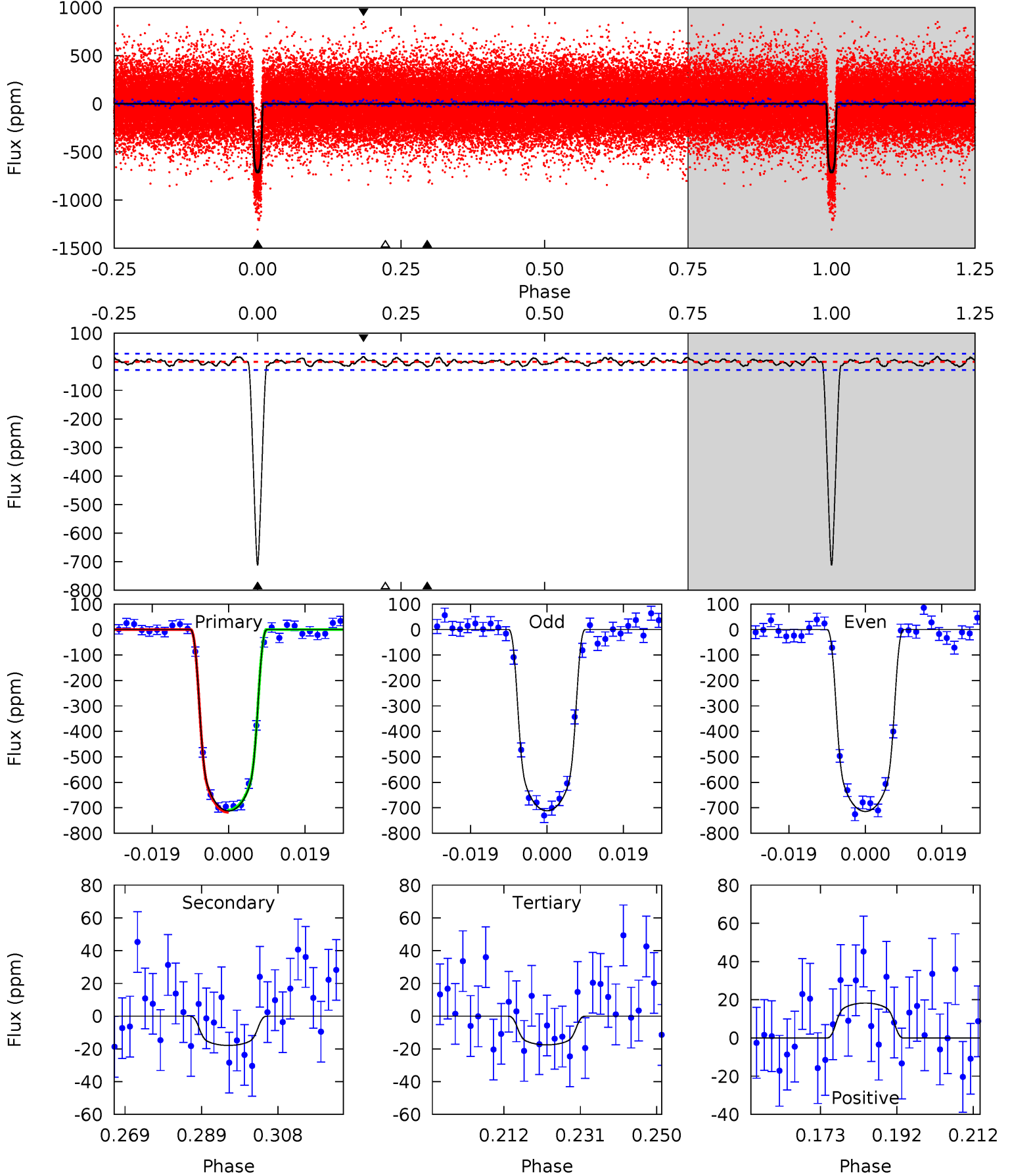
TCE 009146018-01 P= 9.926722 Days $T_0=135.980001$ (BKJD)



DV Model-Shift Uniqueness Test

009146018-01, P = 9.926728 Days, E = 126.052571 Days

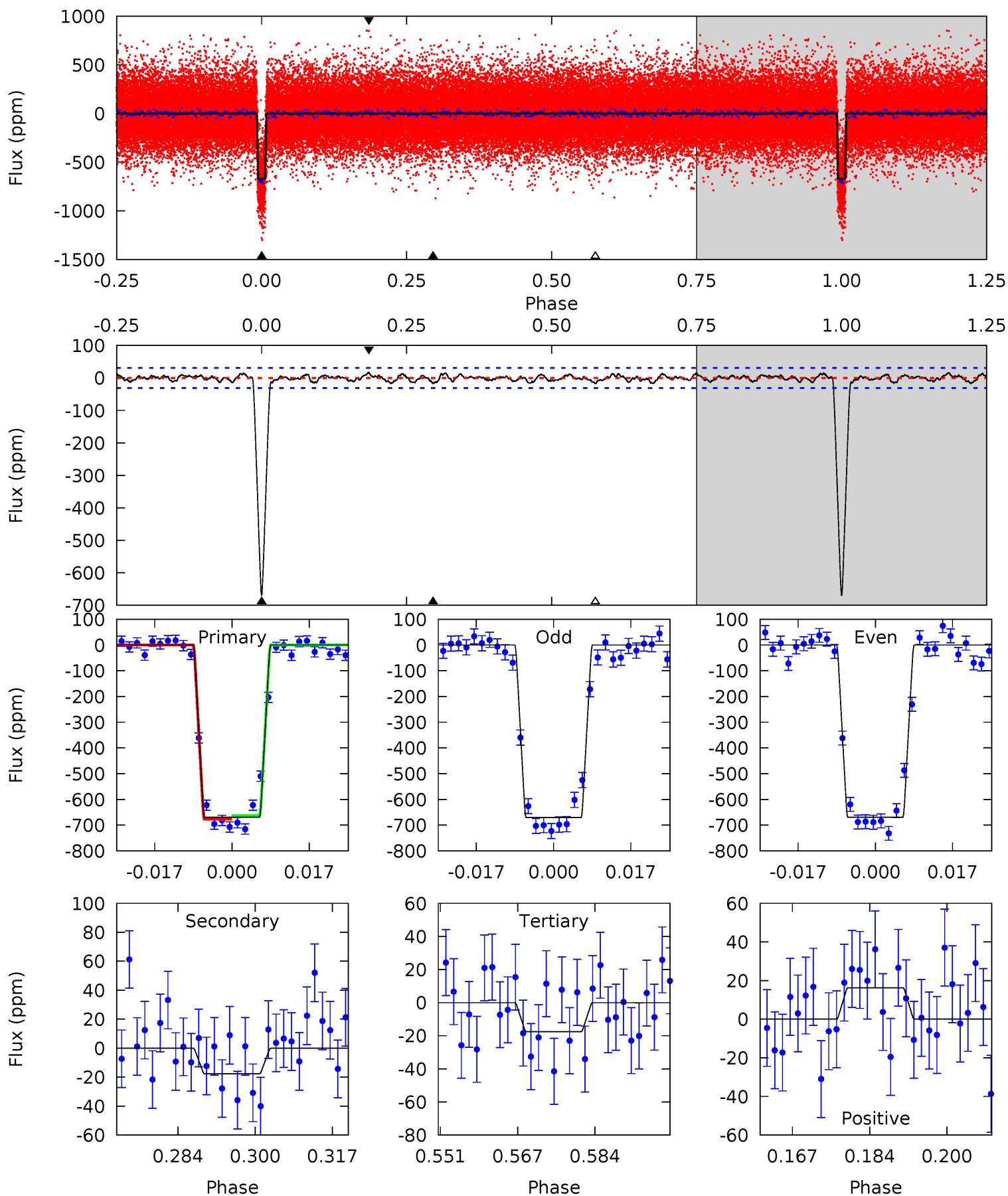
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
121.7	3.05	3.00	3.12	4.90	2.34	1.30	118.7	118.5	0.06	-0.07	0.23	0.99	0.03	0.69



Alt Model-Shift Uniqueness Test

009146018-01, P = 9.926722 Days, E = 126.053279 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
106.5	2.81	2.79	2.59	4.93	2.39	1.11	103.7	103.9	0.02	0.22	0.08	0.99	0.02	1.05



Stellar Parameters For KIC 009146018

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5475^{+109}_{-109}	$4.430^{+0.081}_{-0.108}$	$0.240^{+0.150}_{-0.150}$	$0.982^{+0.137}_{-0.080}$	$0.947^{+0.056}_{-0.046}$	$1.407^{+0.467}_{-0.414}$
	+2%/-2%	+2%/-2%	+62%/-62%	+14%/-8%	+6%/-5%	+33%/-29%
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 009146018-01 / KOI 0584.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 6	$3.17^{+0.25}_{-0.19}$	1124^{+46}_{-36}	2796^{+123}_{-174}	$7.678^{+2.849}_{-2.947}$
Alt.	-18 ± 6	$2.80^{+0.24}_{-0.18}$	1124^{+47}_{-40}	2881^{+133}_{-178}	$9.494^{+3.826}_{-3.571}$

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

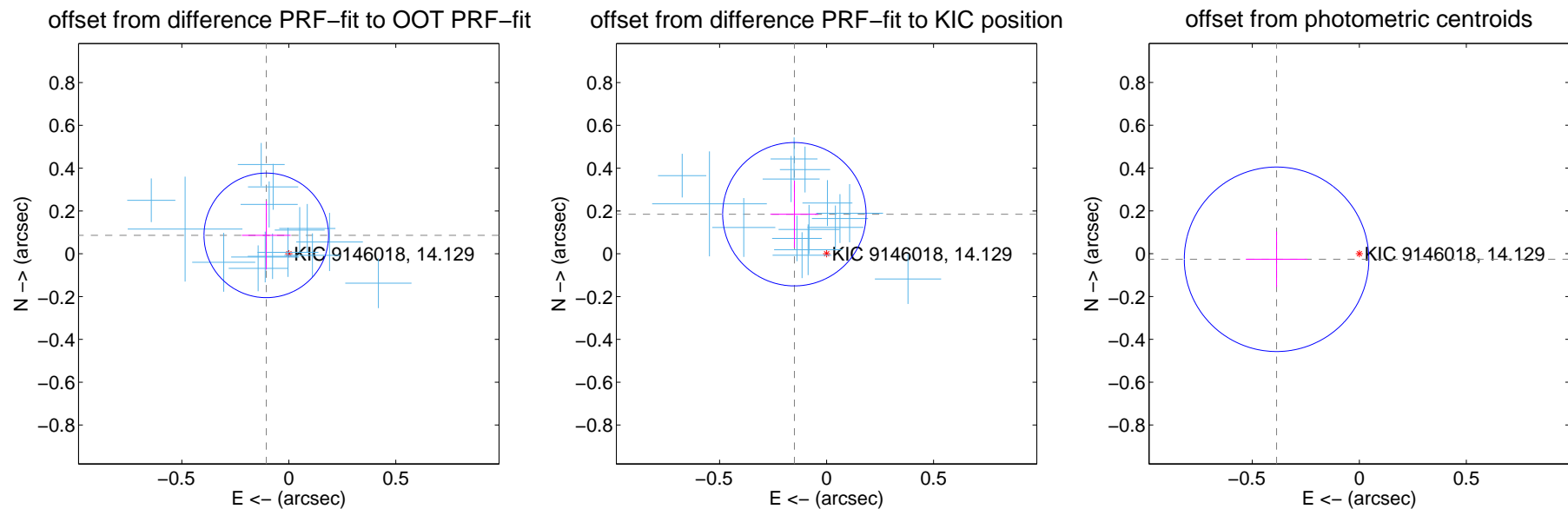
DV Centroid Data

Supplemental centroid analysis for 009146018-01. Kepler magnitude: 14.13. Transit SNR 82.06

There are 17 quarters with good PRF difference image offsets

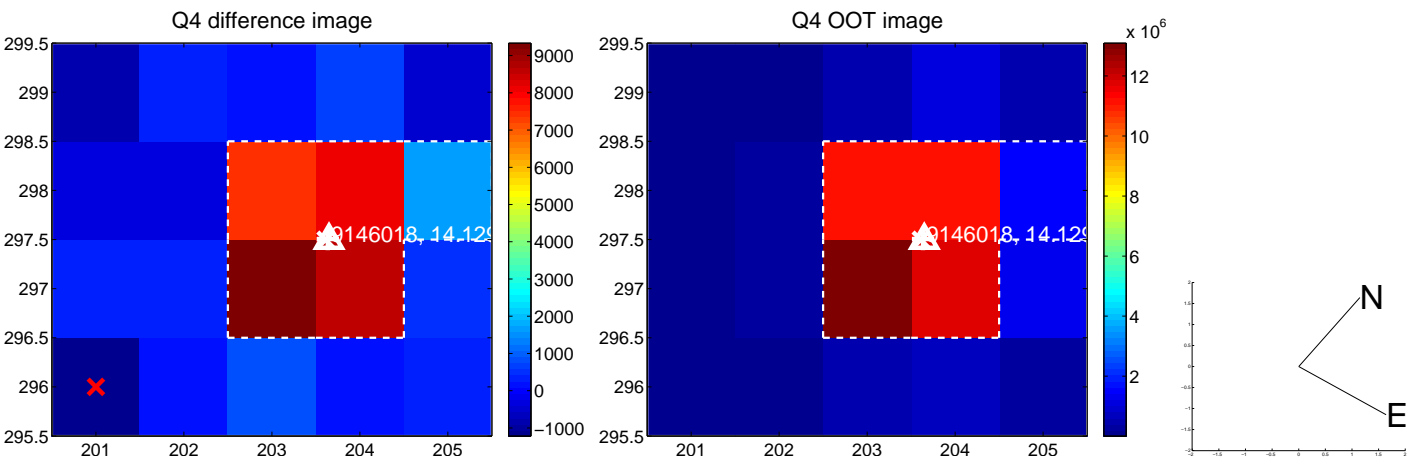
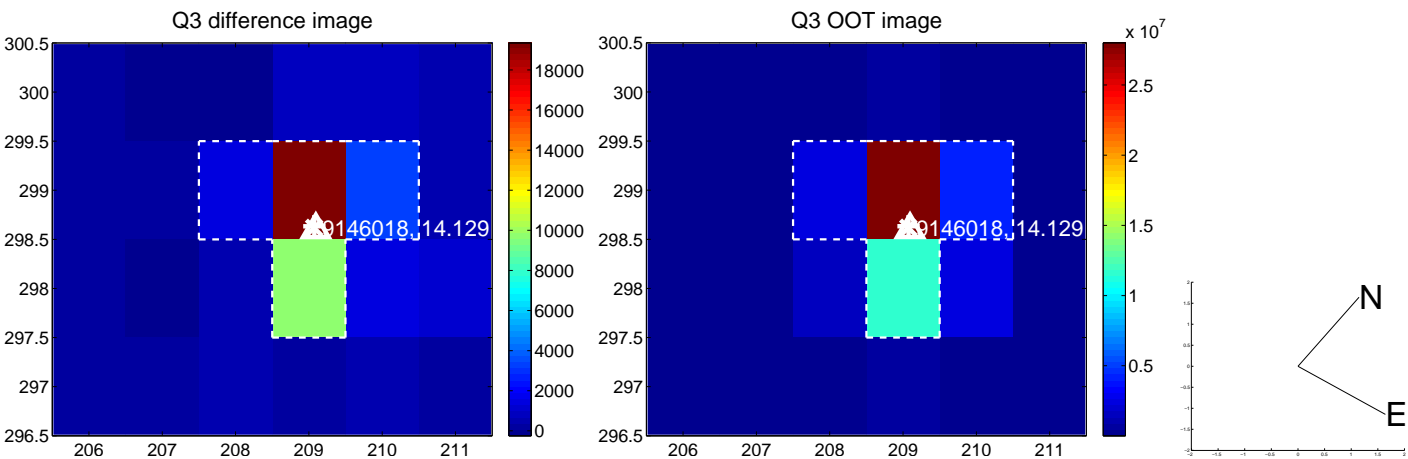
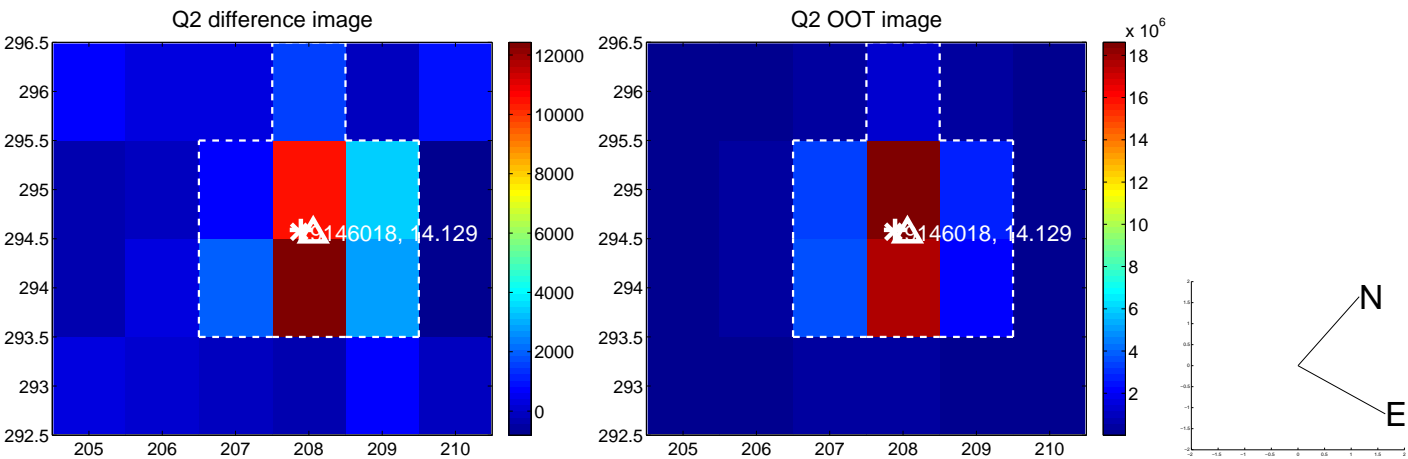
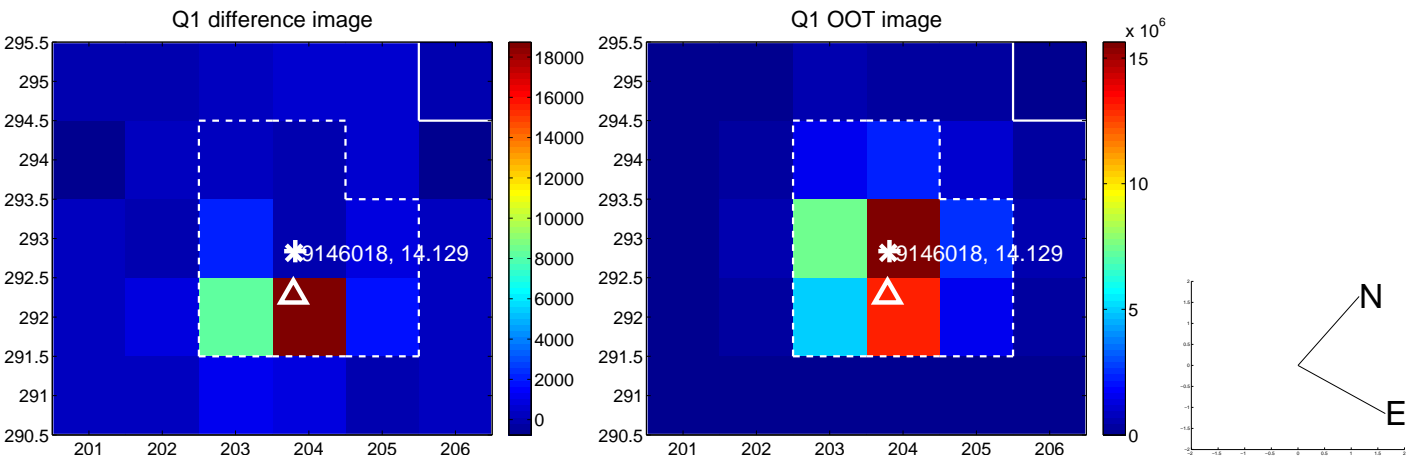
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.136 ± 0.097	1.40	0.105 ± 0.114	0.086 ± 0.160
PRF-fit source offset from KIC position	0.238 ± 0.112	2.13	0.150 ± 0.112	0.185 ± 0.157
photometric centroid source offset	0.39 ± 0.14	2.70	0.39 ± 0.14	-0.03 ± 0.13

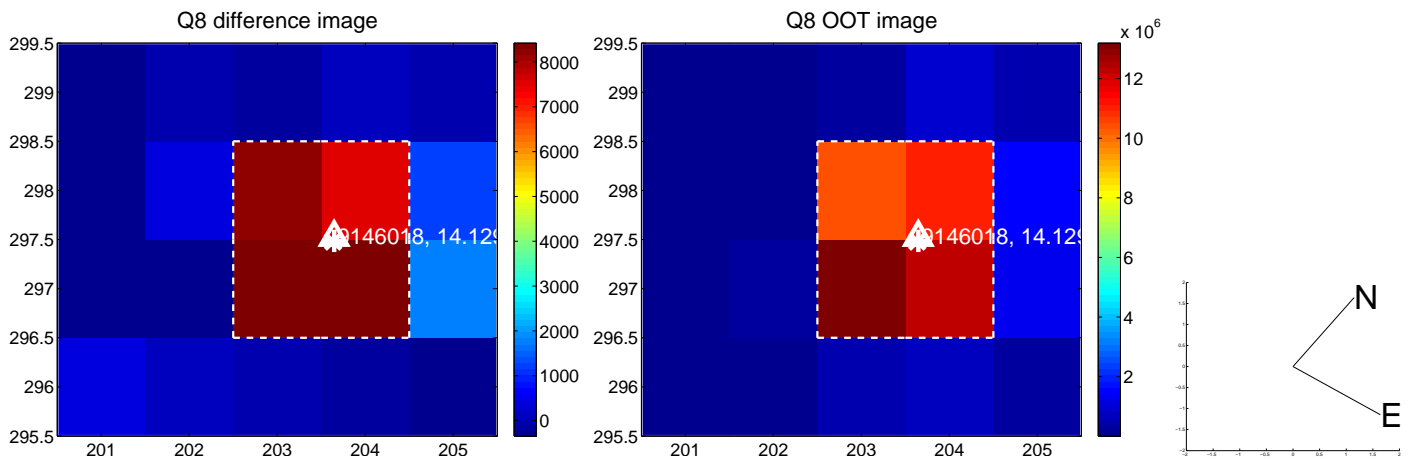
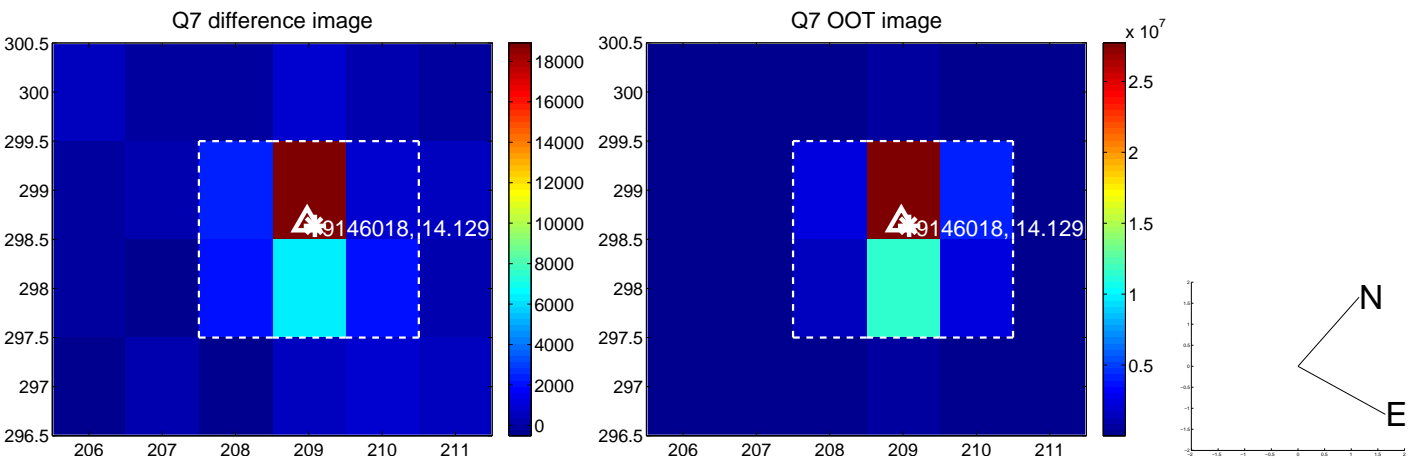
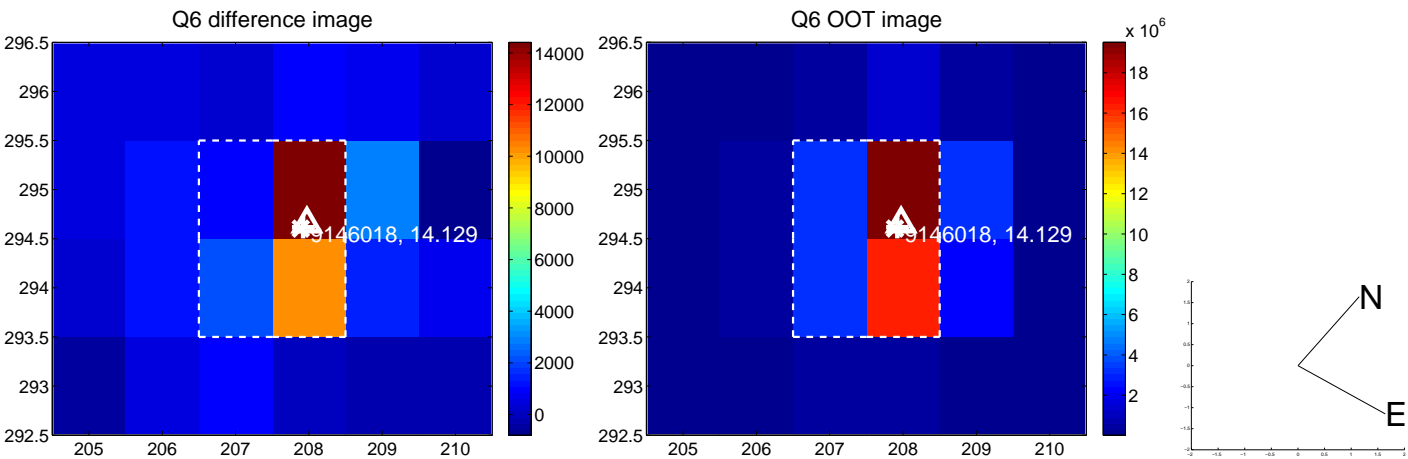
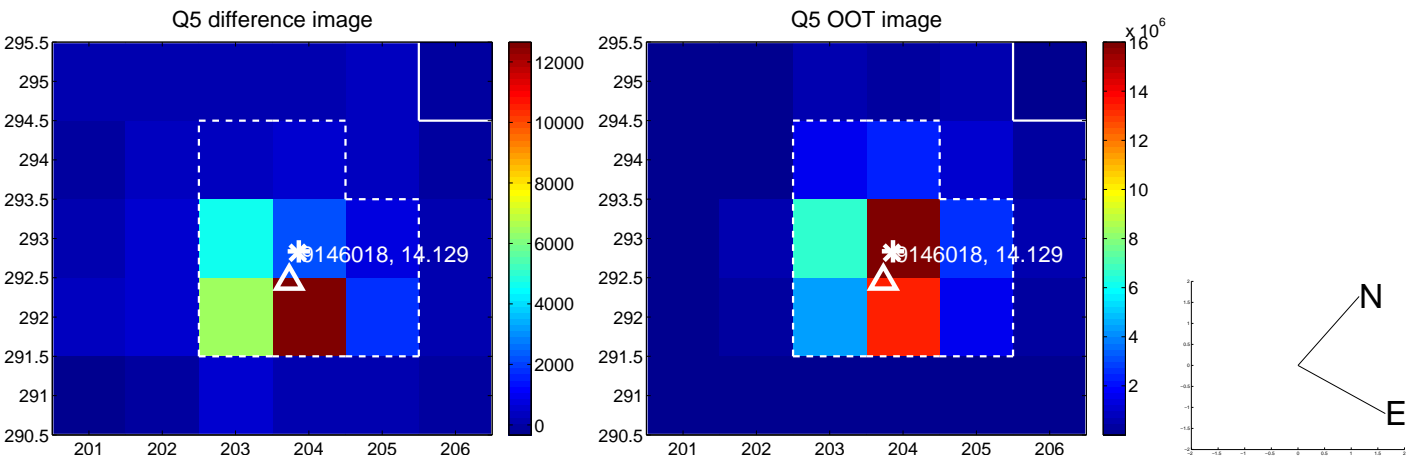


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

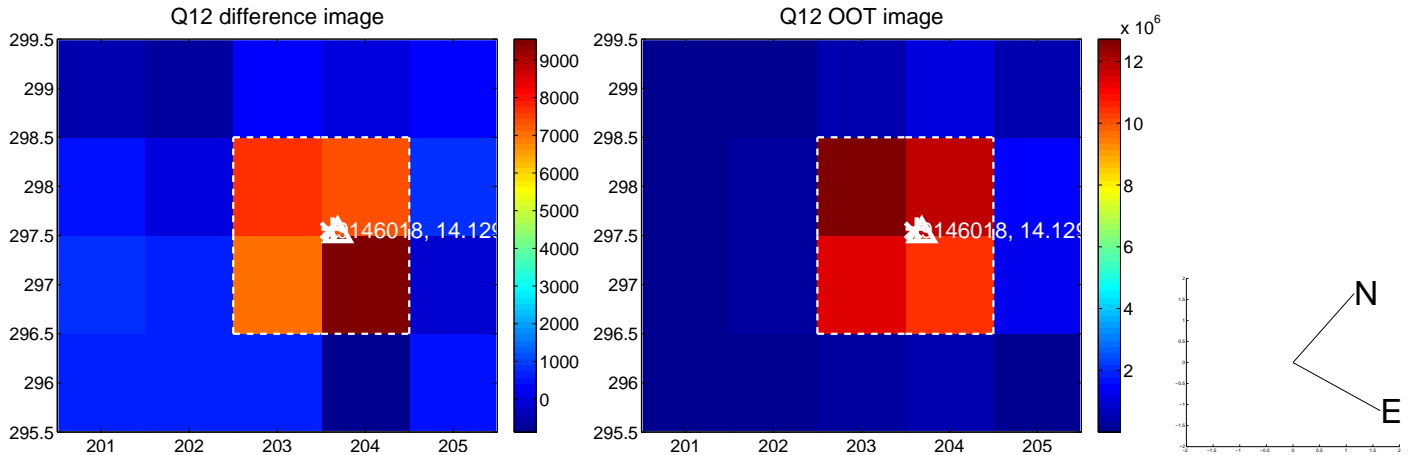
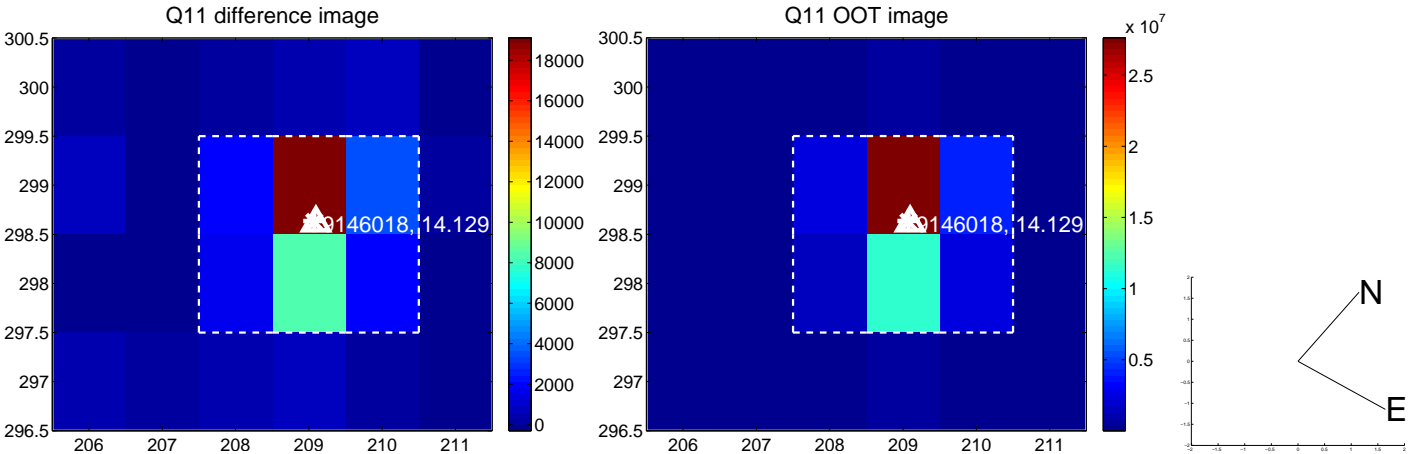
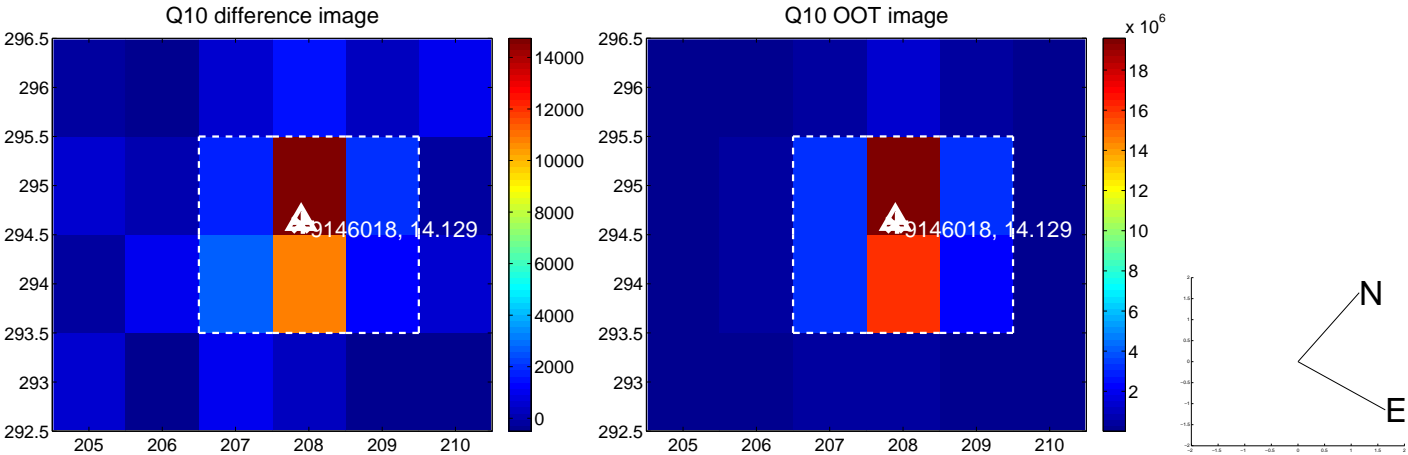
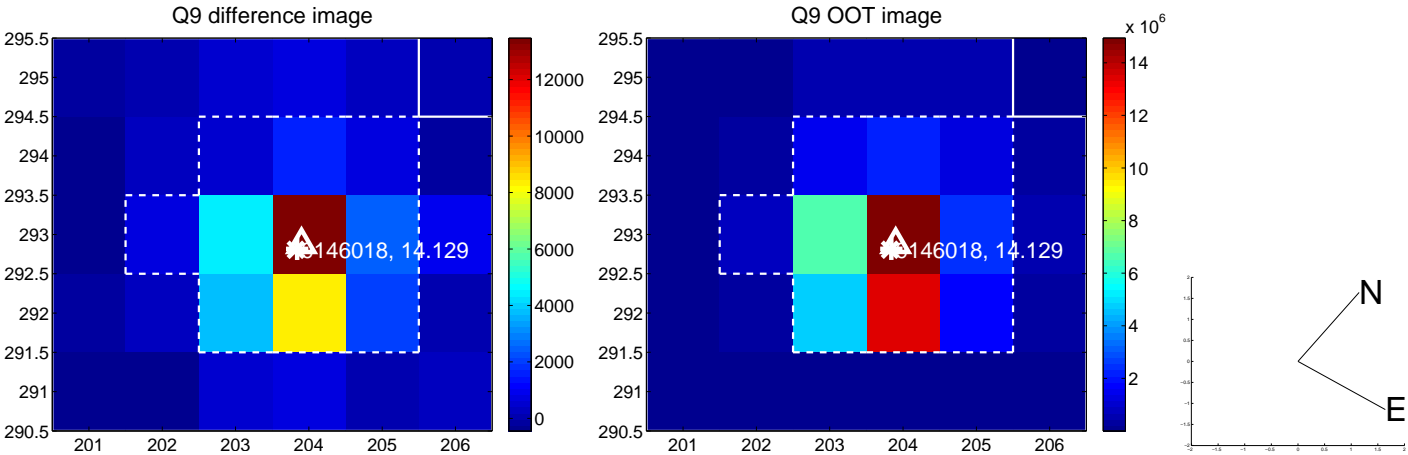
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



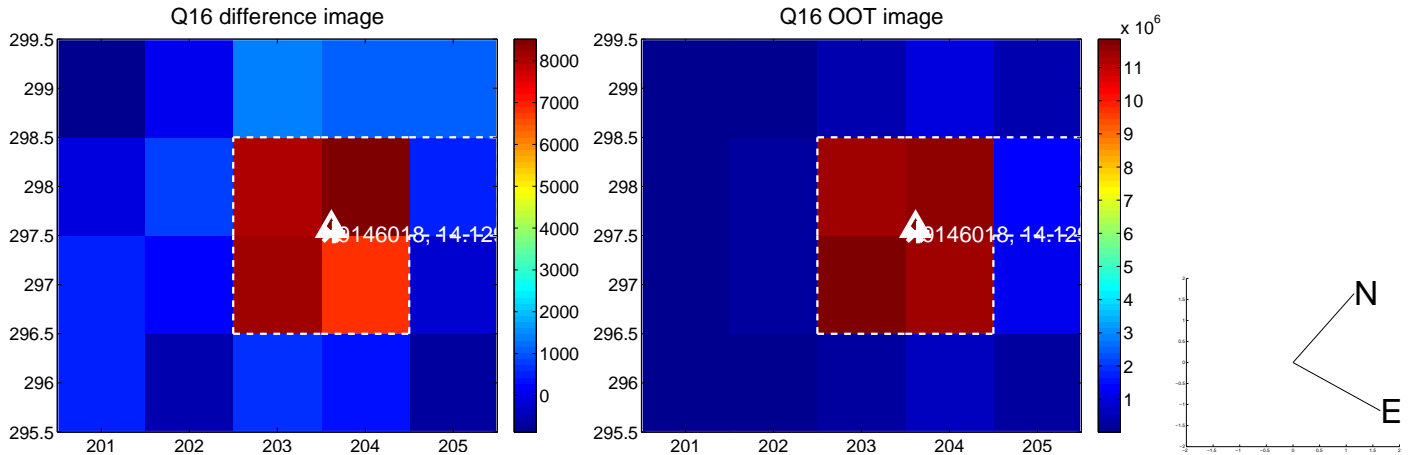
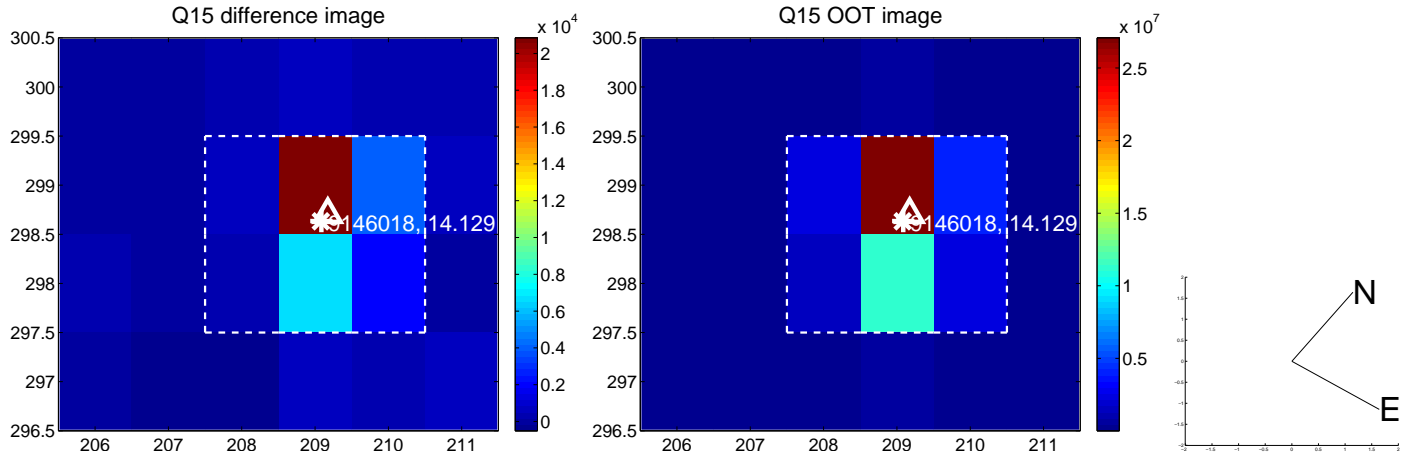
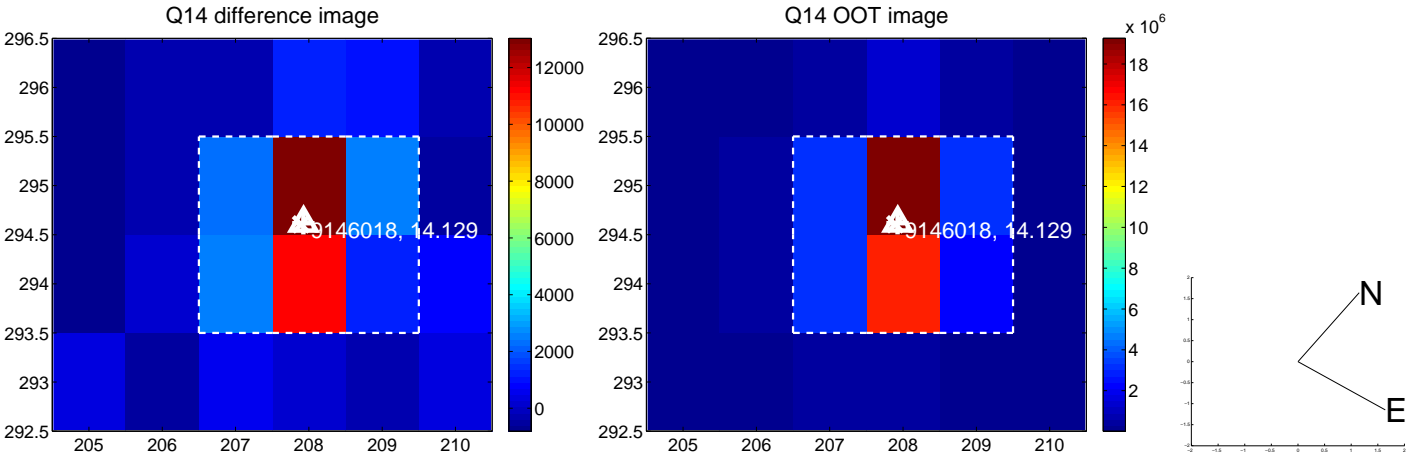
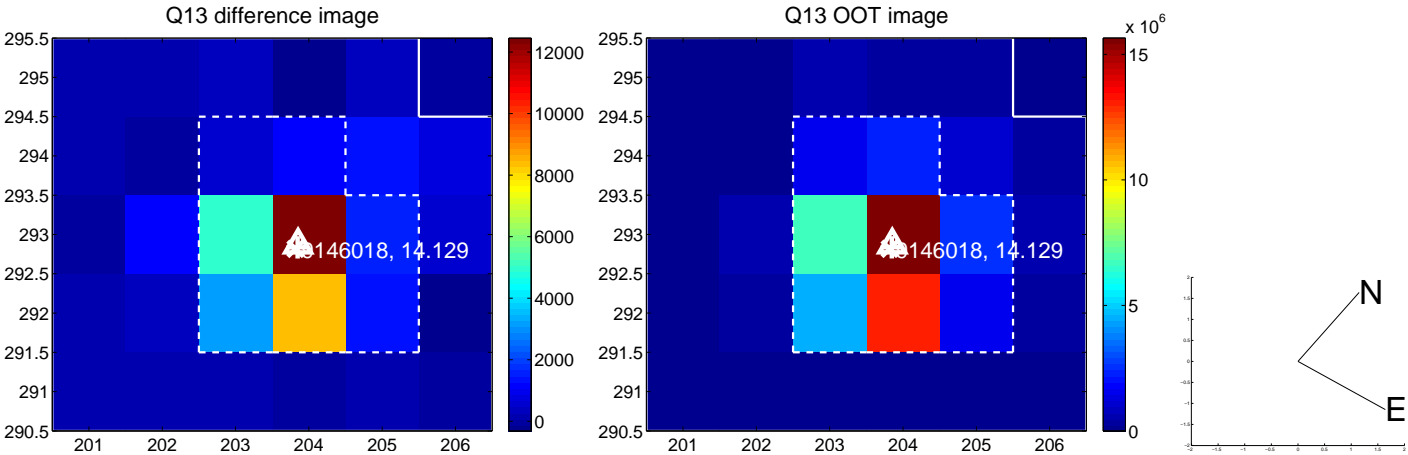
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



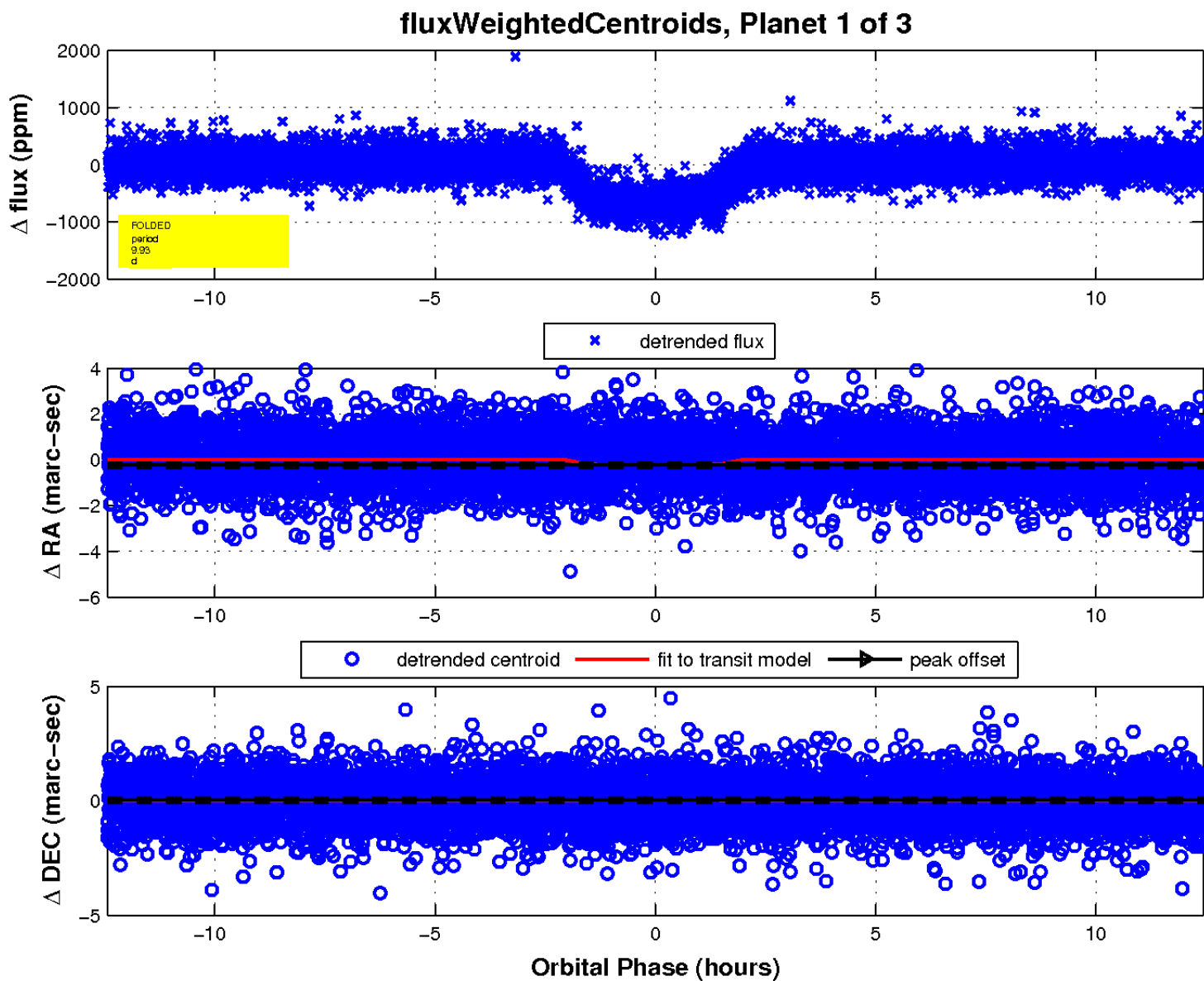
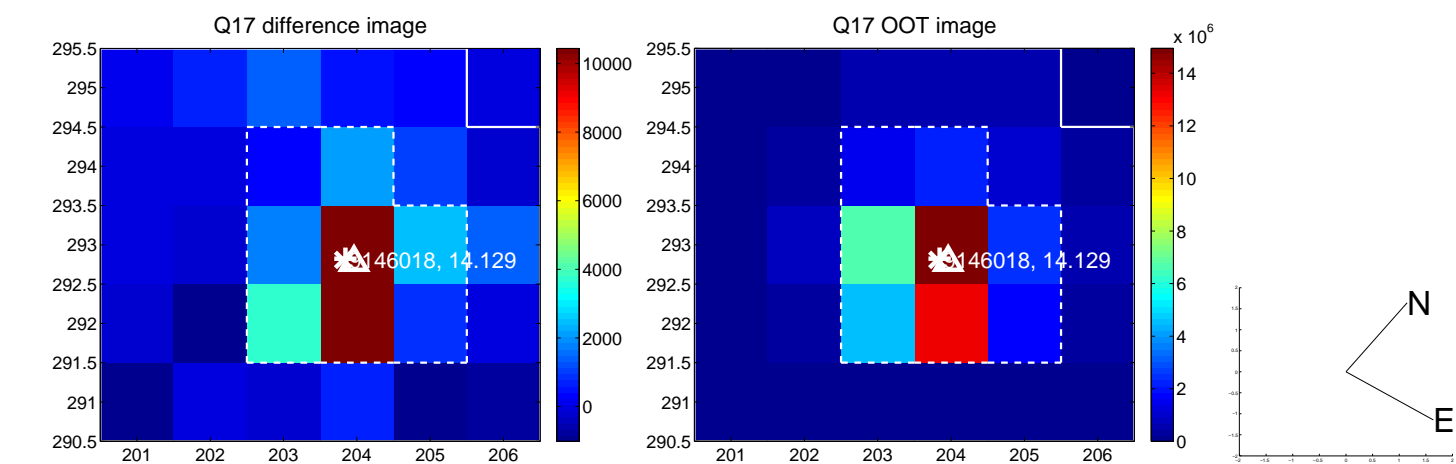
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



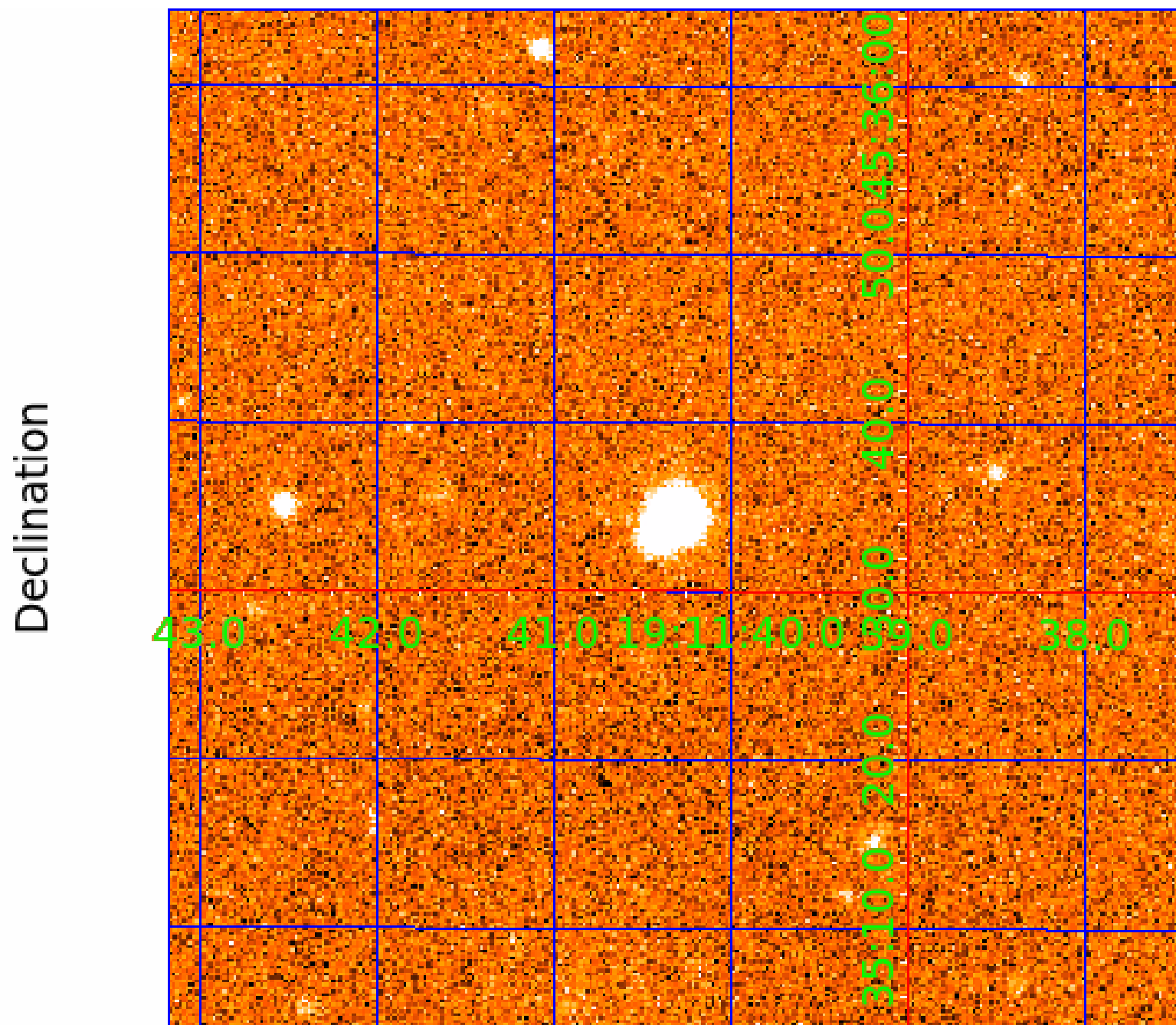
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009146018

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})
009146018-01	OBS	0584.01	9.926728	135.979299	717.6	4.147	76.8	82.1	0.98	5475	3.16	98.50
009146018-02	OBS	0584.02	21.223444	149.151724	591.2	5.094	47.0	50.3	0.98	5475	2.76	35.76
009146018-03	OBS	0584.03	6.470329	136.499763	119.2	3.647	14.9	16.1	0.98	5475	1.43	174.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009146018-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009146018-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009146018-03	OBS	PC	0.93	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.

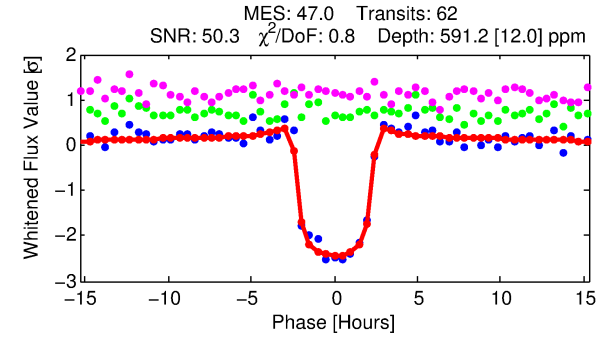
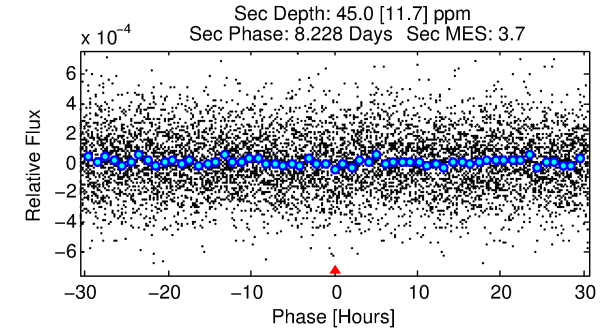
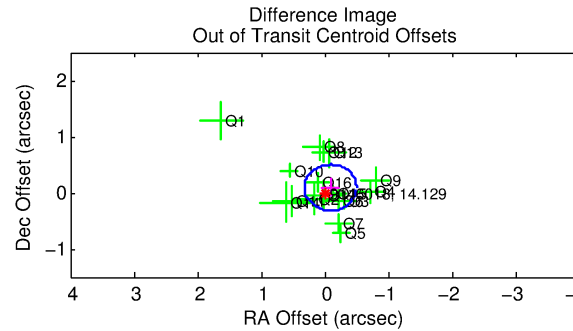
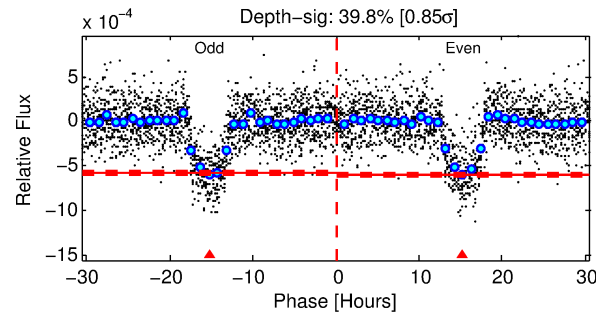
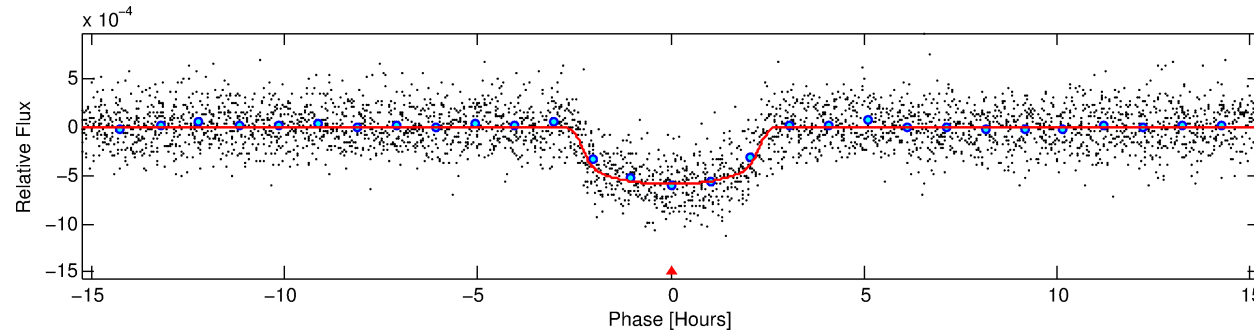
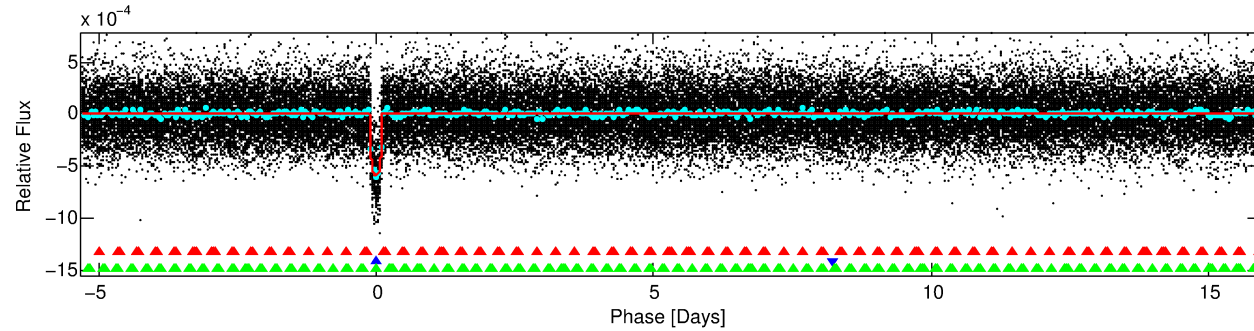
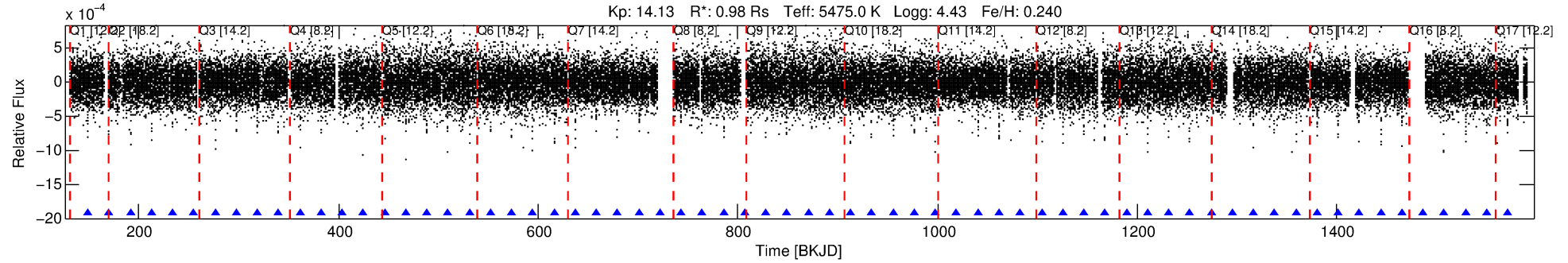
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009146018-02

No Significant Match Found

DV One-Page Summary

KIC: 9146018 Candidate: 2 of 3 Period: 21.223 d
KOI: K00584.02 Name: Kepler-192c Corr: 0.994



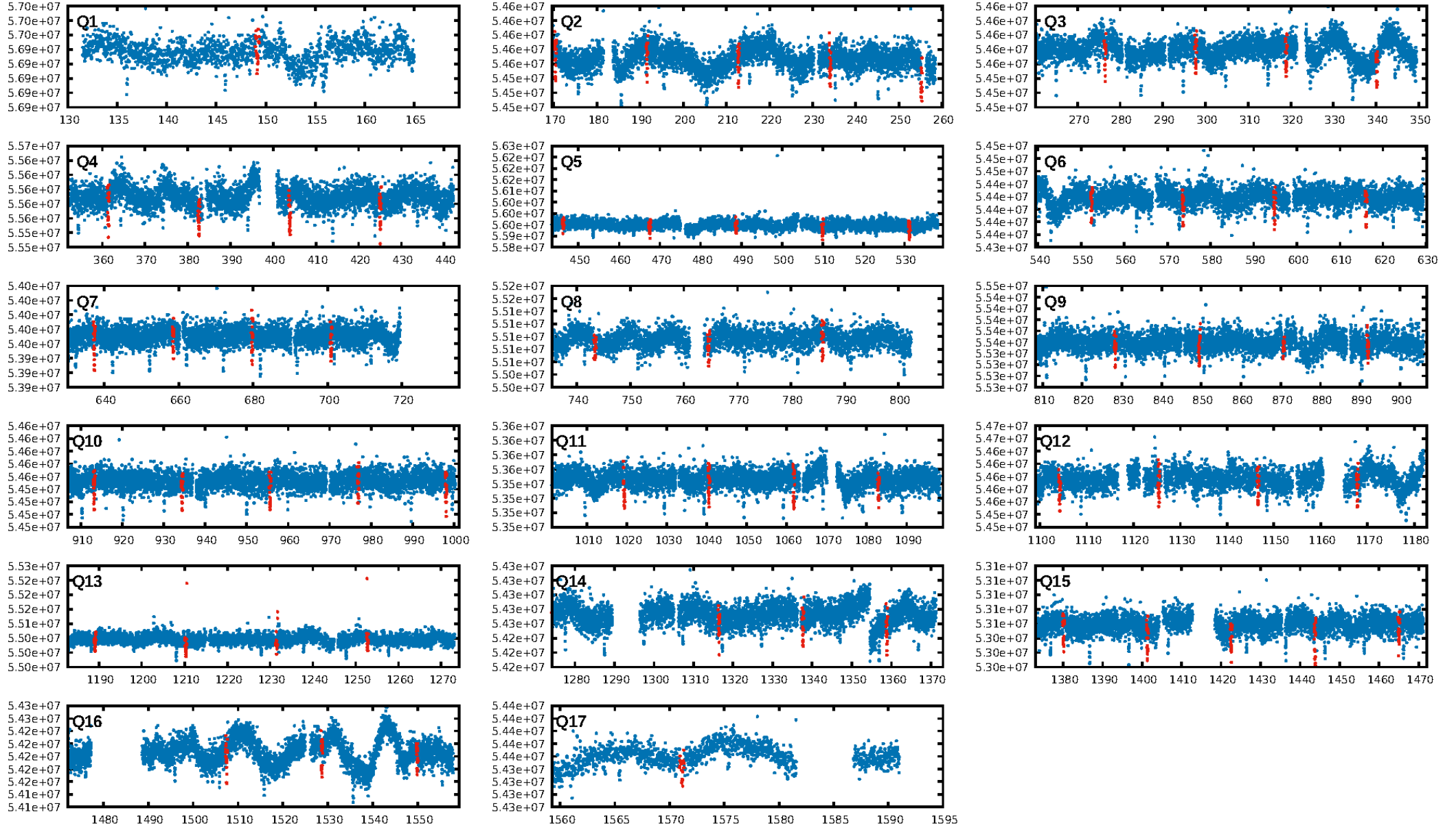
DV Fit Results:

Period = 21.22344 [0.00005] d
Epoch = 149.1517 [0.0019] BKJD
Rp/R* = 0.0257 [0.0017]
a/R* = 18.06 [4.72]
b = 0.85 [0.08]
Seff = 35.76 [7.37]
Teff = 624 [32] K
Rp = 2.76 [0.42] Re
a = 0.1473 [0.0184] AU
Ag = 70.66 [24.55] [2.84 σ]
Teffp = 2795 [211] K [10.19 σ]

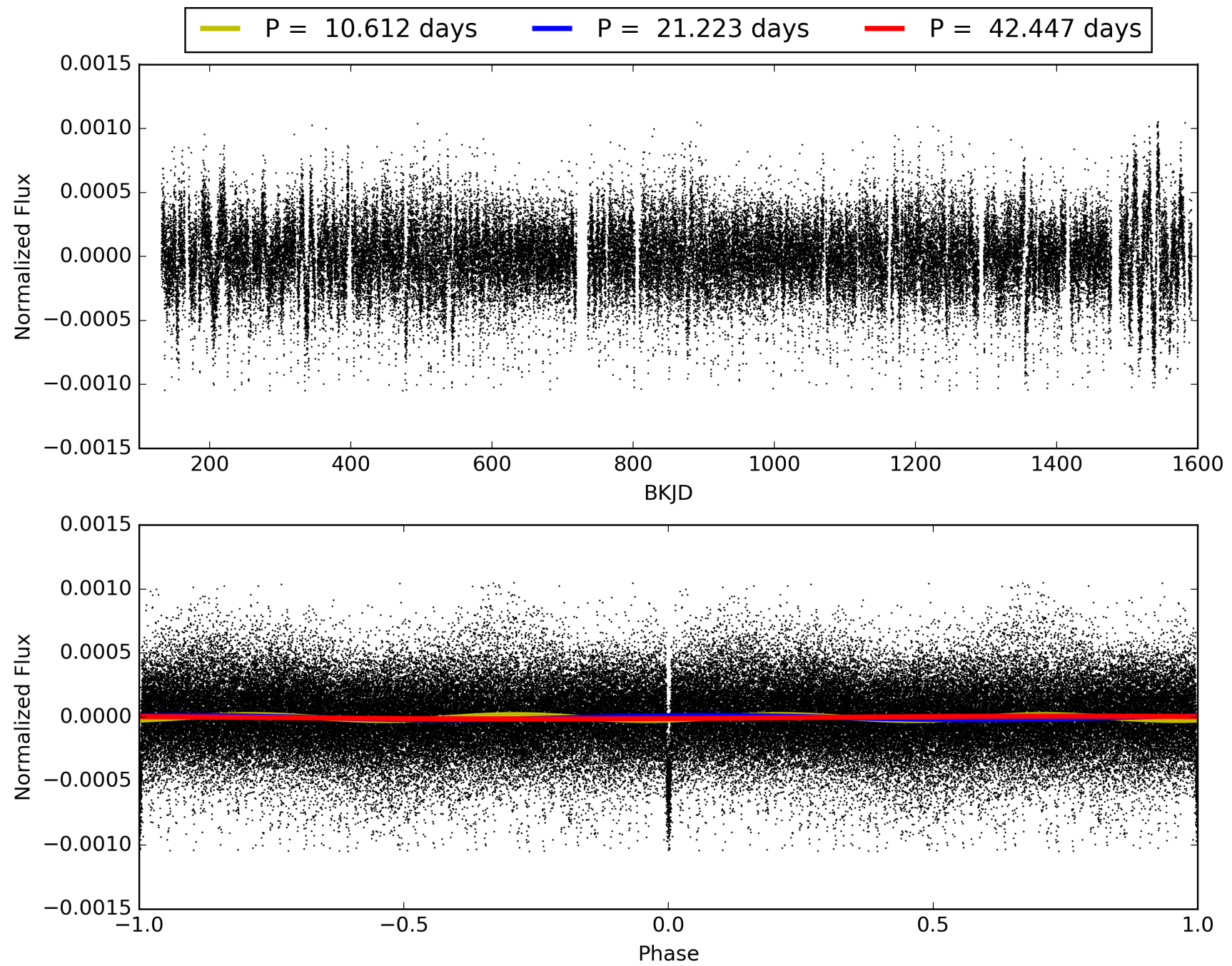
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.28 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 90.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [60/60]
GhostDiagnostic-chr: 6.578
Centroid-sig: 42.1%
Centroid-so: 0.159 arcsec [0.72 σ]
OotOffset-rm: 0.128 arcsec [0.94 σ]
KicOffset-rm: 0.180 arcsec [1.18 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.94 [16/17]

TCE 009146018-02, PDC Light Curves

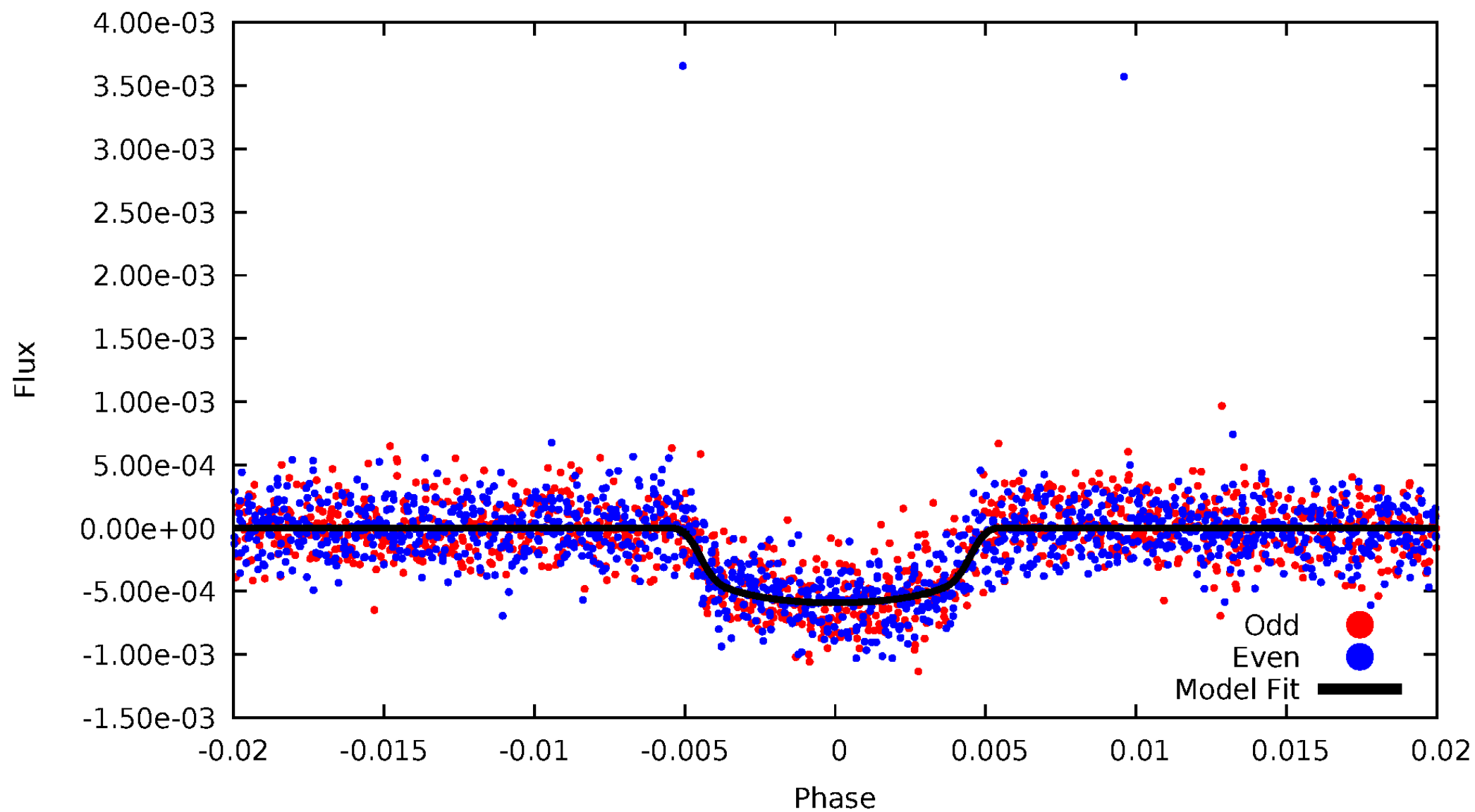


TCE 009146018-02



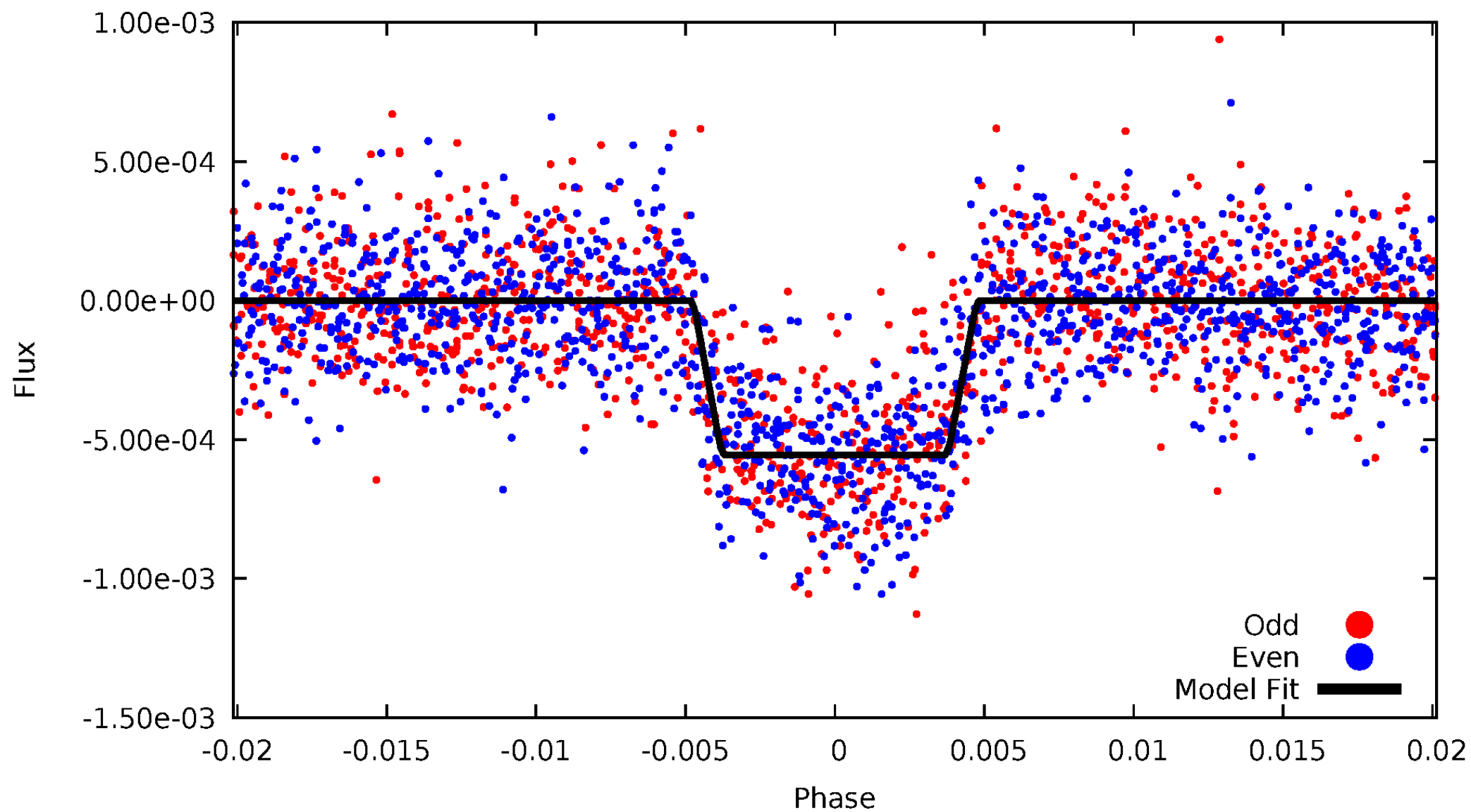
DV Odd/Even

TCE 009146018-02



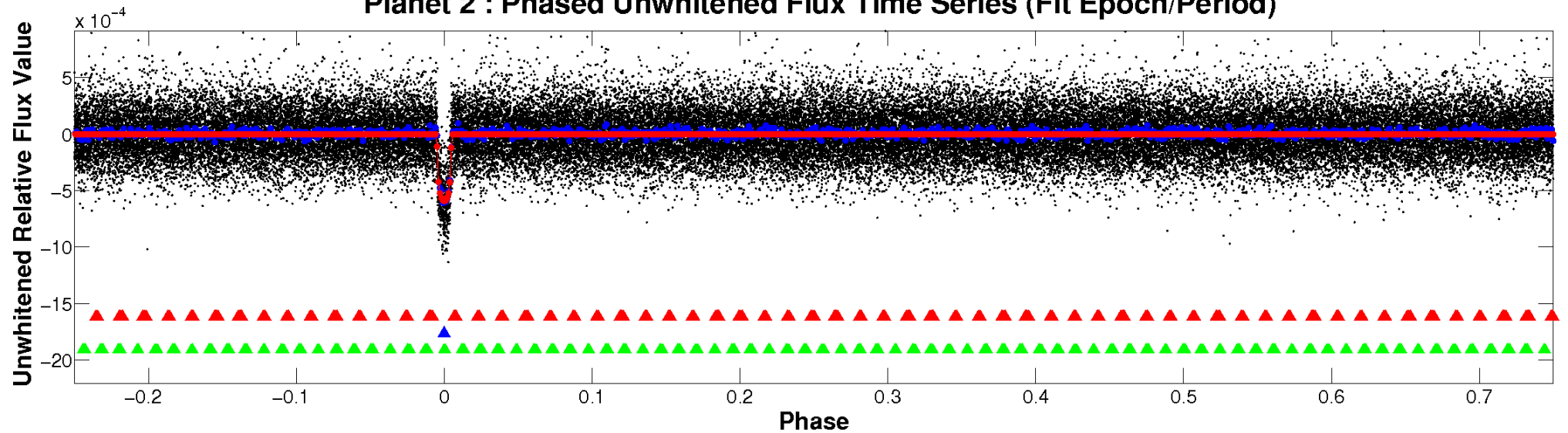
ALT Odd/Even

TCE 009146018-02

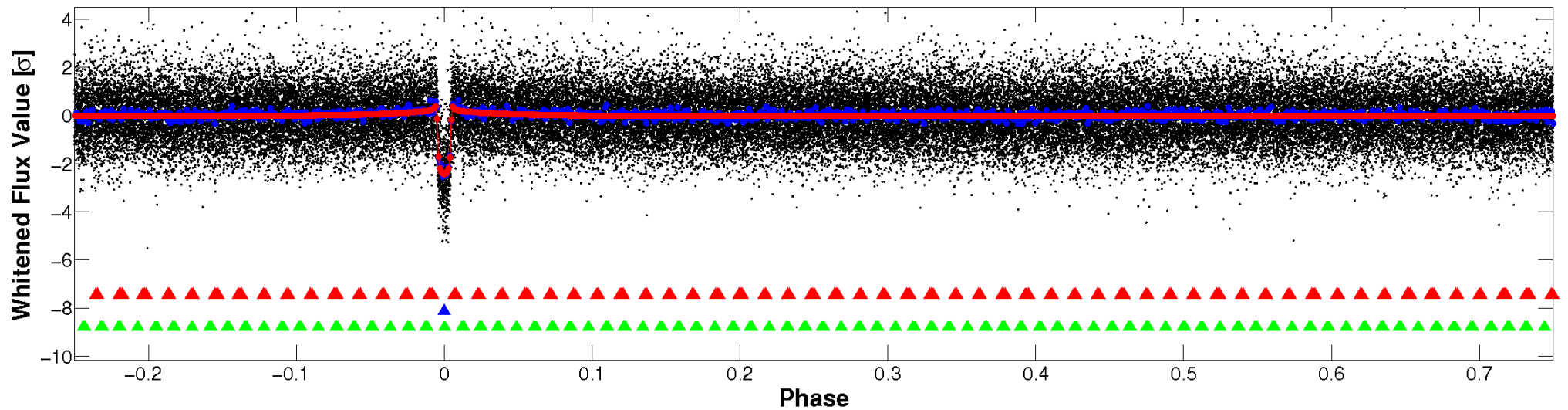


Non-Whitened Vs. Whitened Light Curve

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

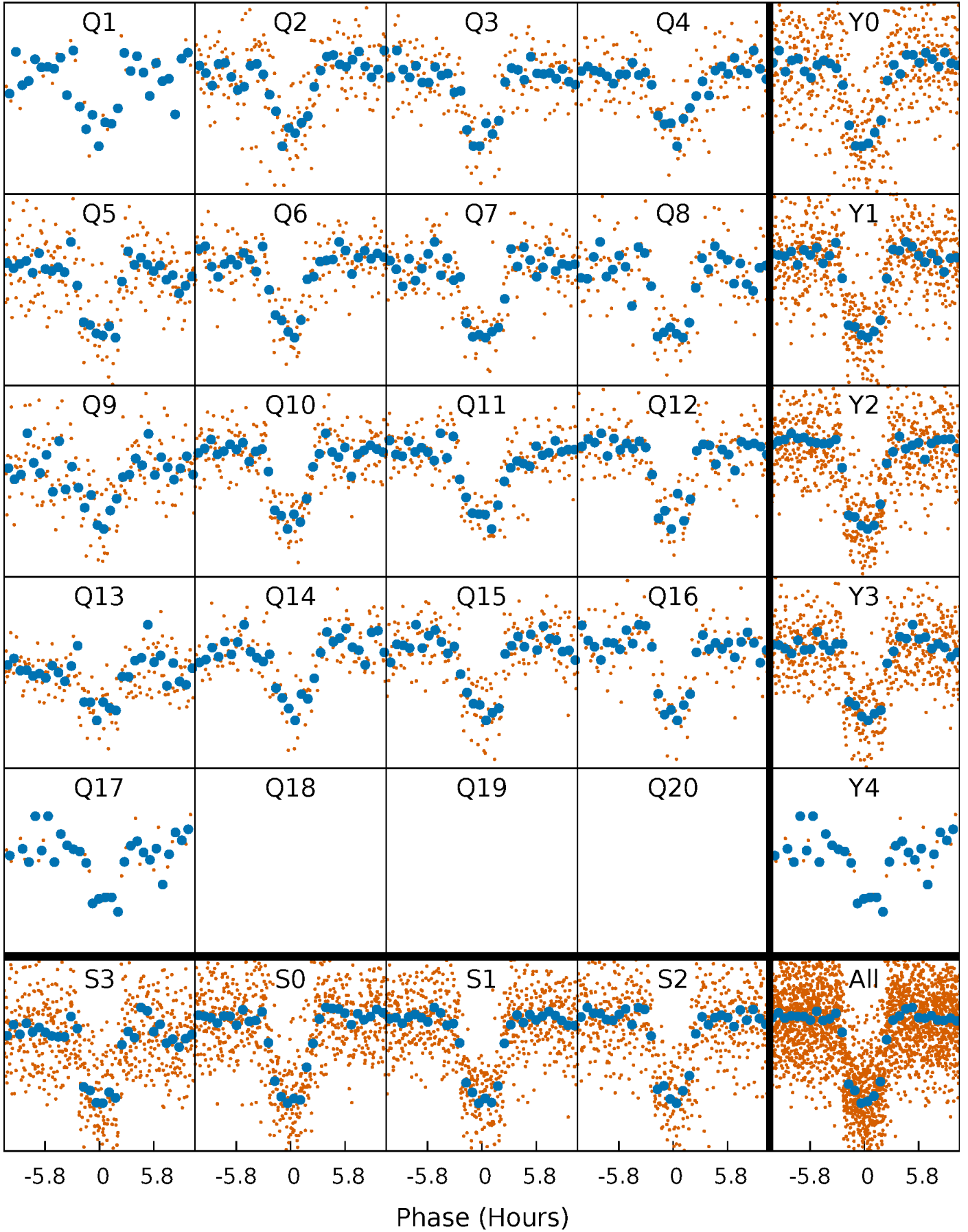


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



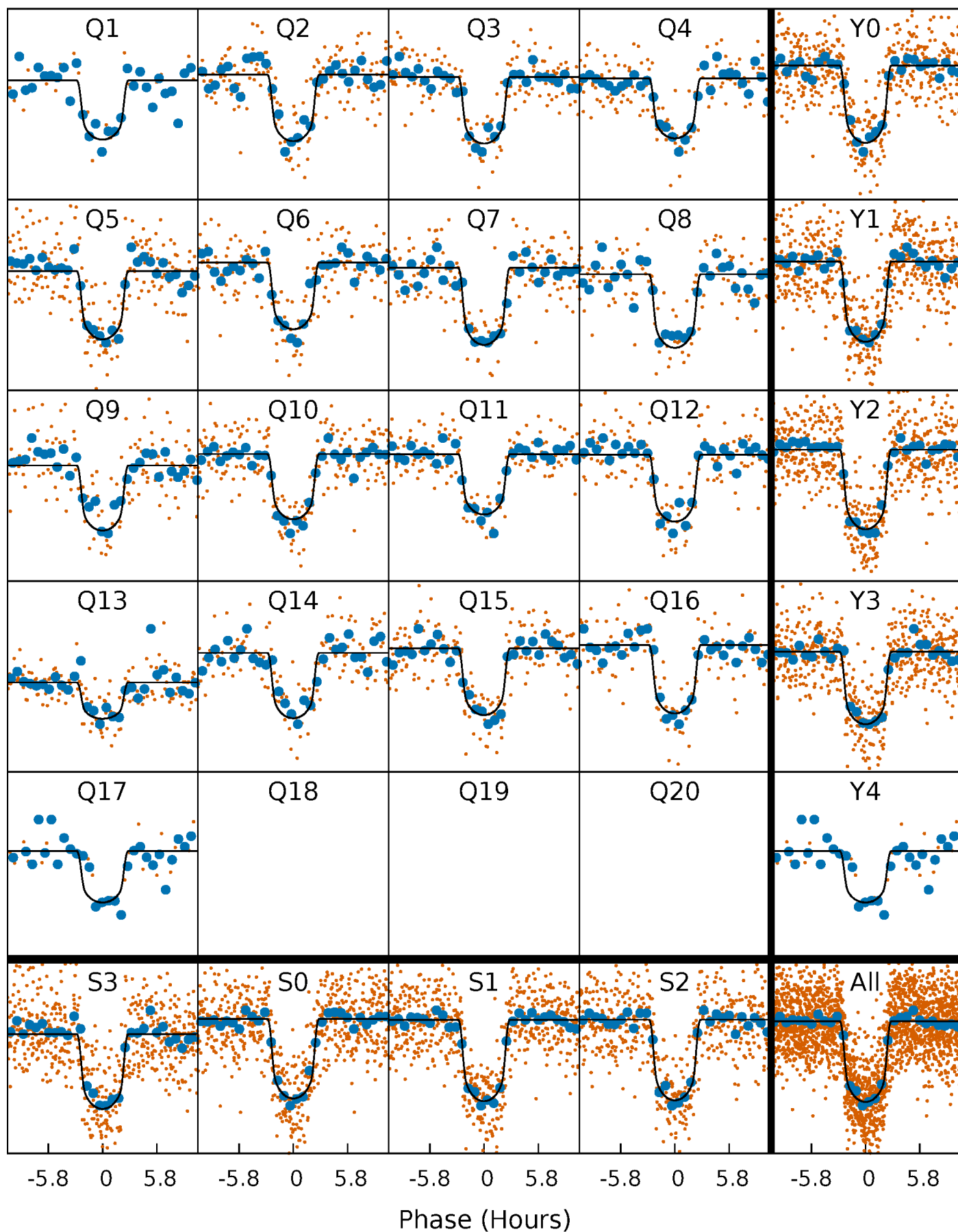
PDC Quarter-Phased Transit Curves

TCE 009146018-02 P= 21.223444 Days $T_0=149.151724$ (BKJD)



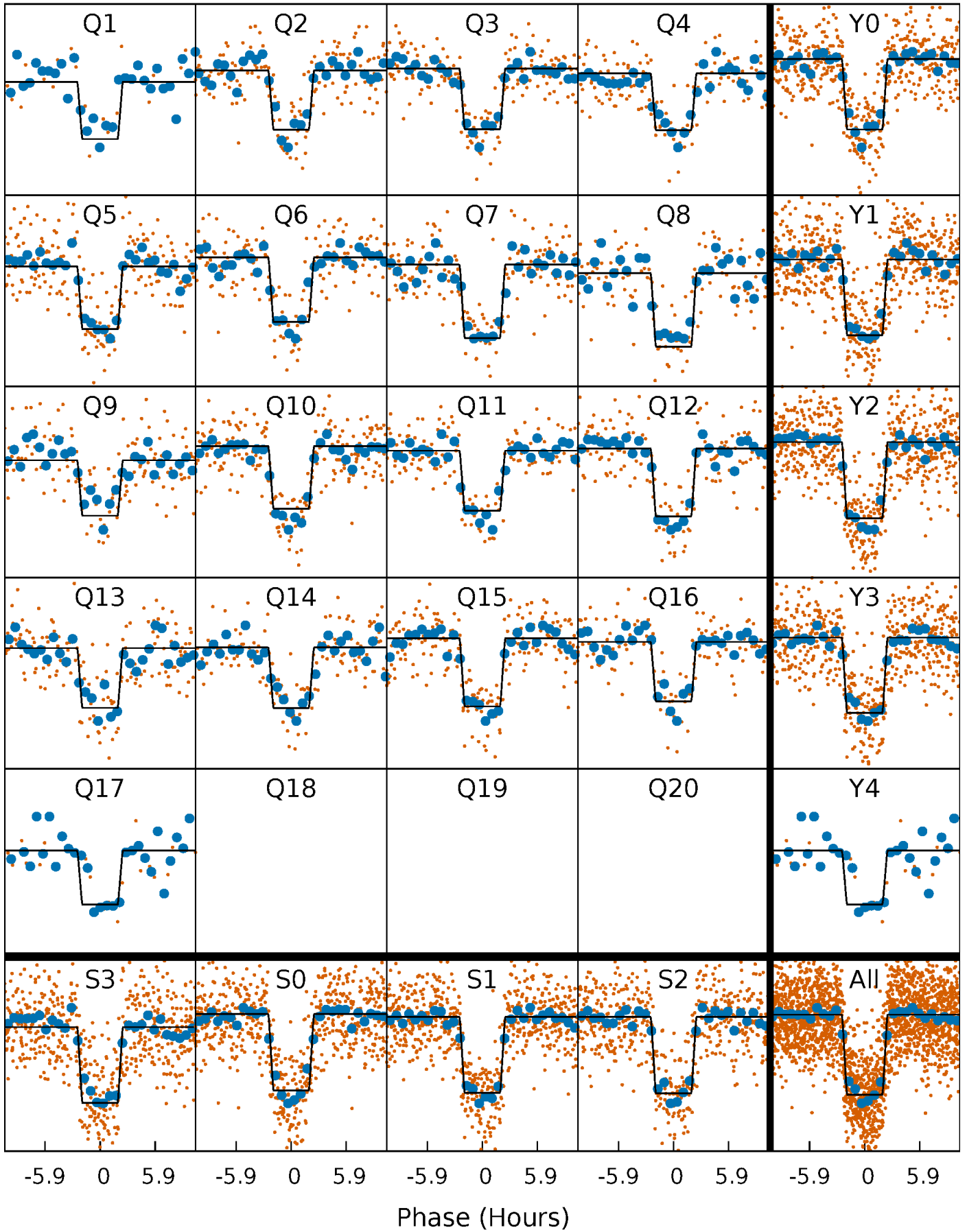
DV Quarter-Phased Transit Curves

TCE 009146018-02 P= 21.223444 Days $T_0=149.151724$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

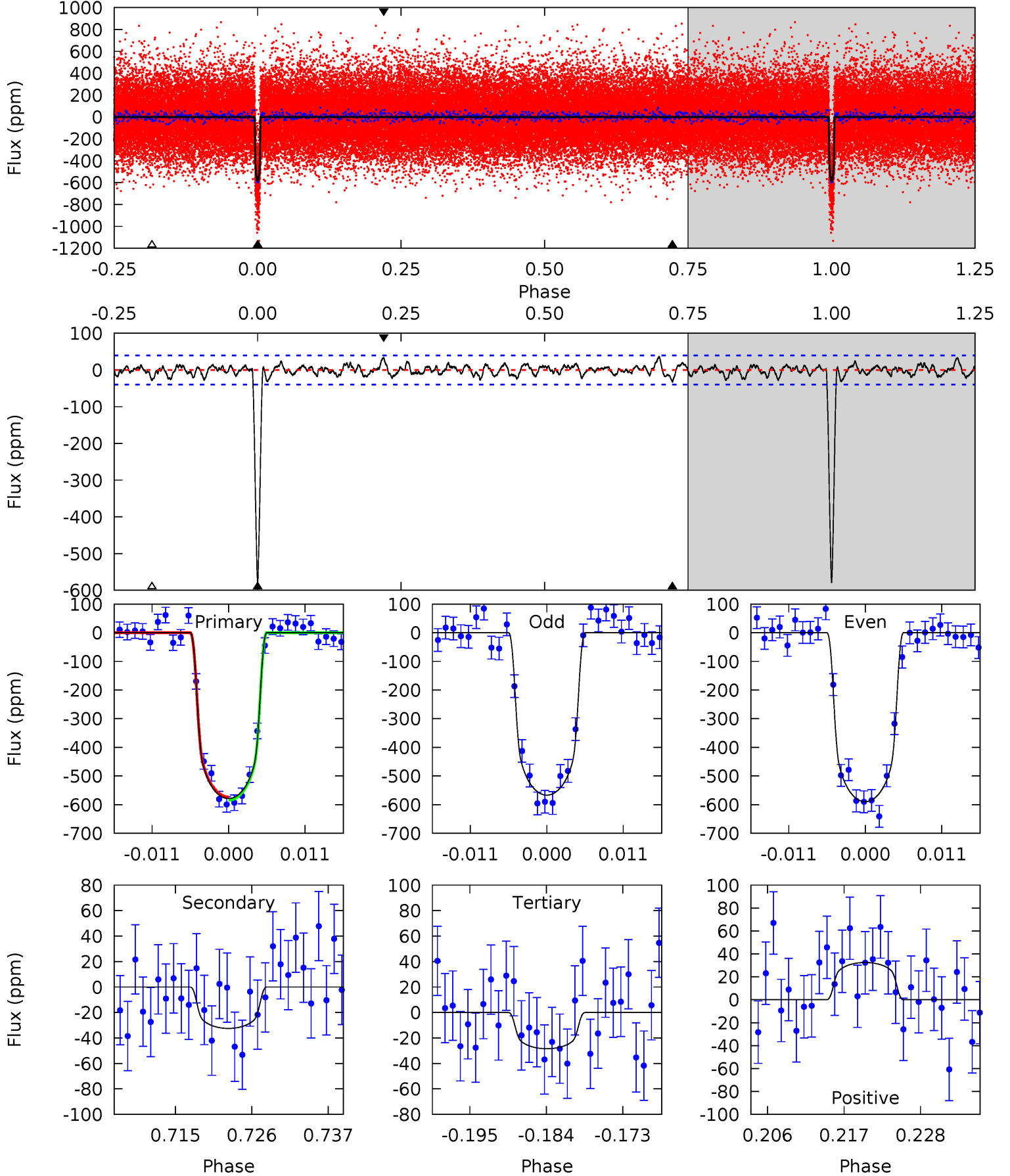
TCE 009146018-02 P= 21.223416 Days $T_0=149.152898$ (BKJD)



DV Model-Shift Uniqueness Test

009146018-02, $P = 21.223444$ Days, $E = 127.928280$ Days

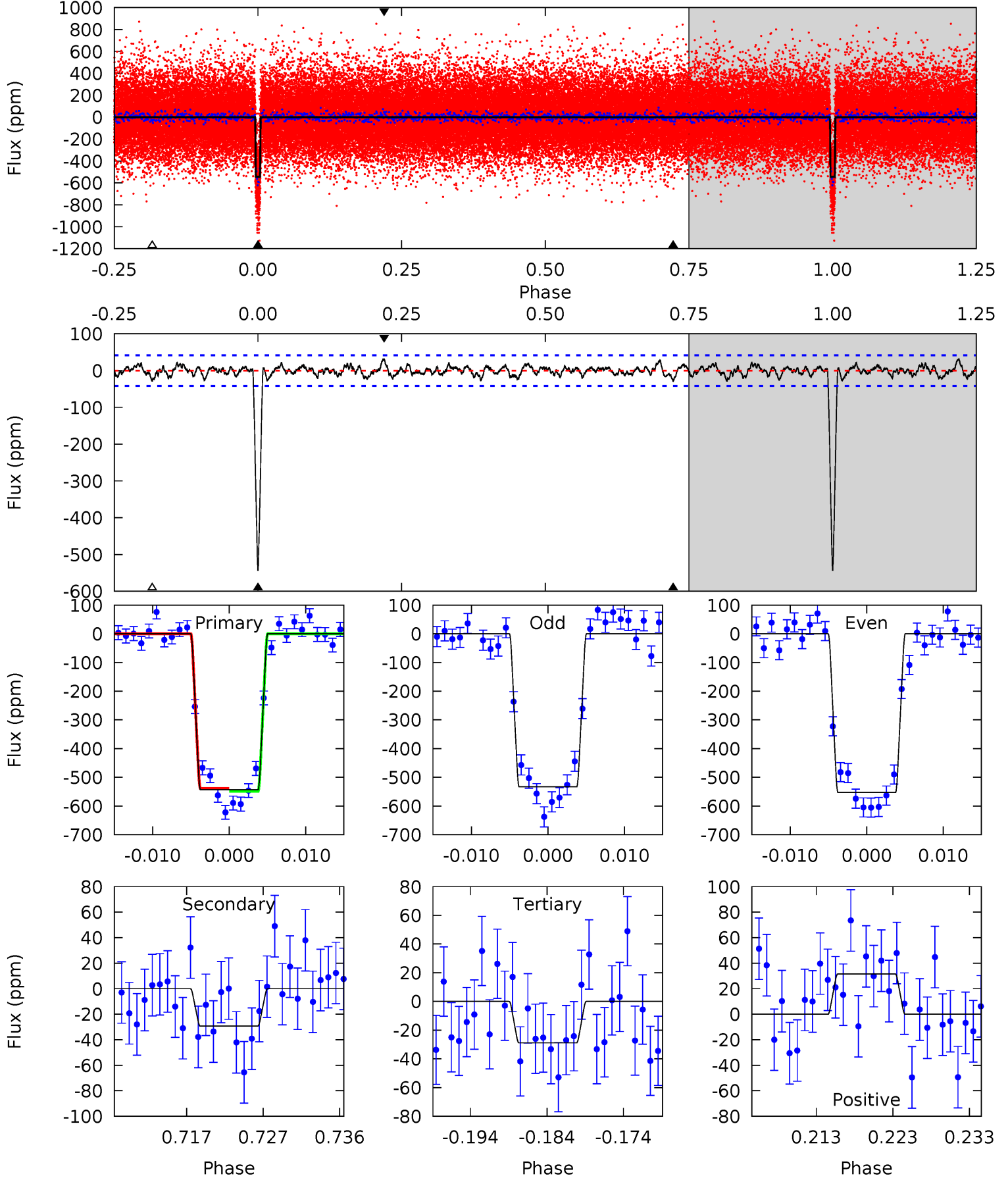
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.3	4.12	3.60	4.12	5.01	2.55	1.38	69.7	69.2	0.52	0.00	1.44	0.99	0.06	0.69



Alt Model-Shift Uniqueness Test

009146018-02, P = 21.223416 Days, E = 127.929482 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
65.4	3.52	3.48	3.79	5.03	2.59	1.20	61.9	61.6	0.05	-0.27	1.19	1.00	0.05	0.60



Stellar Parameters For KIC 009146018

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5475^{+109}_{-109}	$4.430^{+0.081}_{-0.108}$	$0.240^{+0.150}_{-0.150}$	$0.982^{+0.137}_{-0.080}$	$0.947^{+0.056}_{-0.046}$	$1.407^{+0.467}_{-0.414}$
	+2%/-2%	+2%/-2%	+62%/-62%	+14%/-8%	+6%/-5%	+33%/-29%
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 009146018-02 / KOI 0584.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-33 ± 8	$2.78^{+0.26}_{-0.26}$	873^{+38}_{-30}	3164^{+138}_{-139}	50^{+17}_{-14}
Alt.	-29 ± 8	$2.55^{+0.26}_{-0.24}$	872^{+37}_{-29}	3189^{+164}_{-157}	53^{+20}_{-16}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

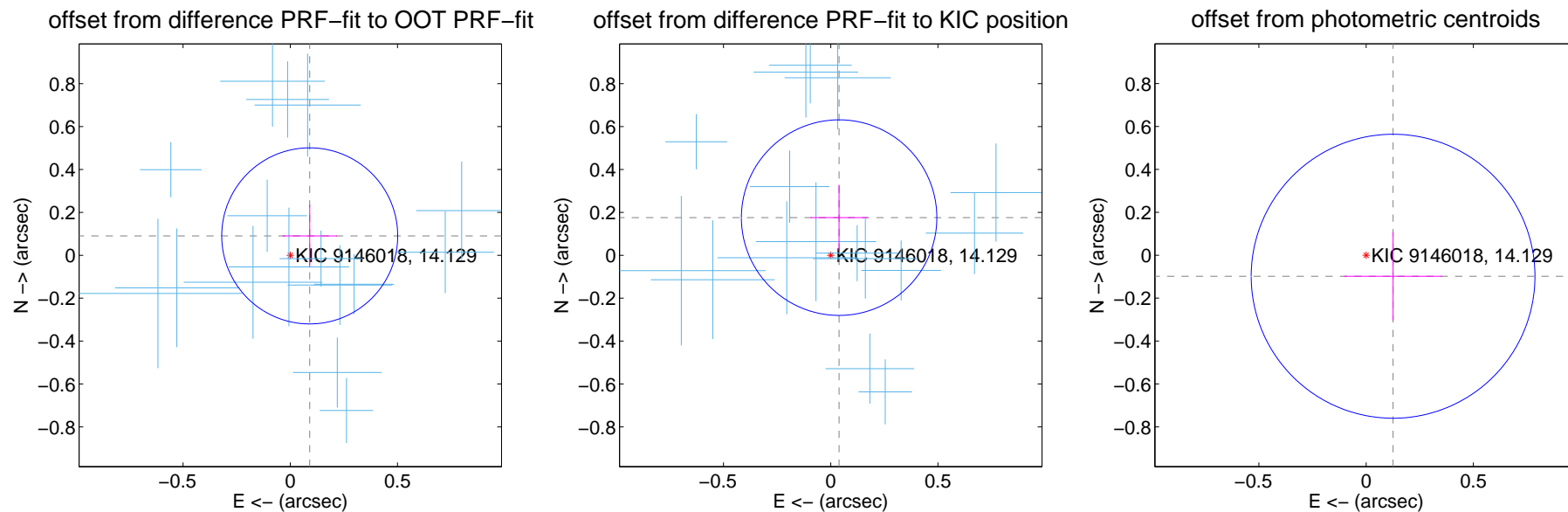
DV Centroid Data

Supplemental centroid analysis for 009146018-02. Kepler magnitude: 14.13. Transit SNR 50.32

There are 17 quarters with good PRF difference image offsets

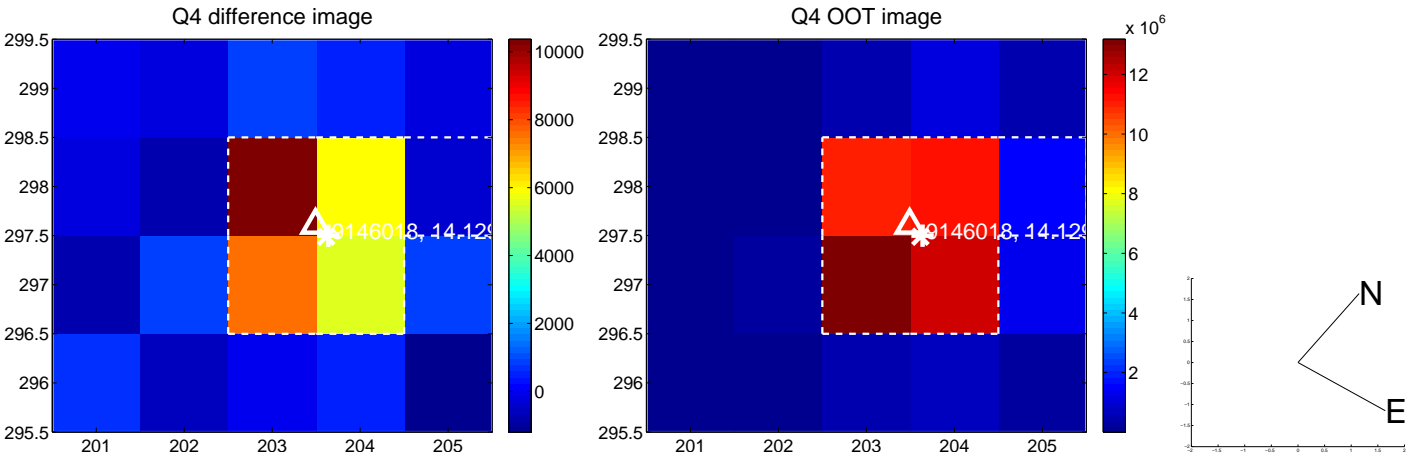
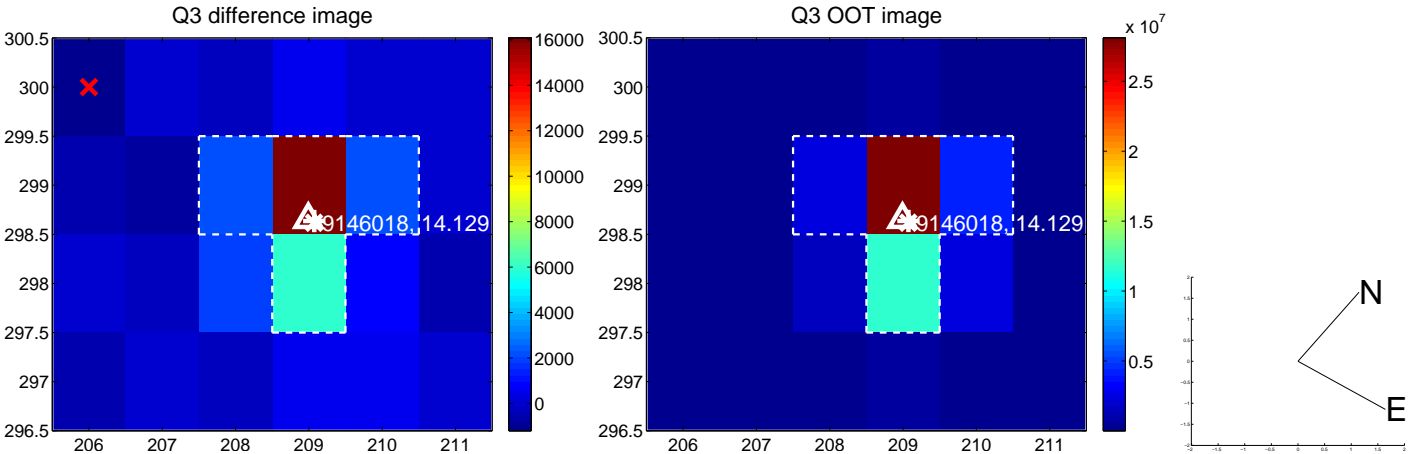
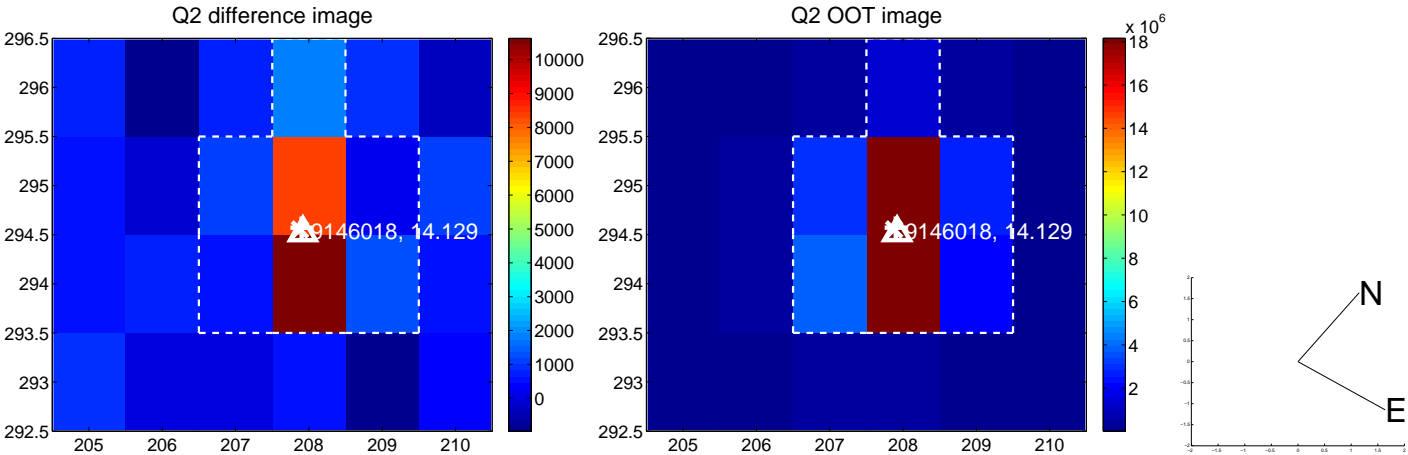
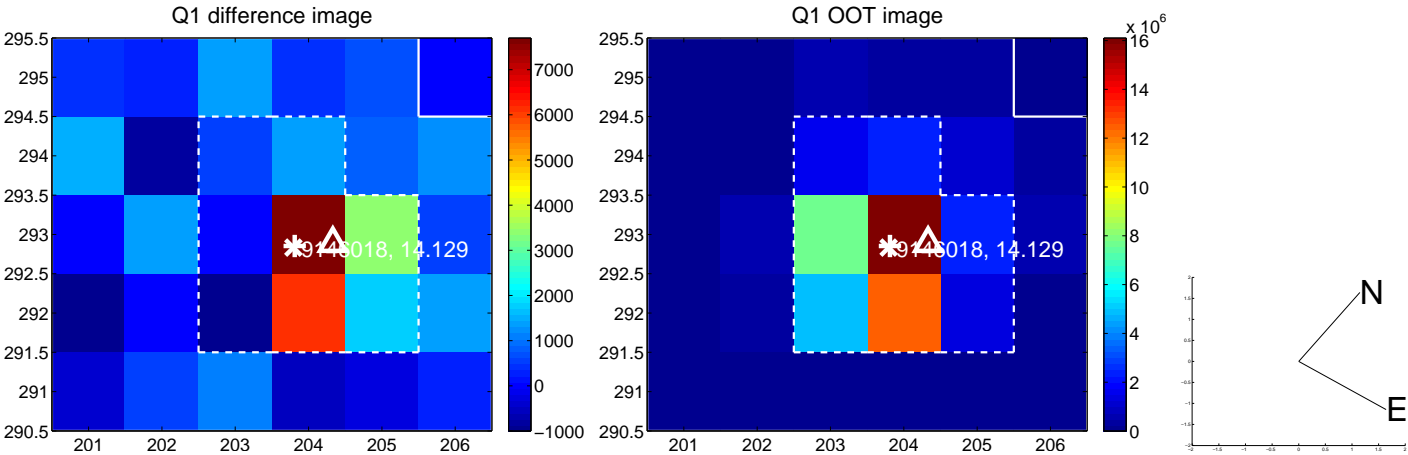
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.128 ± 0.137	0.94	-0.091 ± 0.128	0.090 ± 0.145
PRF-fit source offset from KIC position	0.180 ± 0.152	1.18	-0.039 ± 0.133	0.176 ± 0.153
photometric centroid source offset	0.16 ± 0.22	0.72	-0.13 ± 0.23	-0.10 ± 0.21

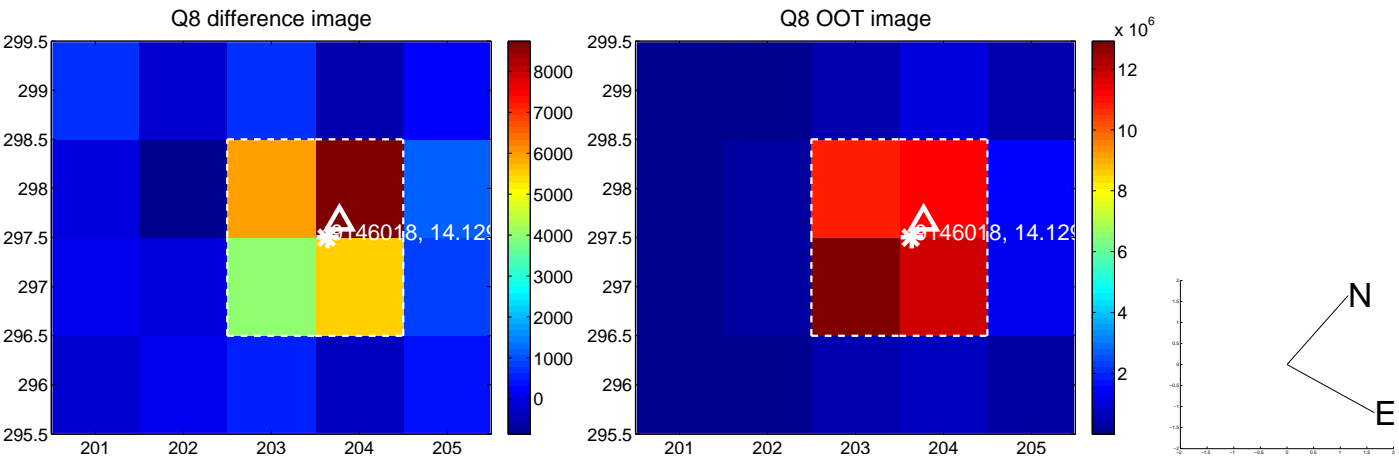
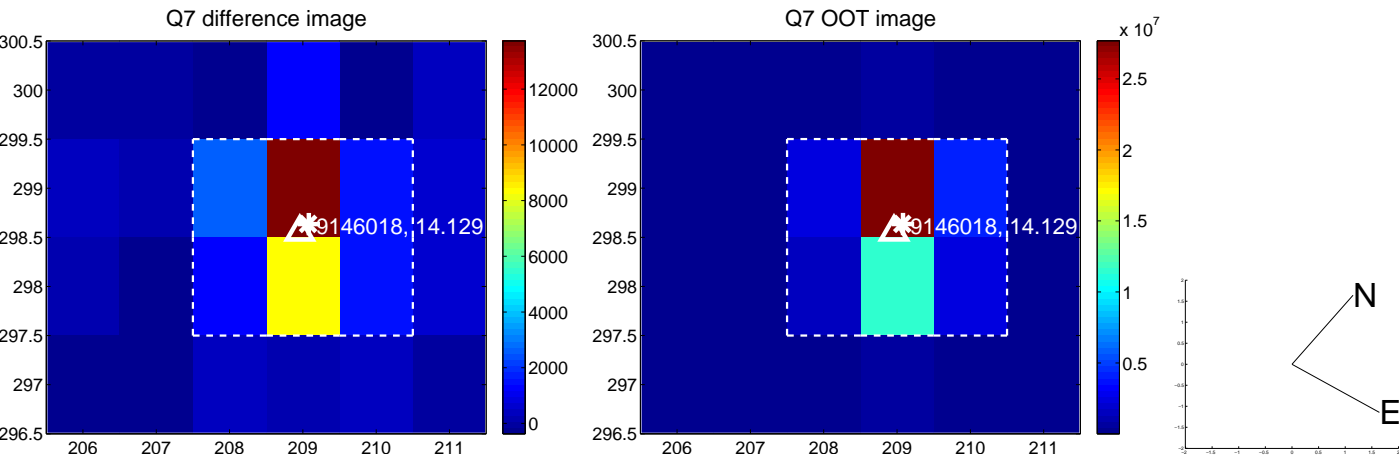
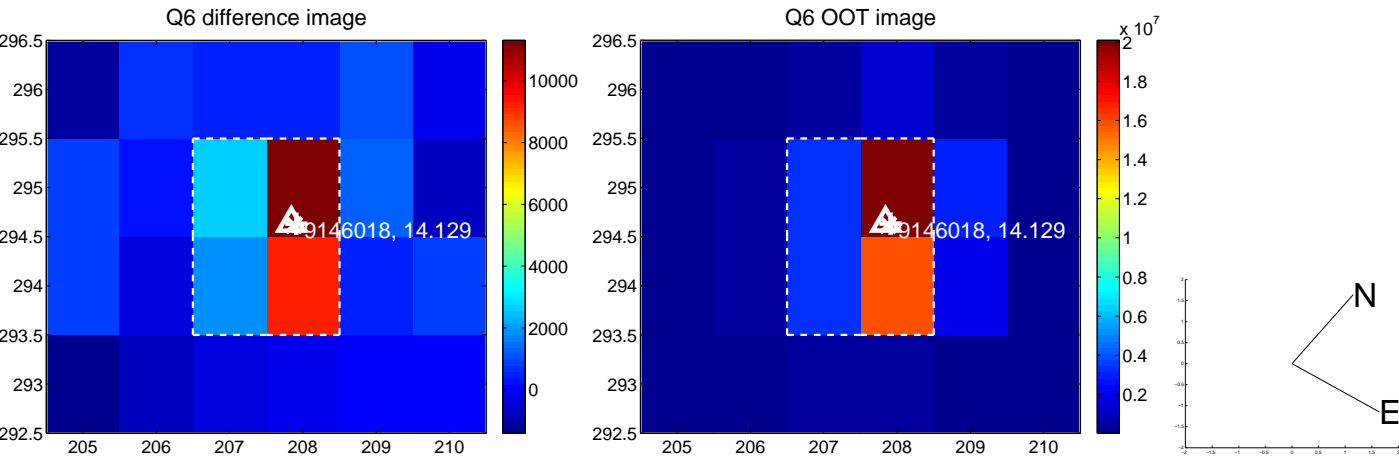
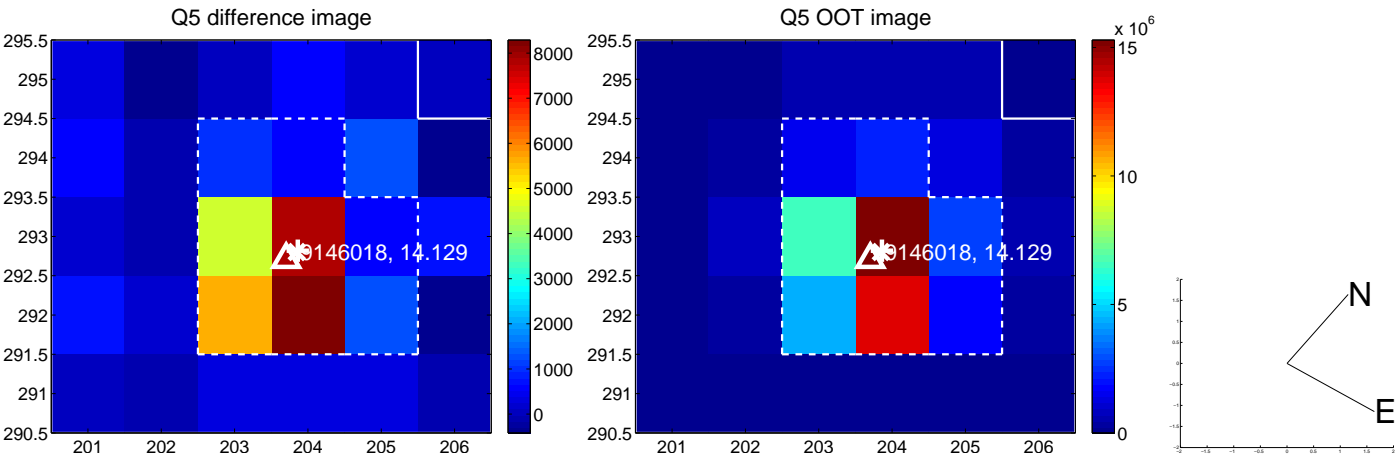


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

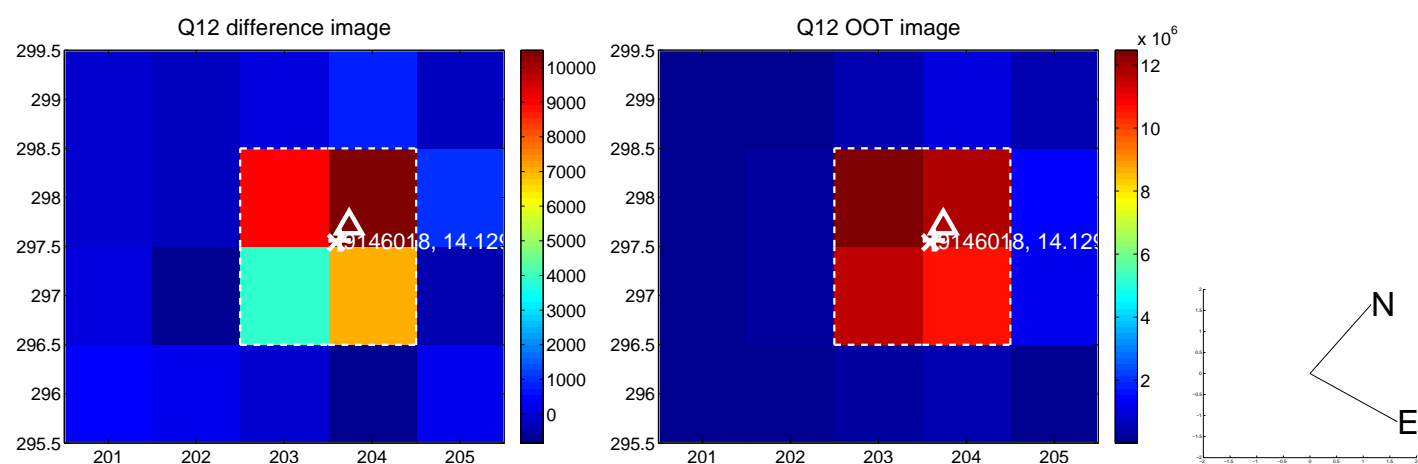
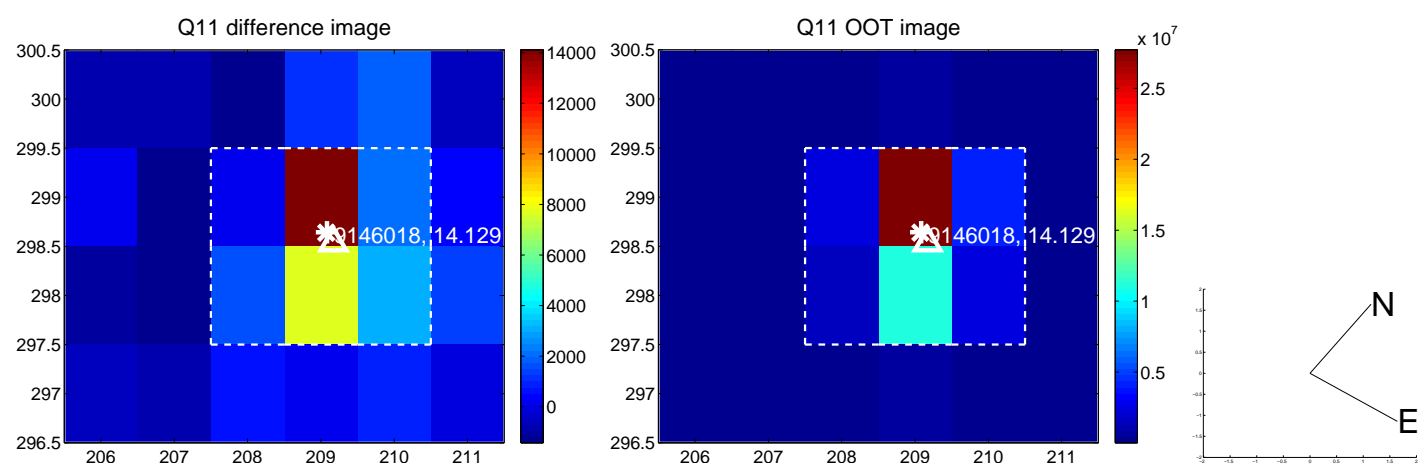
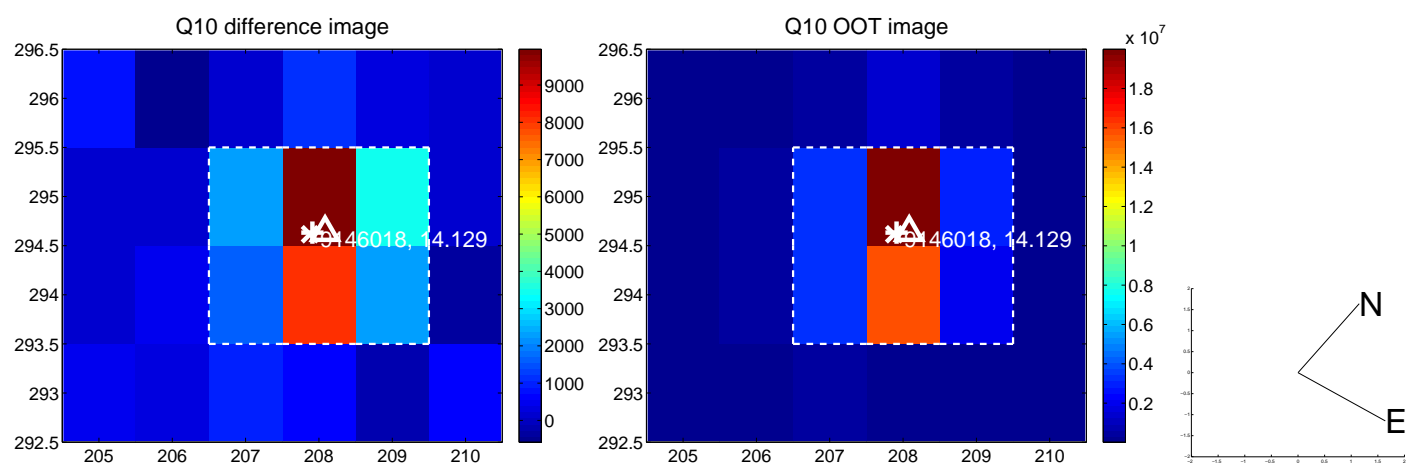
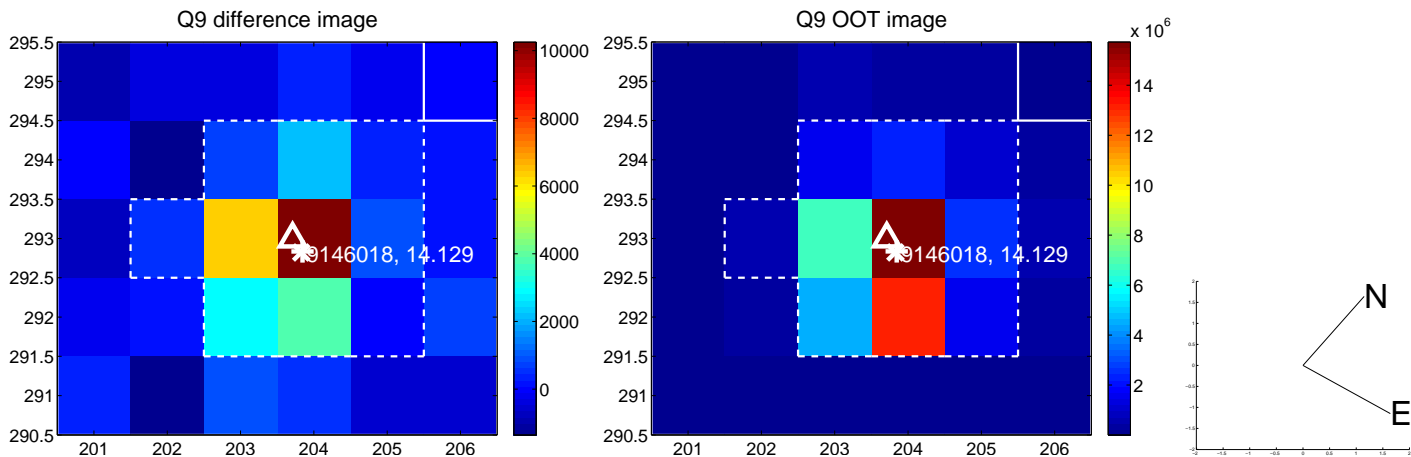
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



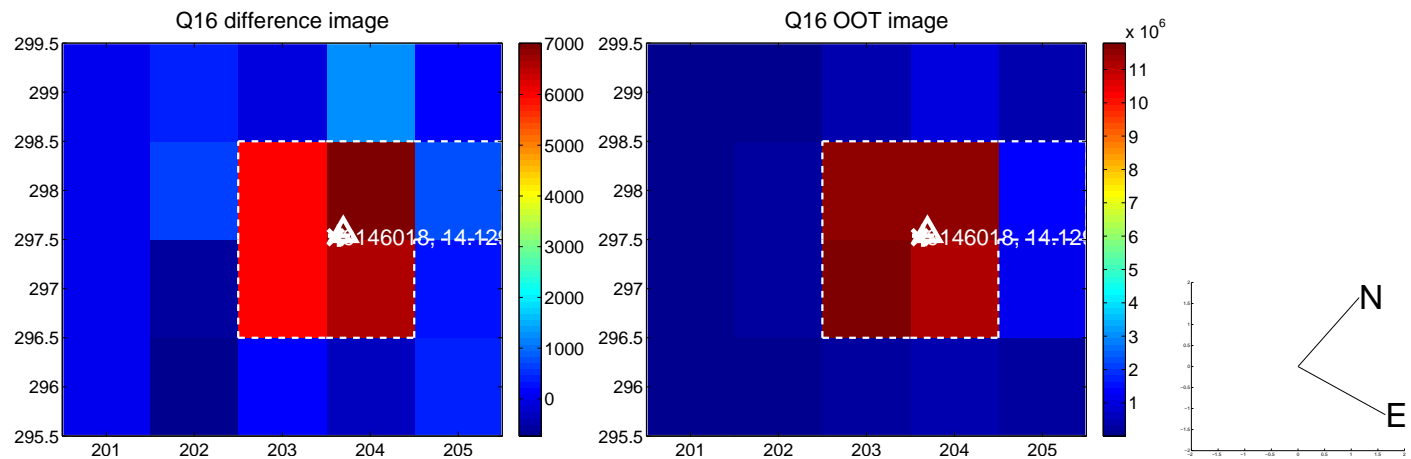
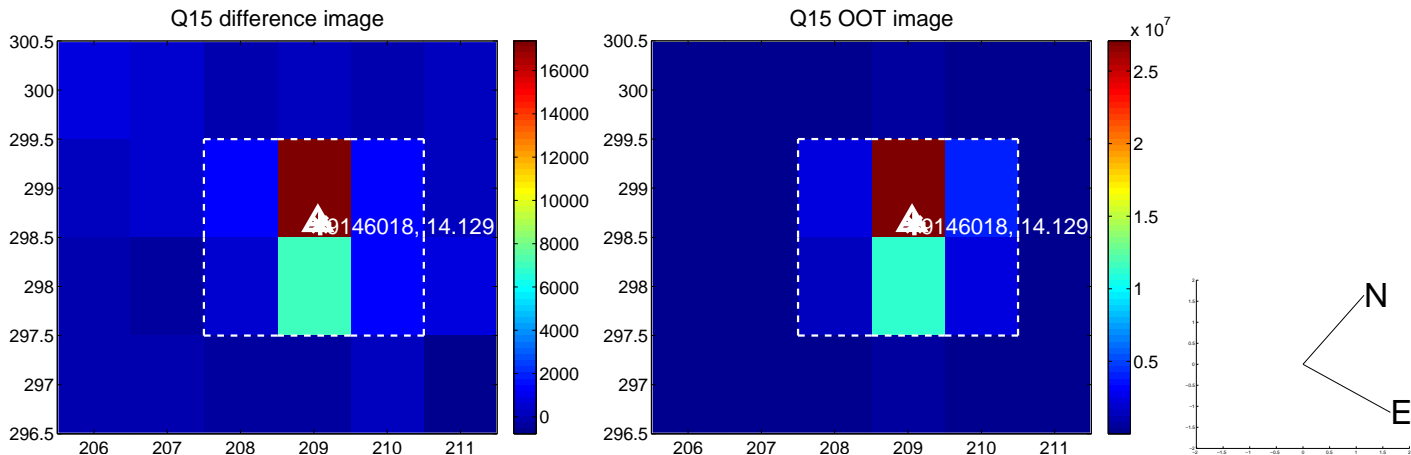
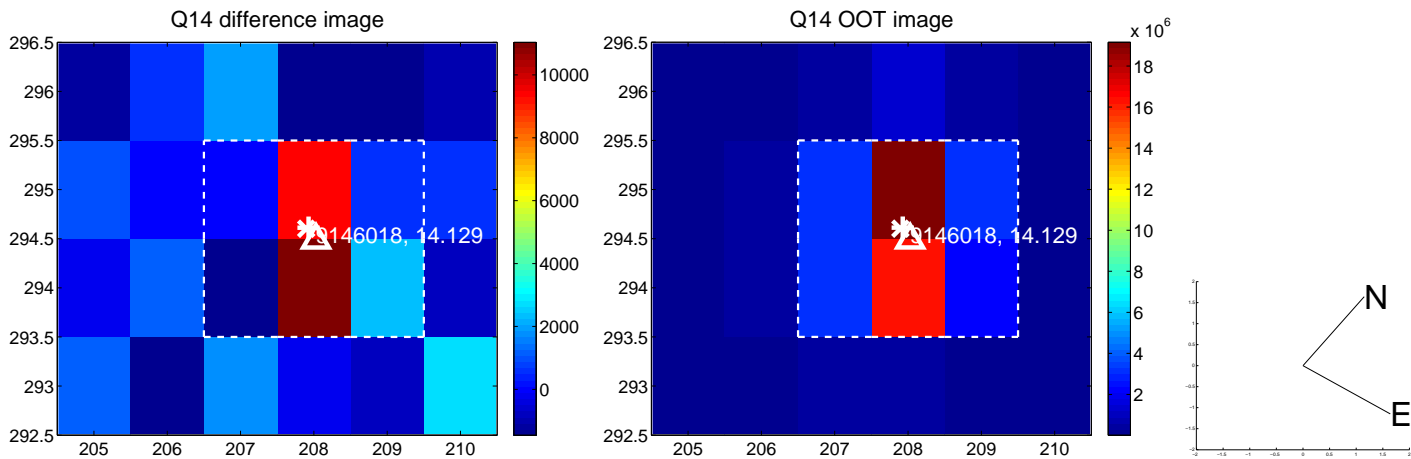
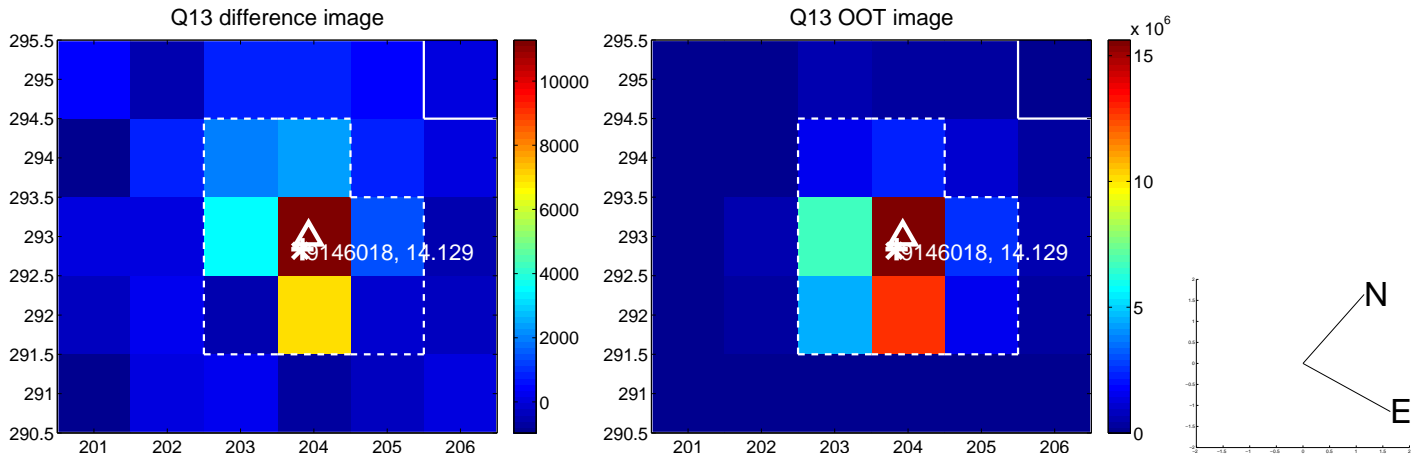
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



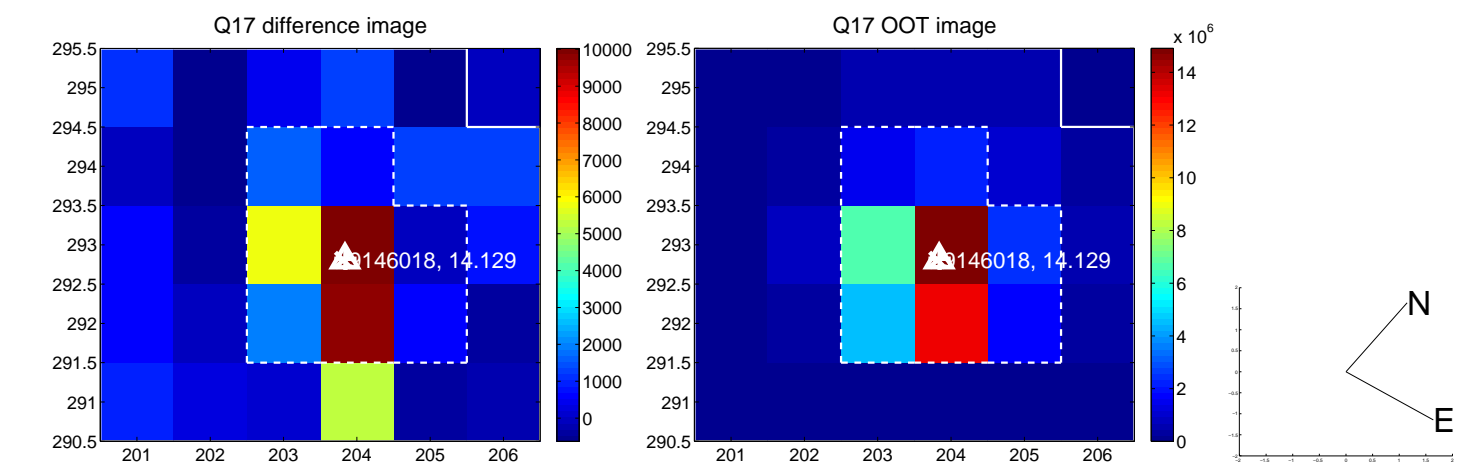
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



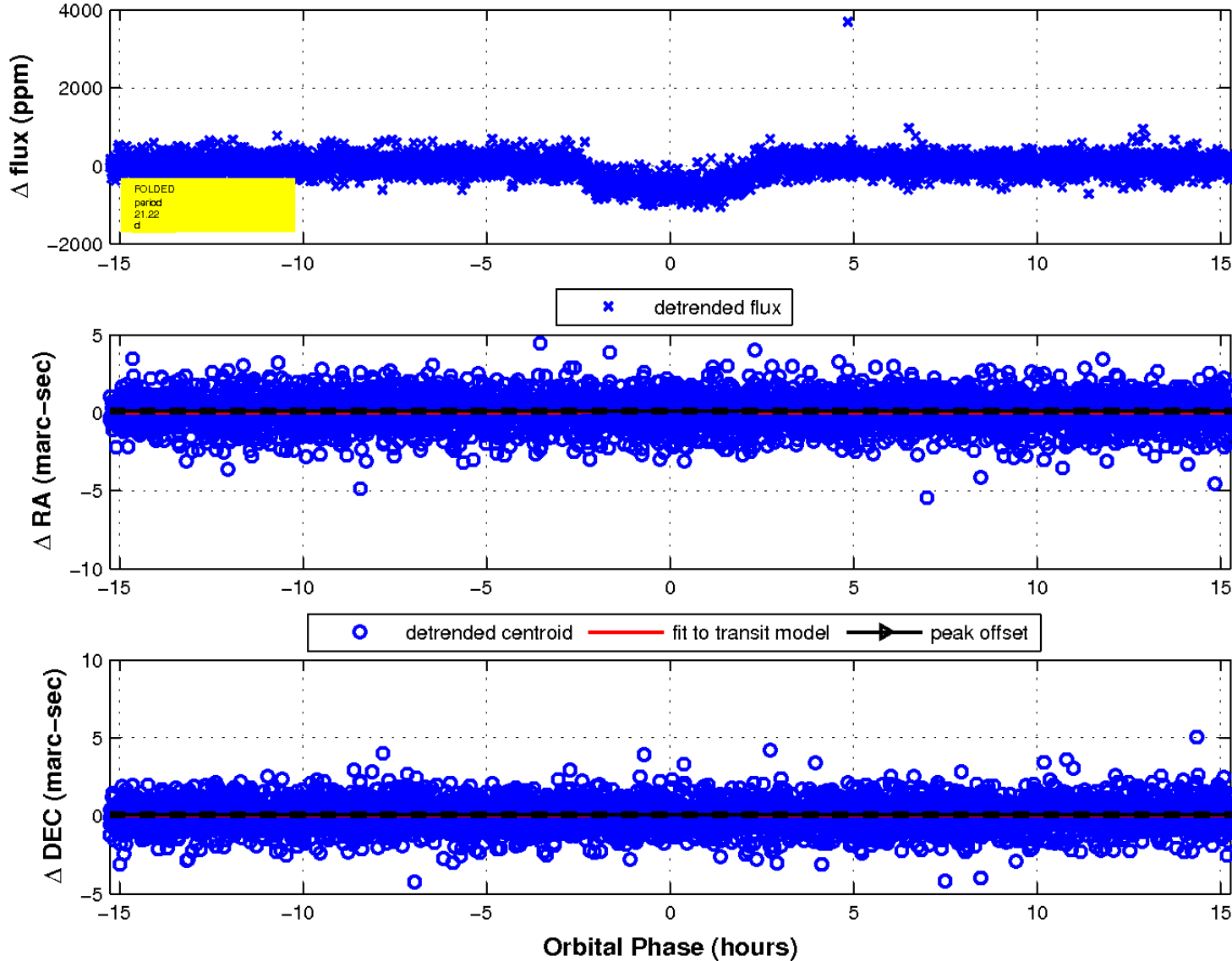
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

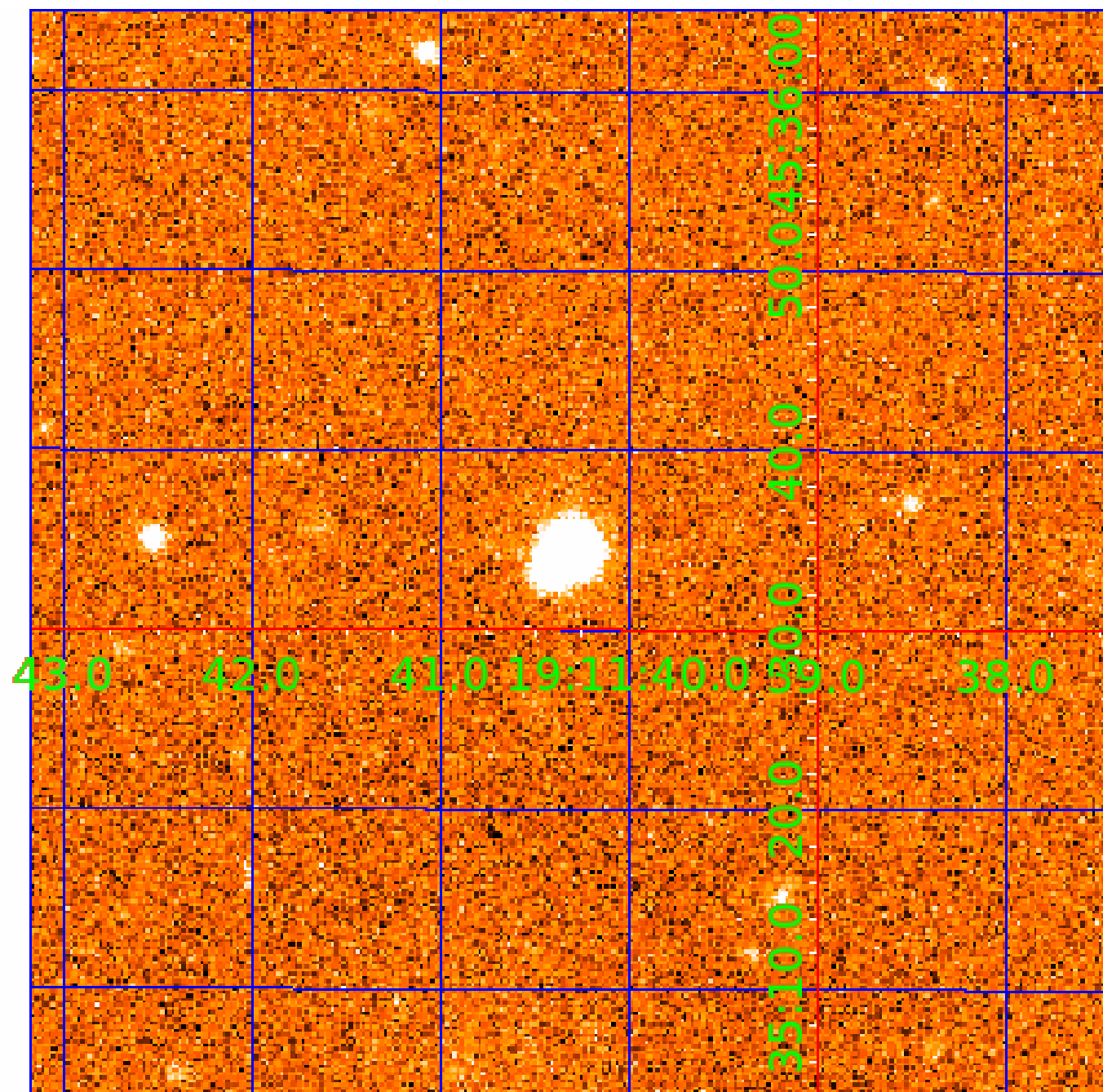


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009146018

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})
009146018-01	OBS	0584.01	9.926728	135.979299	717.6	4.147	76.8	82.1	0.98	5475	3.16	98.50
009146018-02	OBS	0584.02	21.223444	149.151724	591.2	5.094	47.0	50.3	0.98	5475	2.76	35.76
009146018-03	OBS	0584.03	6.470329	136.499763	119.2	3.647	14.9	16.1	0.98	5475	1.43	174.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009146018-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009146018-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009146018-03	OBS	PC	0.93	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.

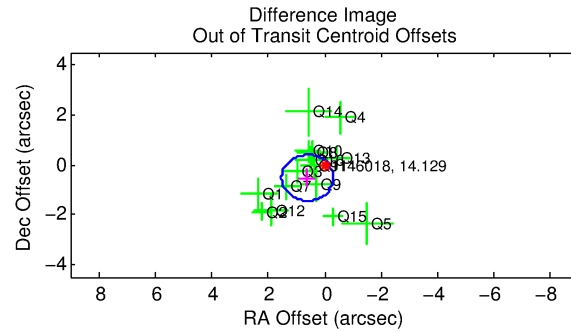
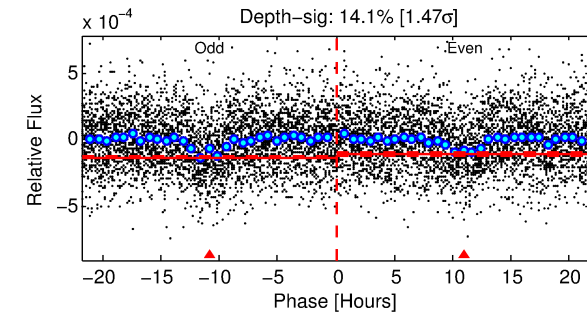
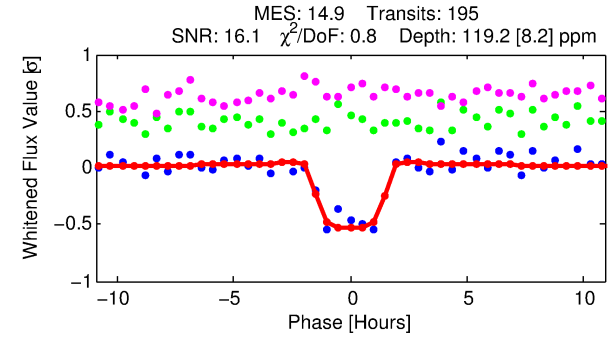
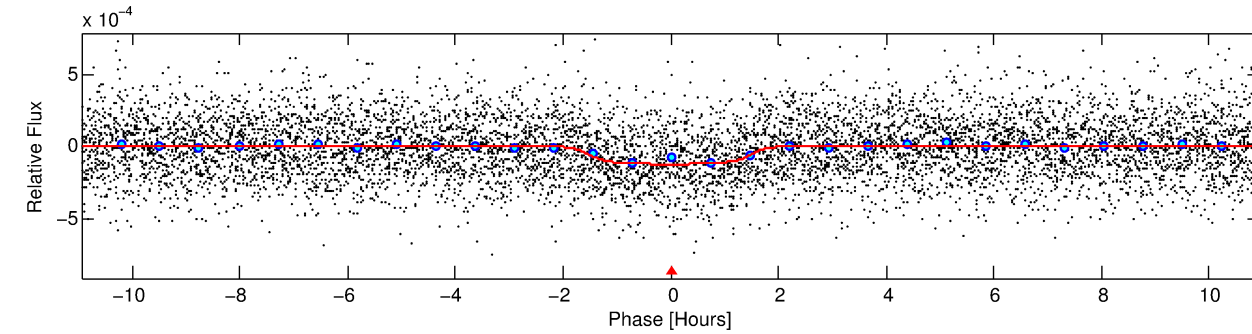
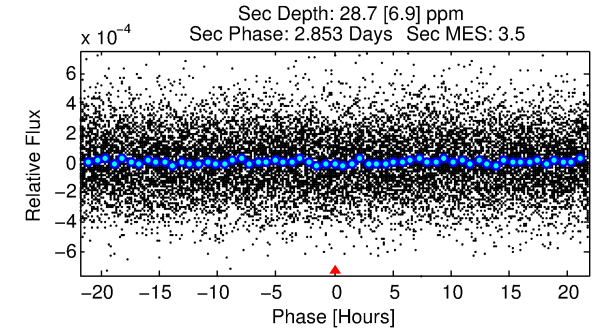
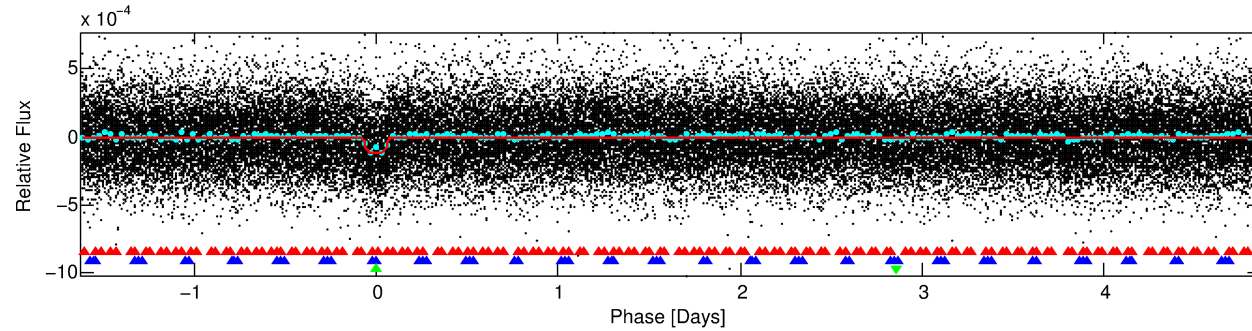
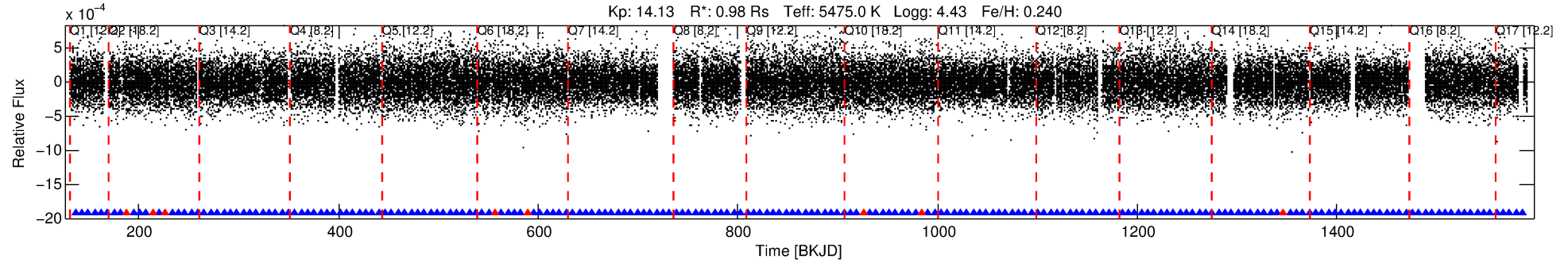
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009146018-03

No Significant Match Found

DV One-Page Summary

KIC: 9146018 Candidate: 3 of 3 Period: 6.470 d
KOI: K00584.03 Corr: 0.943



DV Fit Results:

Period = 6.47033 [0.00004] d
Epoch = 136.4998 [0.0043] BKJD
Rp/R* = 0.0133 [0.0013]
a/R* = 4.39 [1.73]
b = 0.96 [0.03]
Seff = 174.29 [35.92]
Teq = 926 [48] K
Rp = 1.43 [0.24] Re
a = 0.0667 [0.0083] AU
Ag = 34.57 [12.43] [2.70σ]
Teffp = 3473 [274] K [9.16σ]

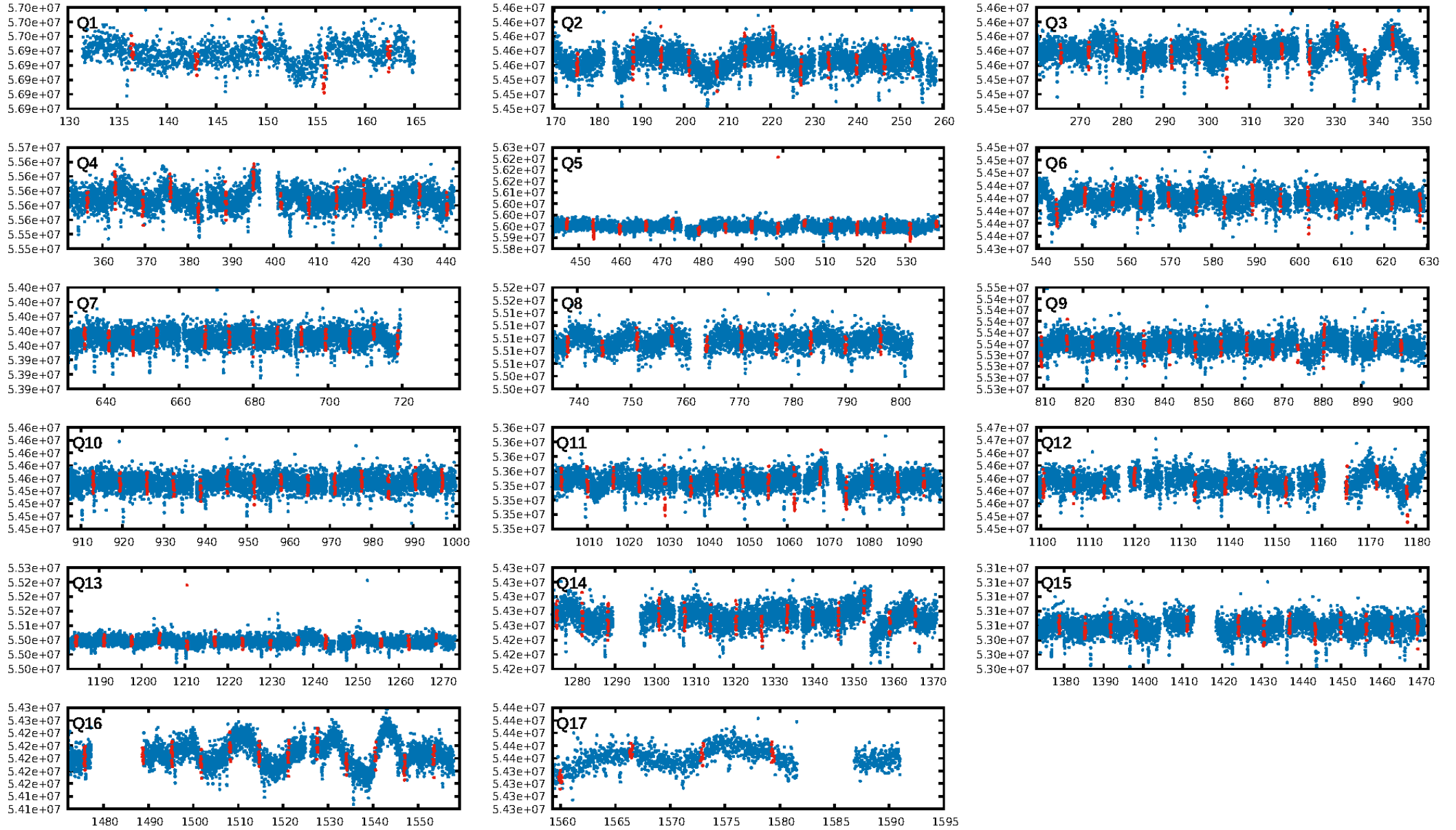
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.02σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.66e-47
RollingBand-fgt: 0.96 [179/187]
GhostDiagnostic-chr: 183.3
Centroid-sig: 88.4%
Centroid-so: 0.301 arcsec [0.41σ]
OotOffset-rm: 0.809 arcsec [2.64σ]
KicOffset-rm: 0.778 arcsec [2.32σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

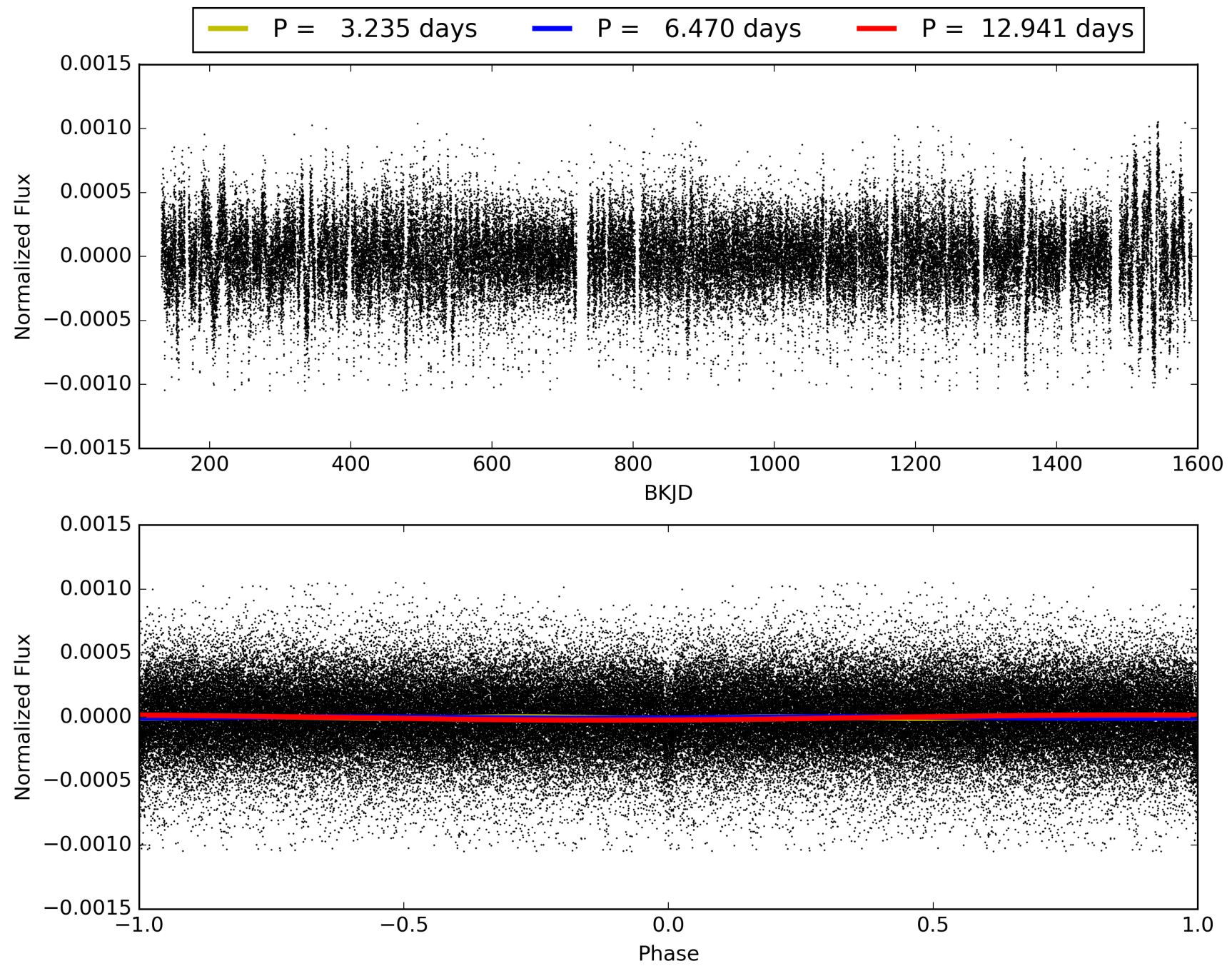
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:00:10 Z

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

TCE 009146018-03, PDC Light Curves

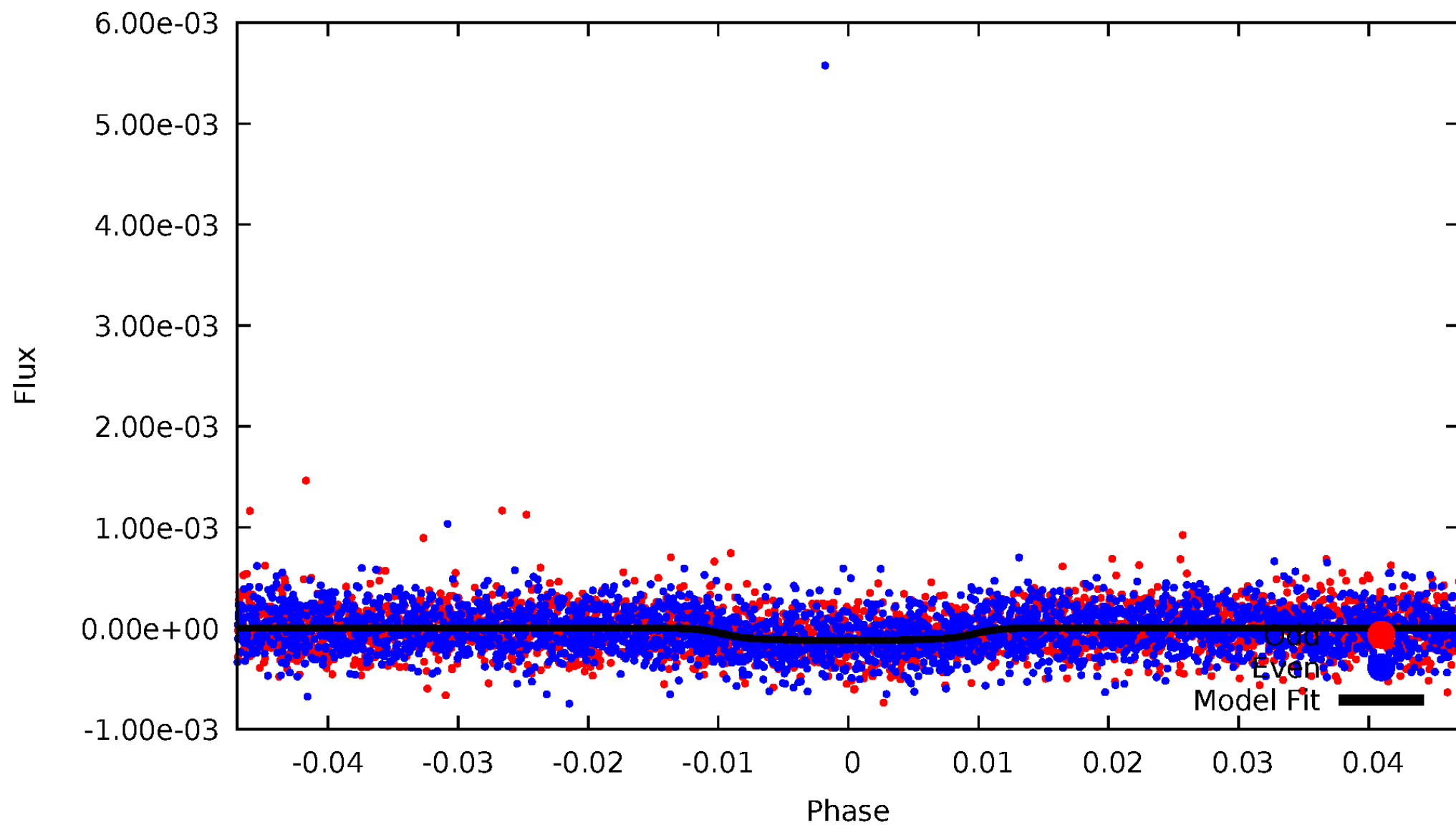


TCE 009146018-03



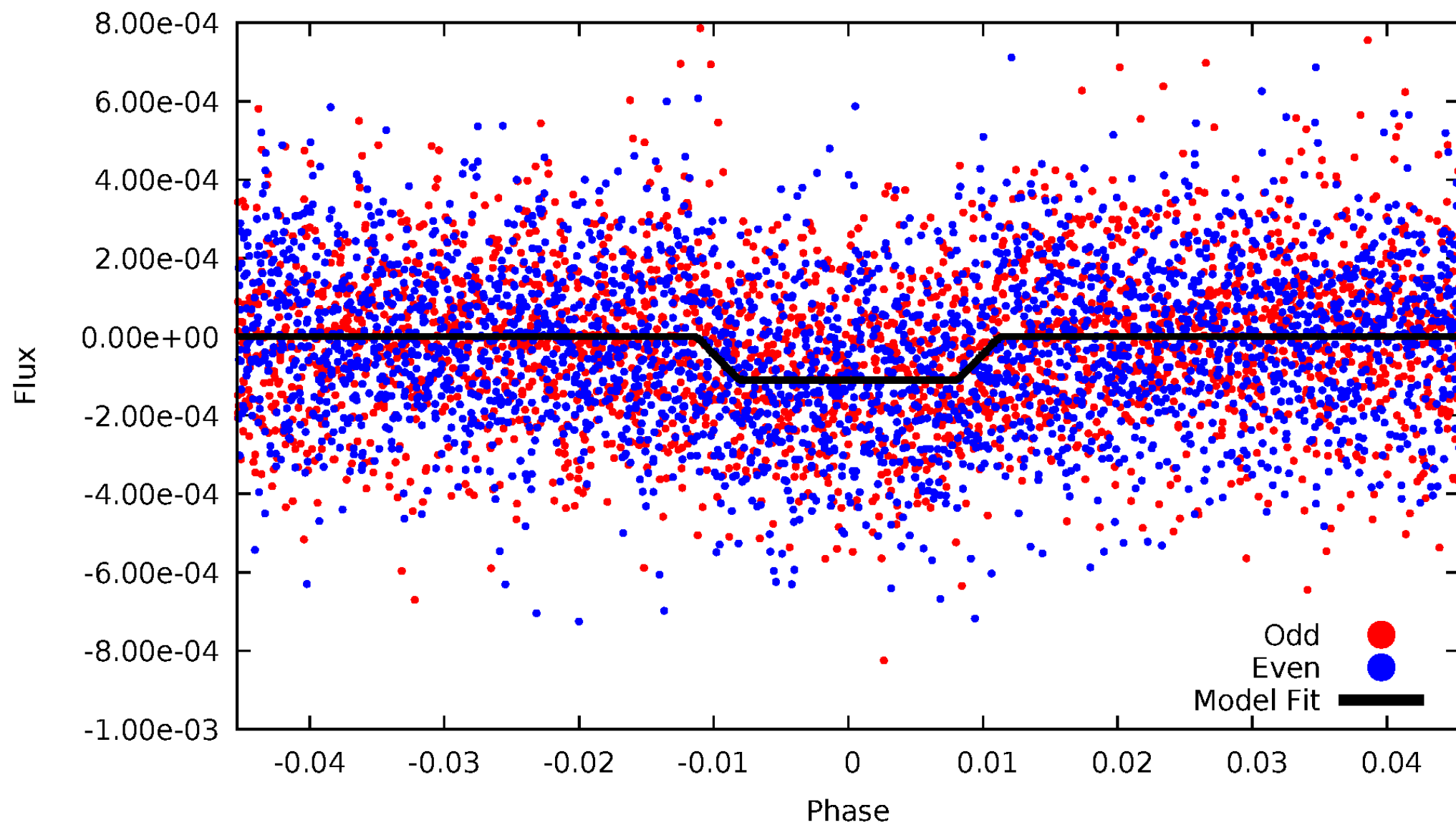
DV Odd/Even

TCE 009146018-03

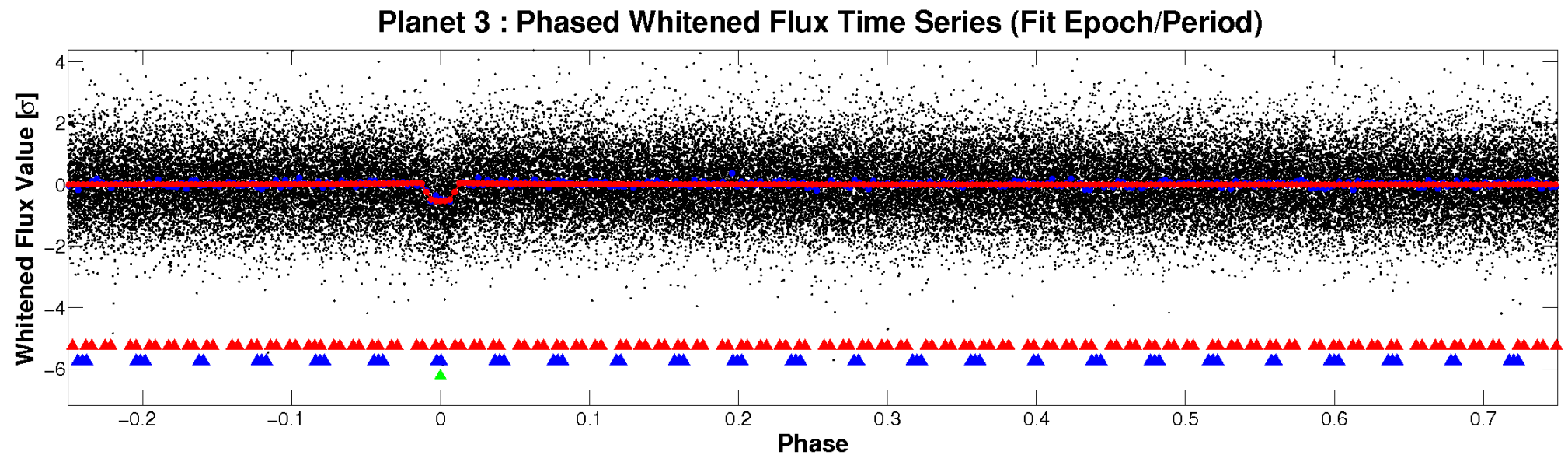
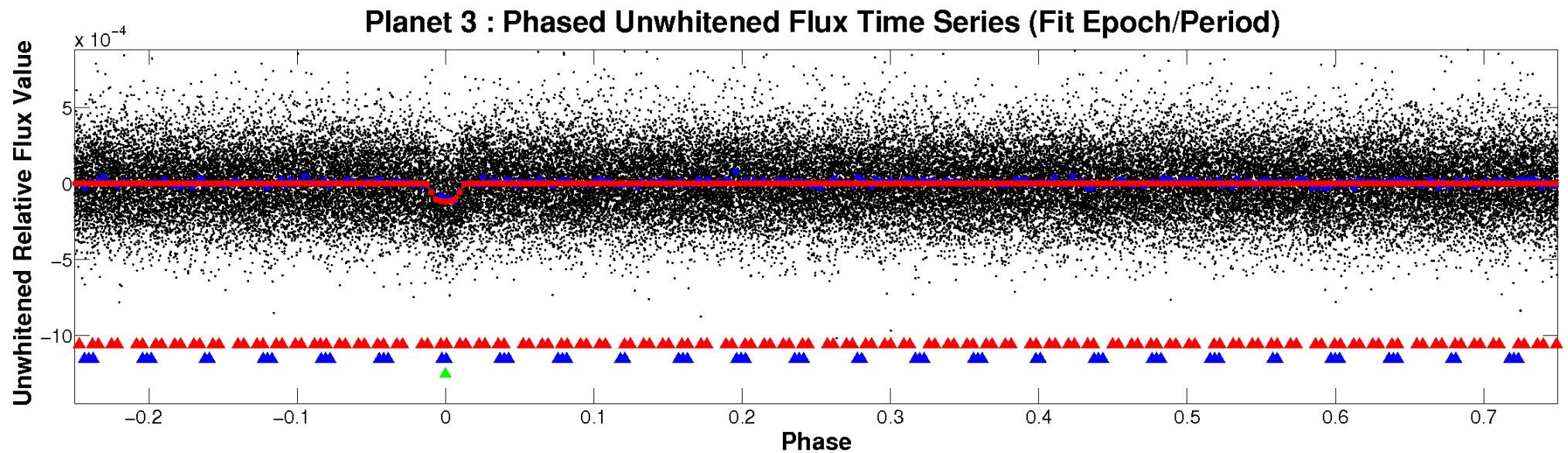


ALT Odd/Even

TCE 009146018-03

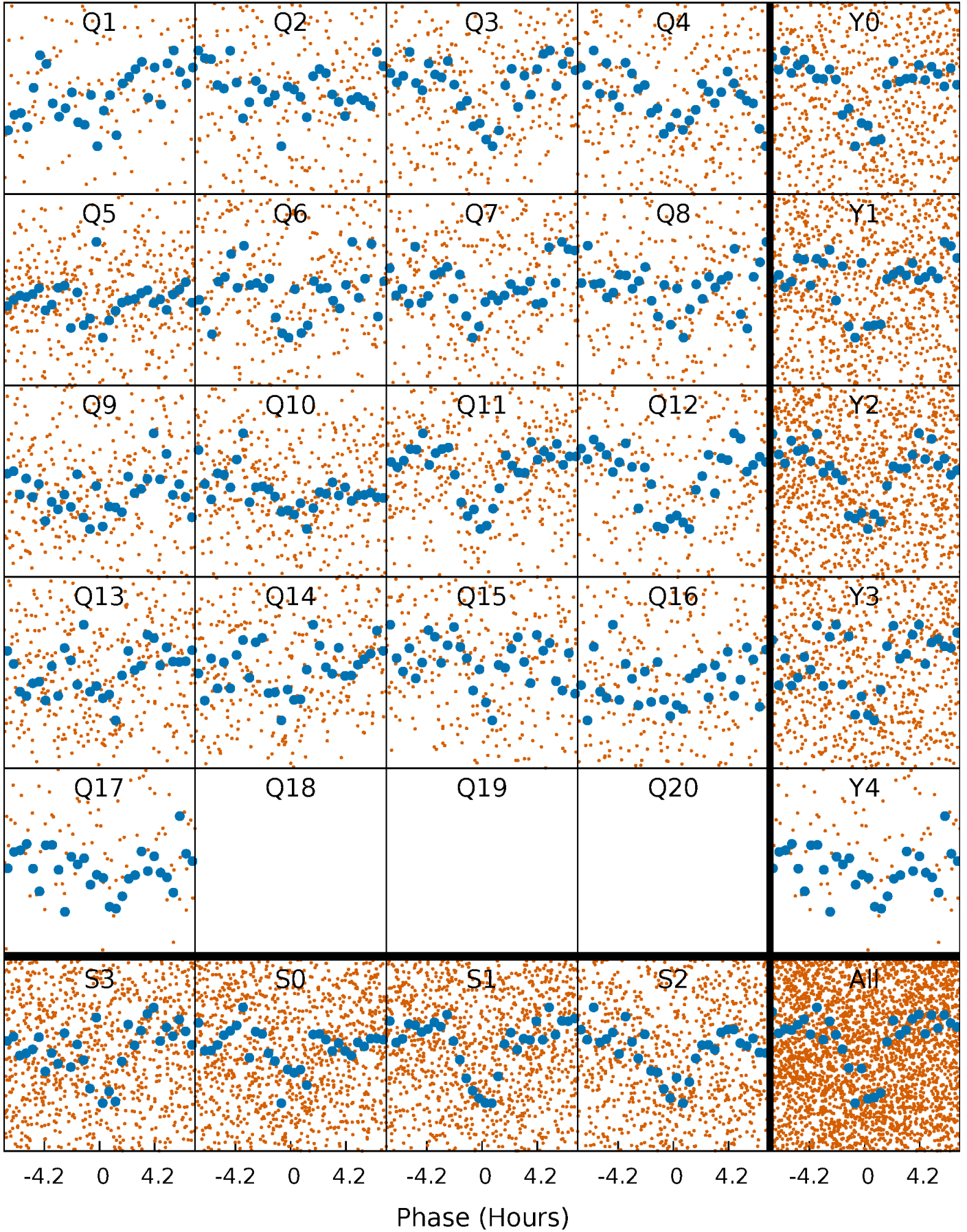


Non-Whitened Vs. Whitened Light Curve



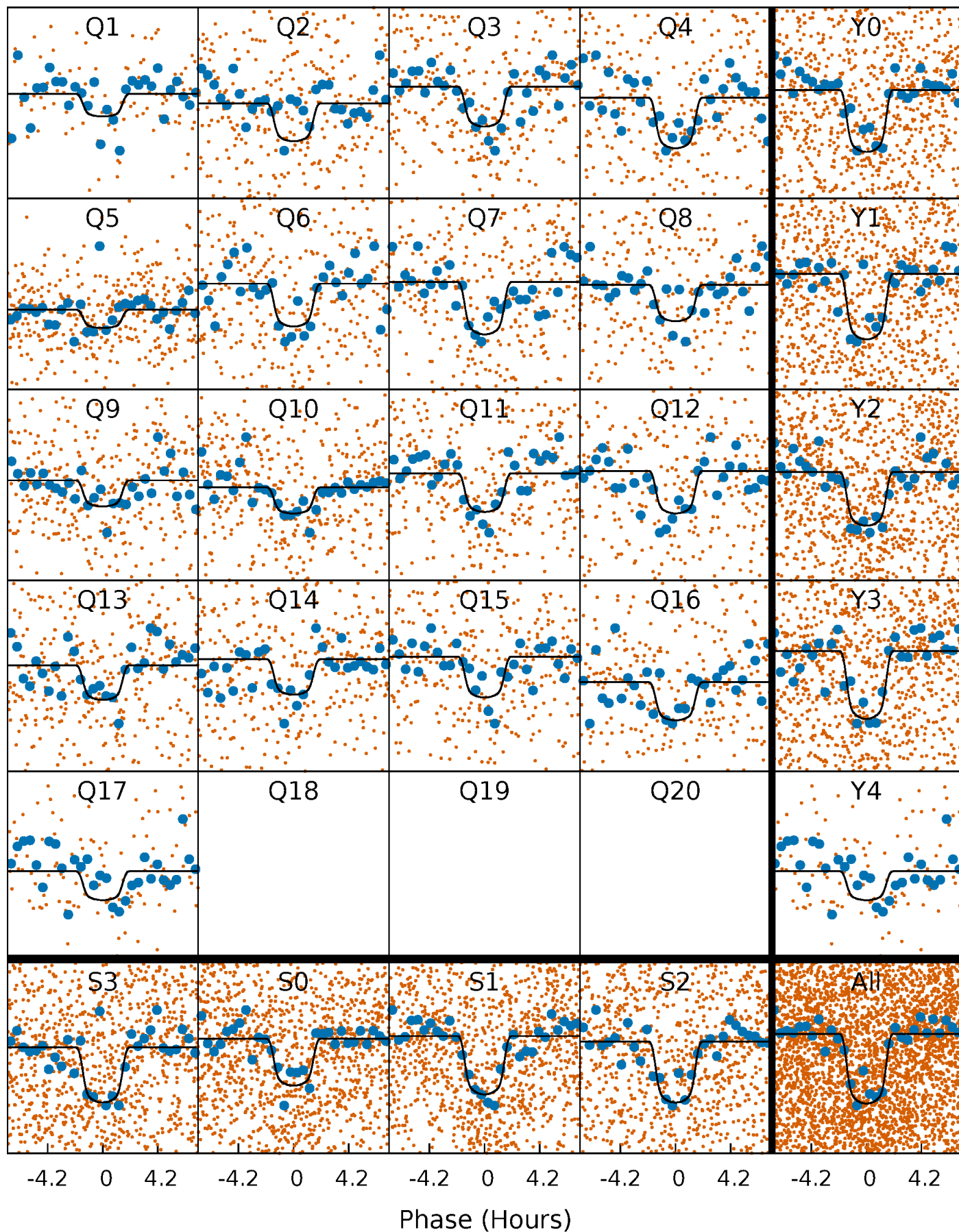
PDC Quarter-Phased Transit Curves

TCE 009146018-03 P= 6.470329 Days $T_0=136.499763$ (BKJD)



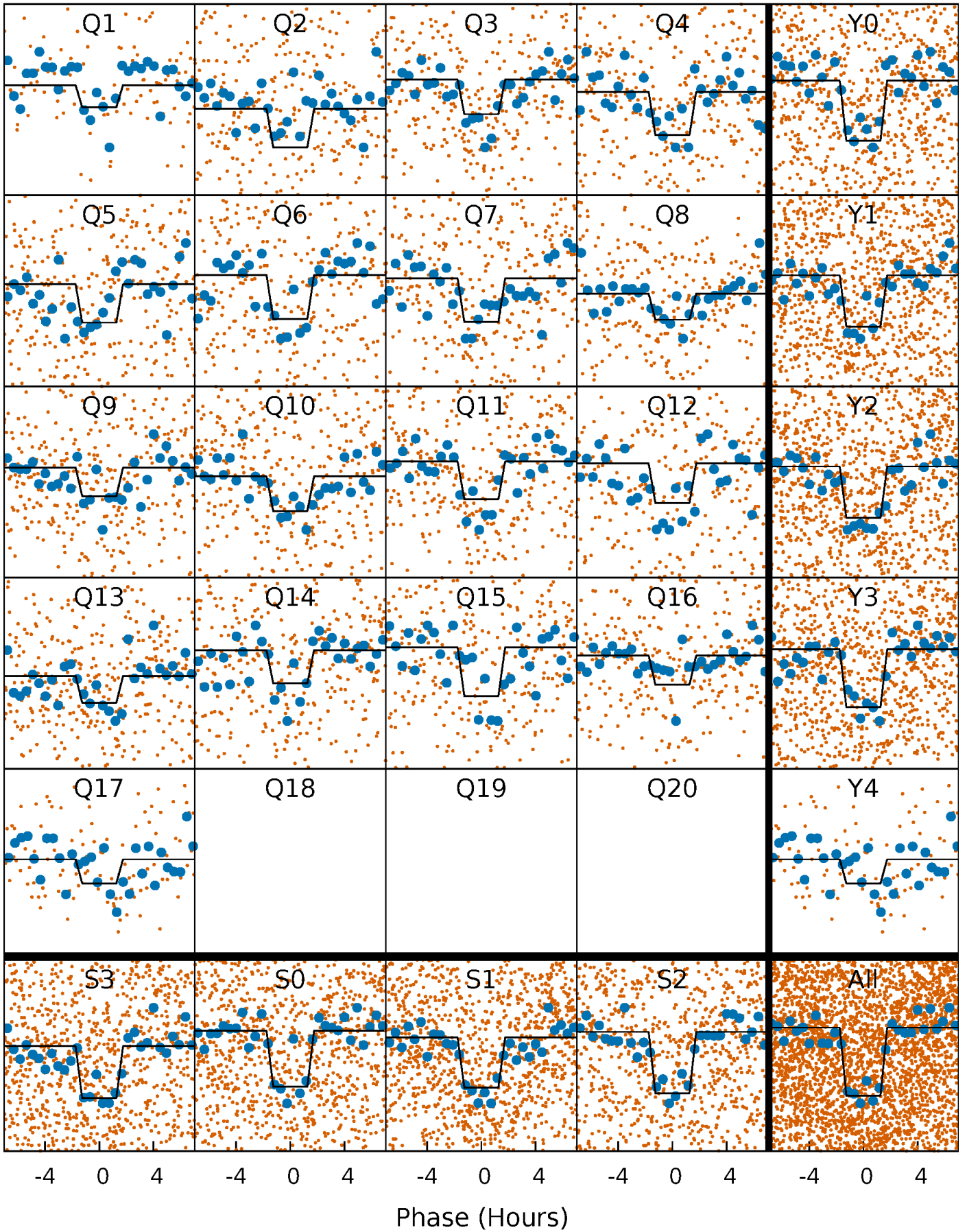
DV Quarter-Phased Transit Curves

TCE 009146018-03 P= 6.470329 Days $T_0=136.499763$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

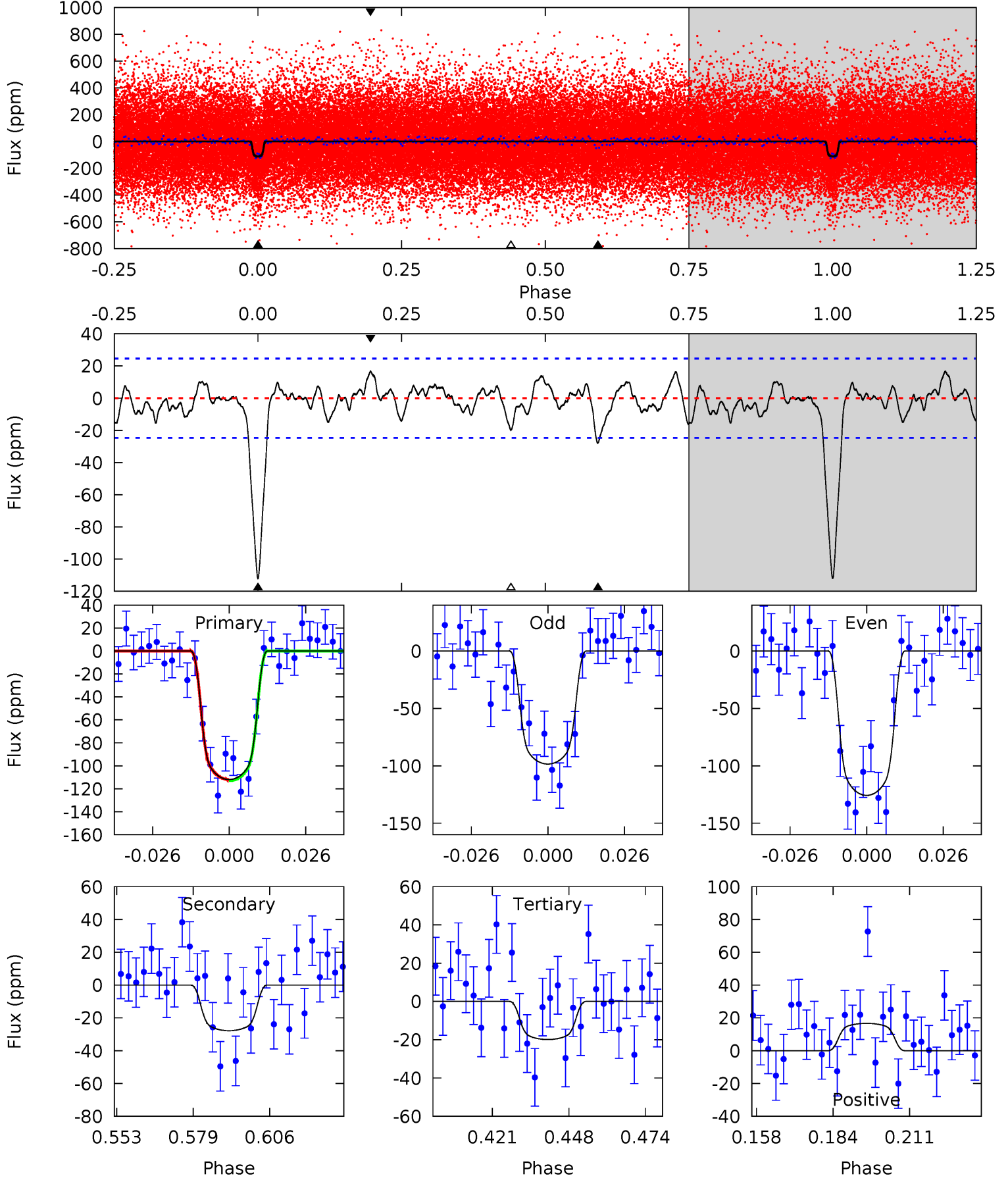
TCE 009146018-03 P= 6.470207 Days $T_0=136.513486$ (BKJD)



DV Model-Shift Uniqueness Test

009146018-03, P = 6.470329 Days, E = 130.029434 Days

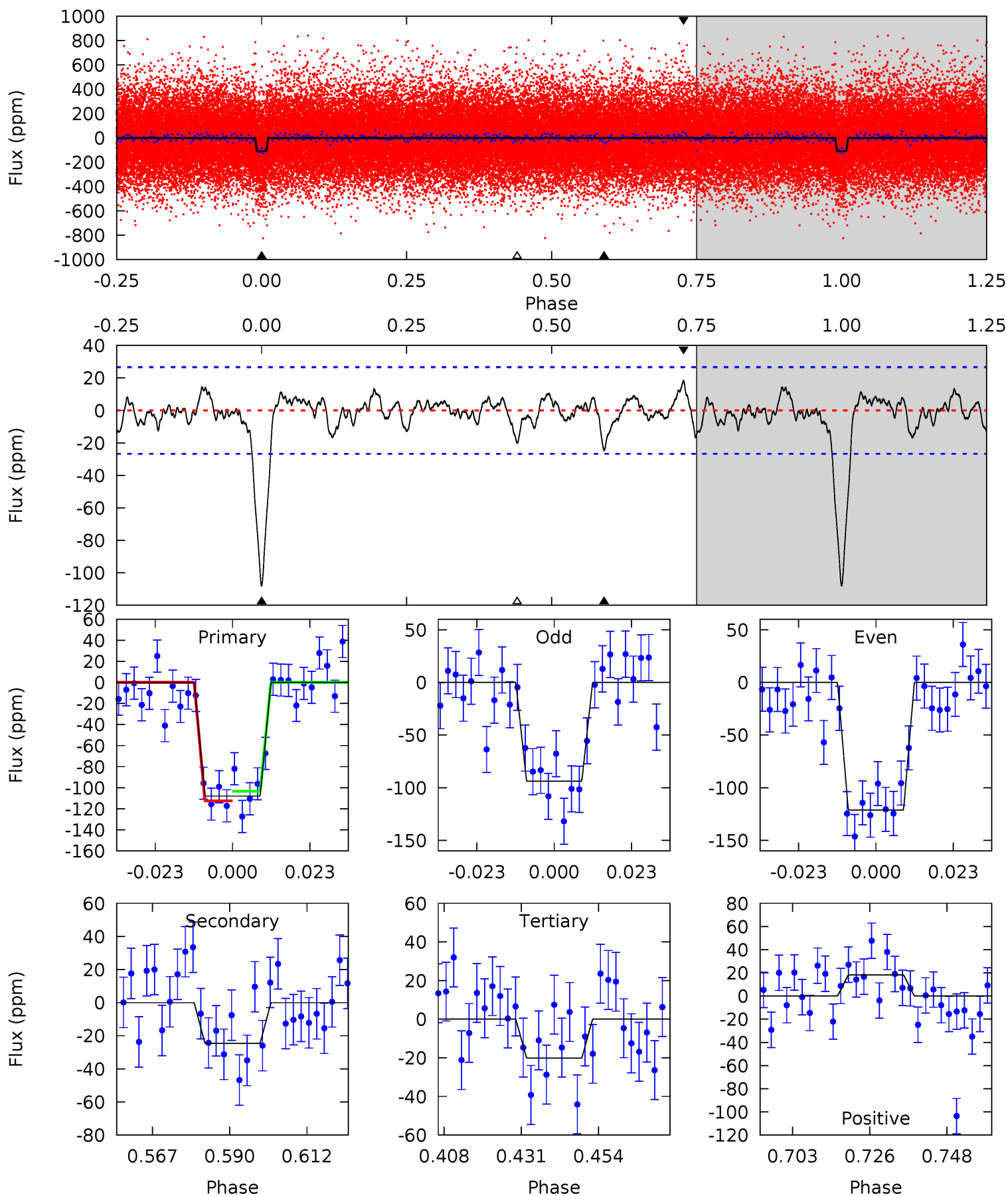
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	5.46	3.90	3.27	4.84	2.22	1.34	18.1	18.7	1.56	2.20	2.68	1.00	0.13	0.10



Alt Model-Shift Uniqueness Test

009146018-03, P = 6.470207 Days, E = 130.043279 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	4.49	3.68	3.33	4.87	2.28	1.16	16.0	16.4	0.81	1.16	2.51	0.97	0.14	0.83



Stellar Parameters For KIC 009146018

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5475^{+109}_{-109}	$4.430^{+0.081}_{-0.108}$	$0.240^{+0.150}_{-0.150}$	$0.982^{+0.137}_{-0.080}$	$0.947^{+0.056}_{-0.046}$	$1.407^{+0.467}_{-0.414}$
	+2%/-2%	+2%/-2%	+62%/-62%	+14%/-8%	+6%/-5%	+33%/-29%
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 009146018-03 / KOI 0584.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 5	$1.44^{+0.17}_{-0.16}$	1298^{+52}_{-48}	3806^{+176}_{-171}	33^{+10}_{-9}
Alt.	-25 ± 5	$1.13^{+0.17}_{-0.16}$	1297^{+51}_{-40}	4045^{+264}_{-253}	46^{+21}_{-15}

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

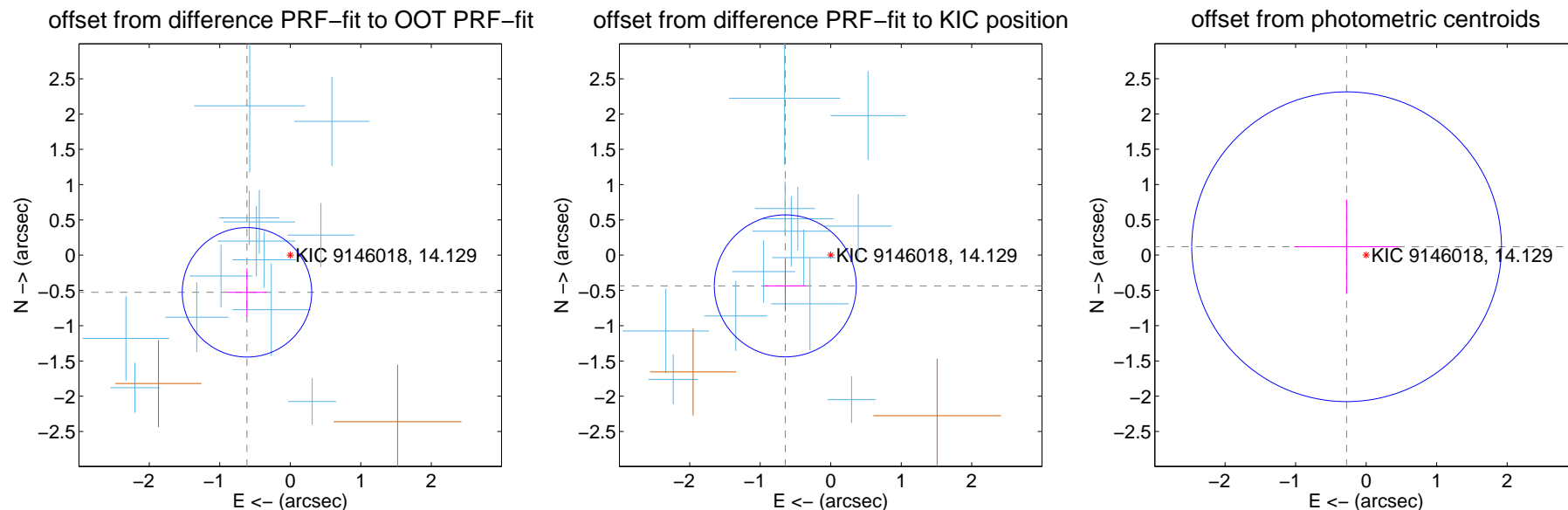
DV Centroid Data

Supplemental centroid analysis for 009146018-03. Kepler magnitude: 14.13. Transit SNR 16.13

There are 13 quarters with good PRF difference image offsets

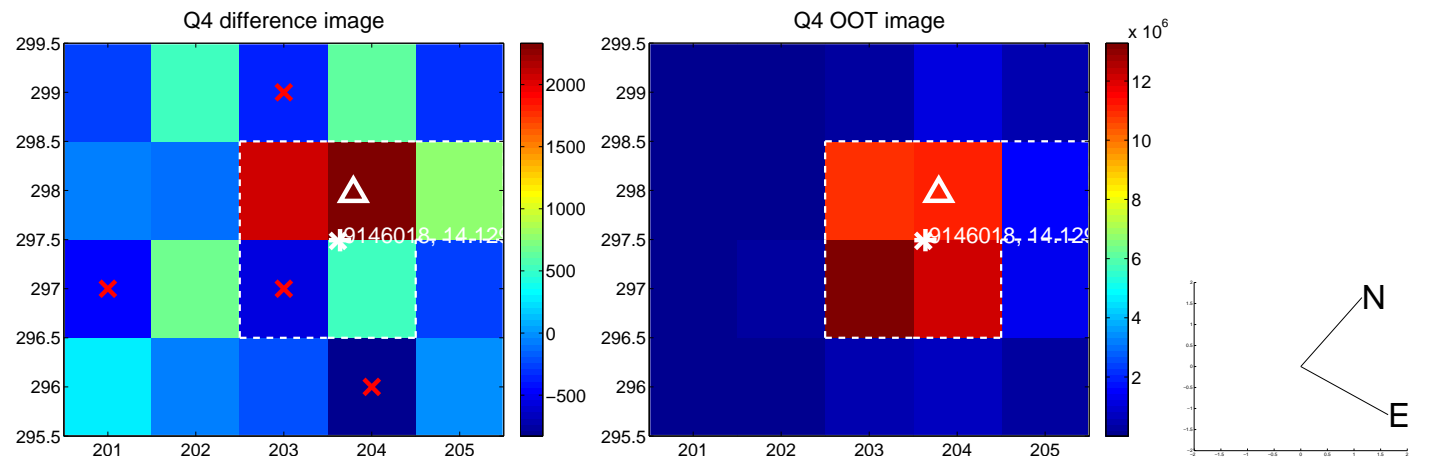
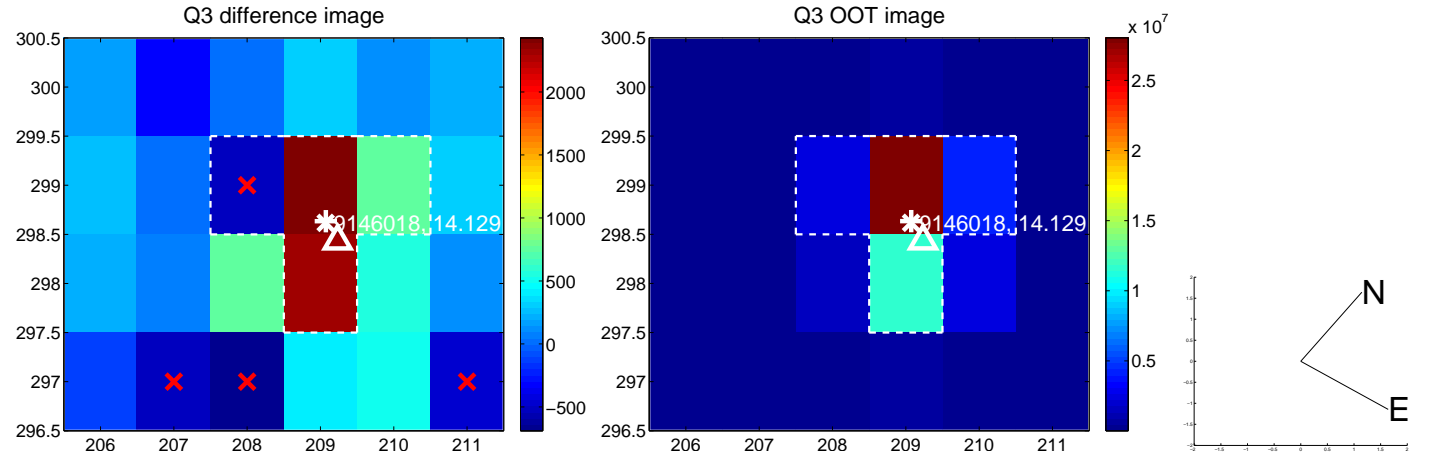
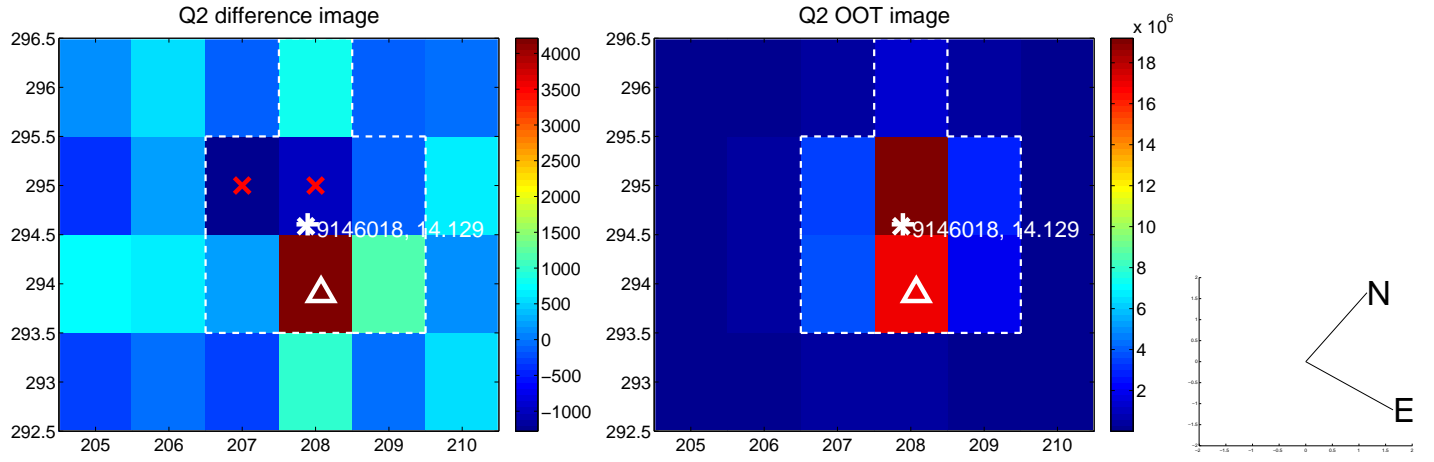
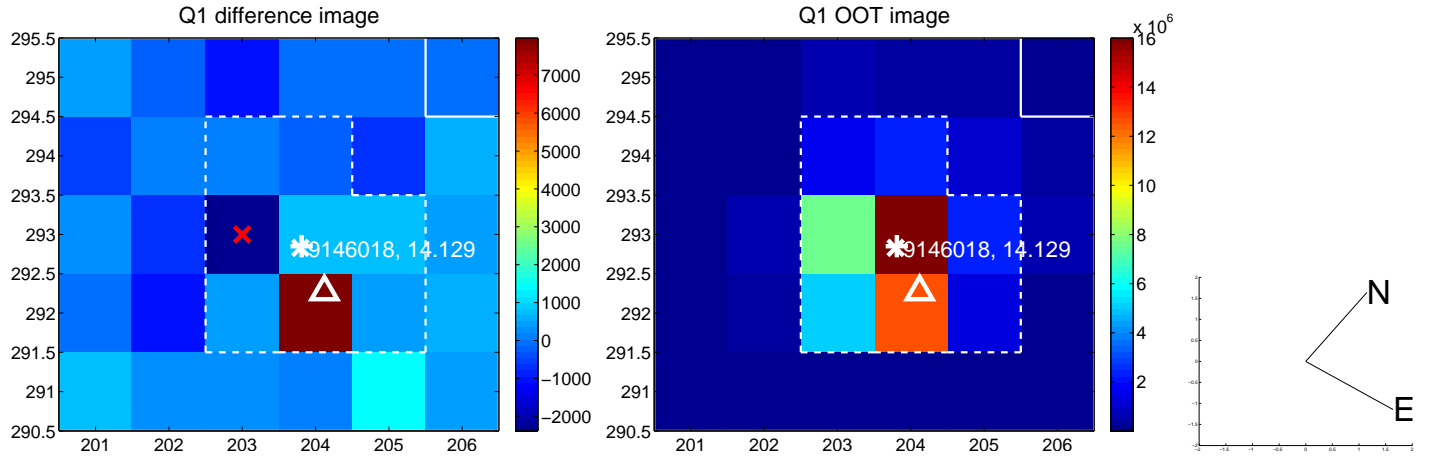
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.809 ± 0.306	2.64	0.614 ± 0.276	-0.527 ± 0.342
PRF-fit source offset from KIC position	0.778 ± 0.336	2.32	0.644 ± 0.294	-0.436 ± 0.364
photometric centroid source offset	0.30 ± 0.73	0.41	0.28 ± 0.74	0.12 ± 0.67

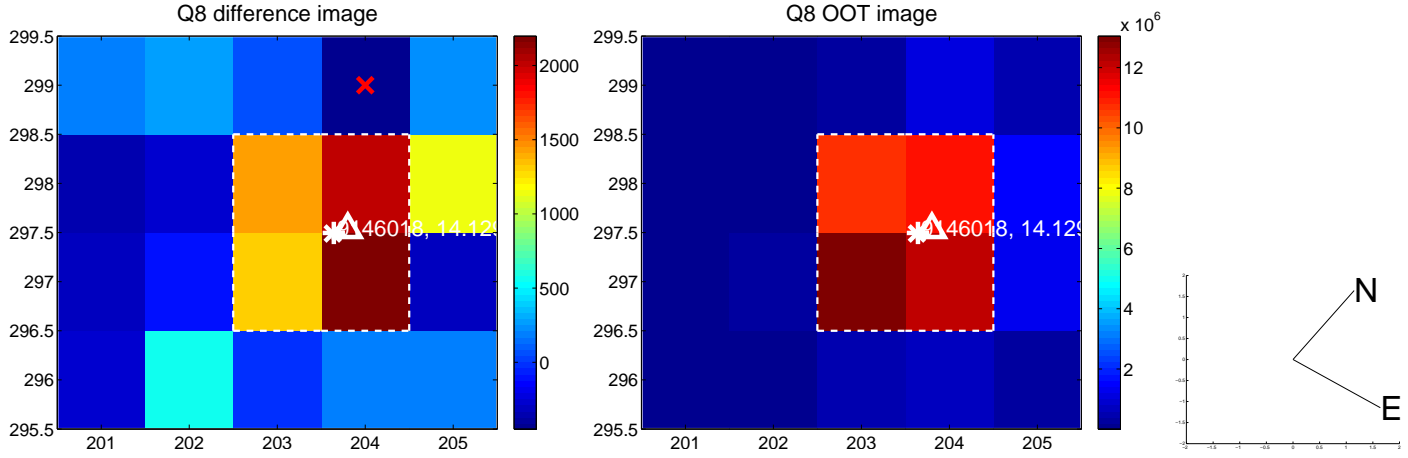
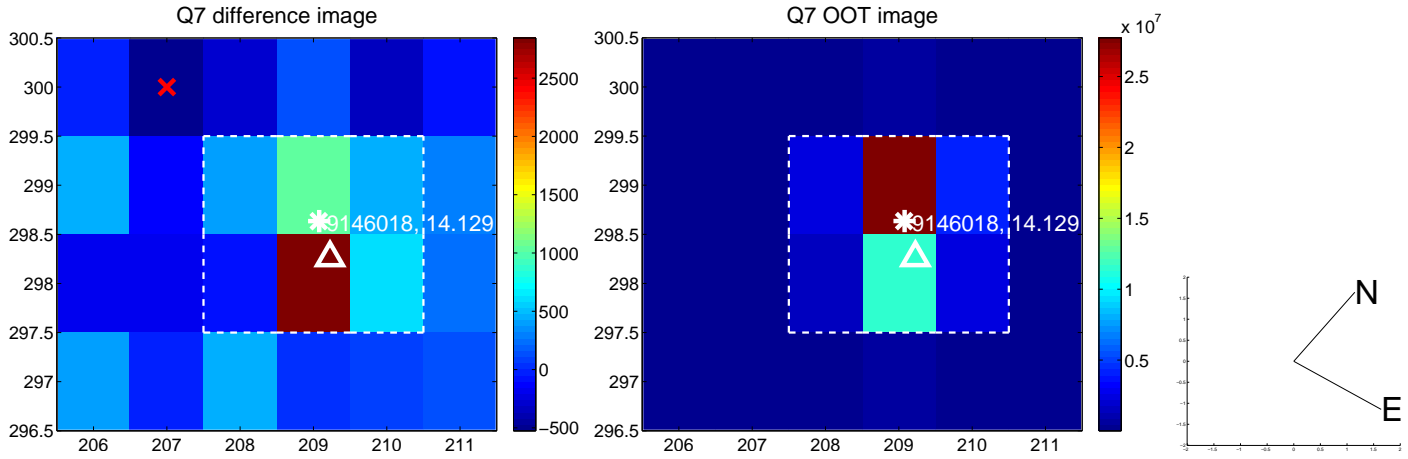
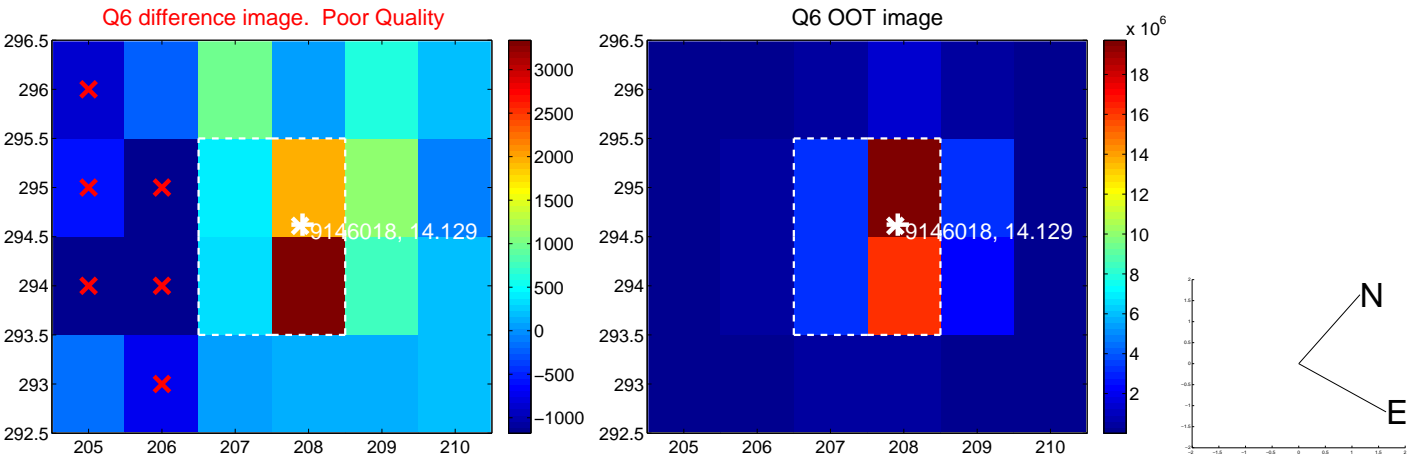
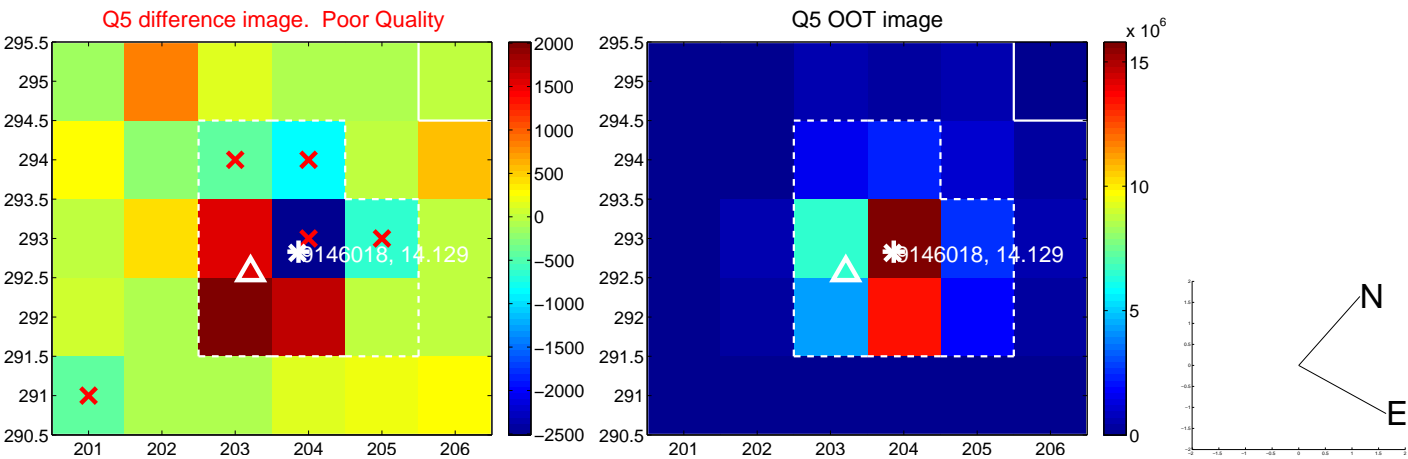


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

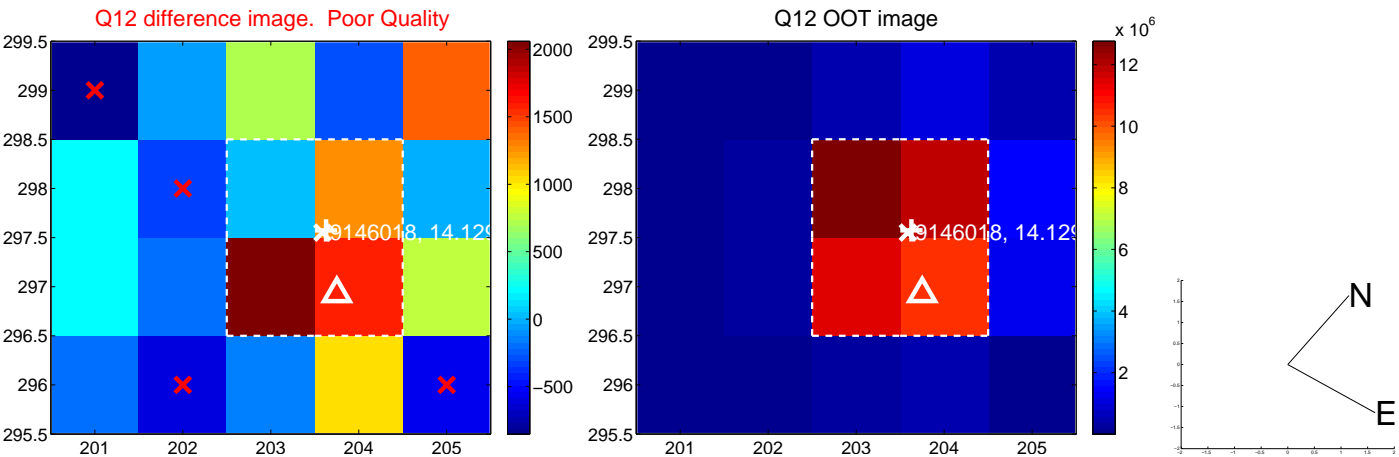
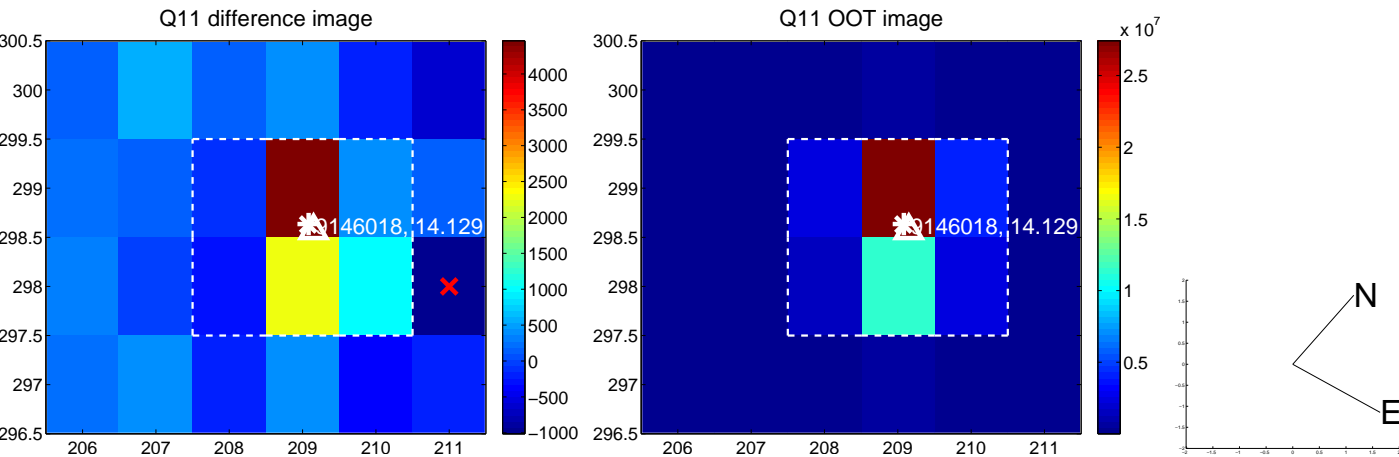
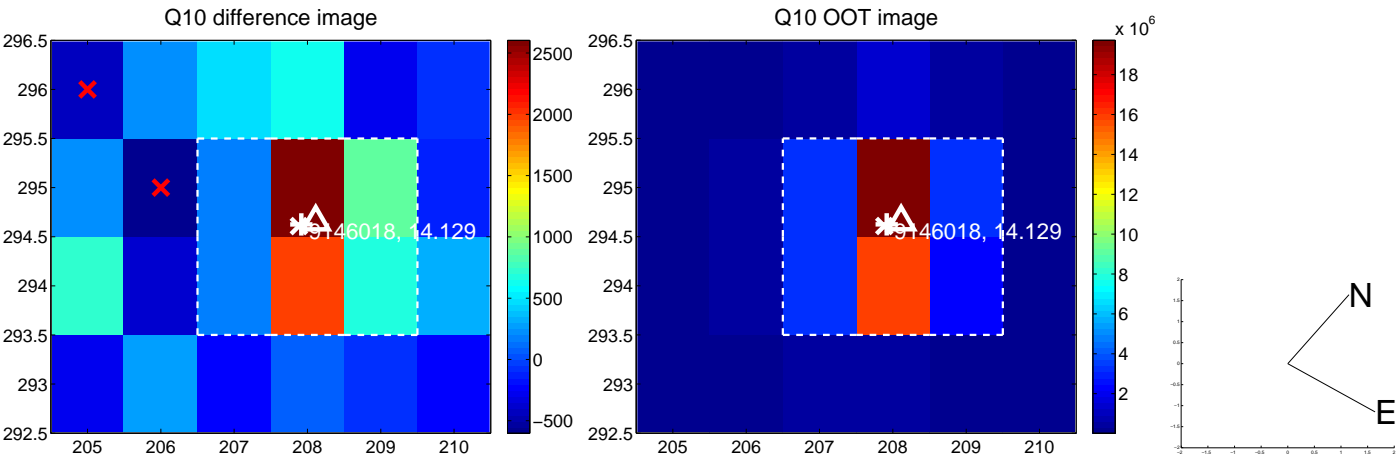
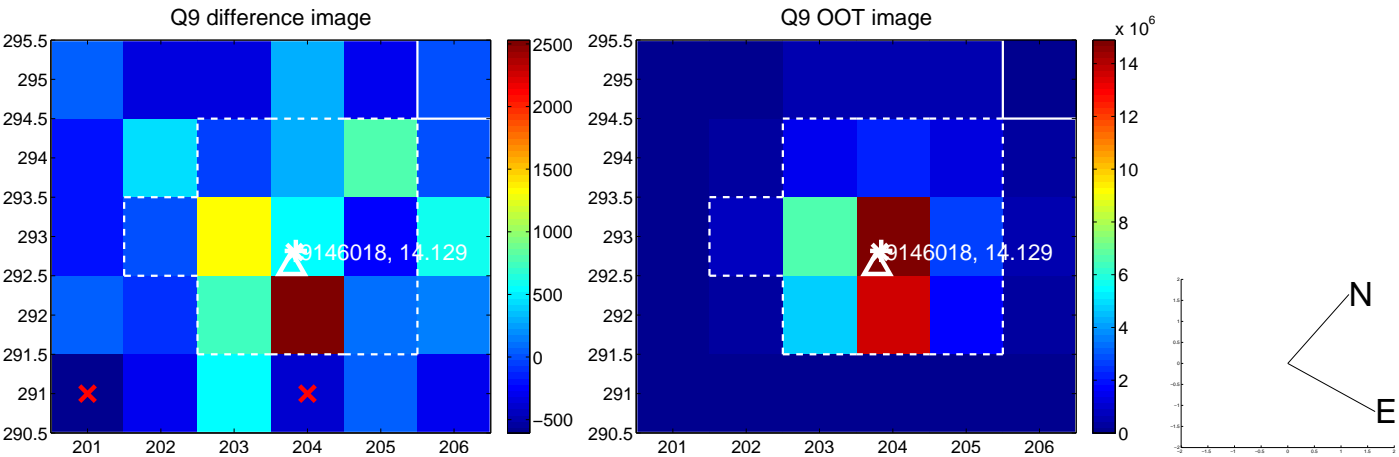
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



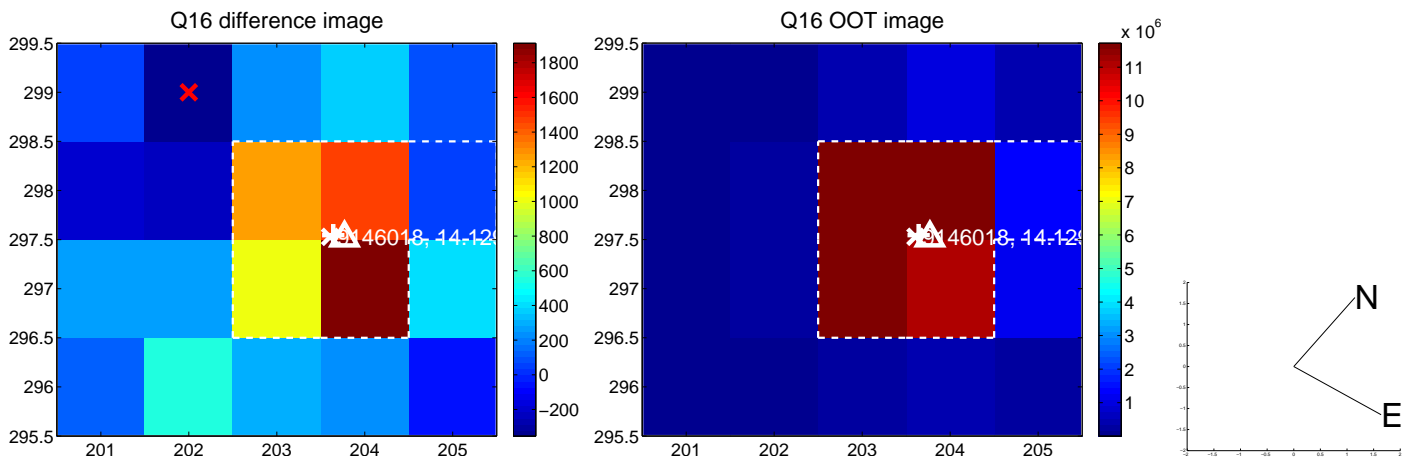
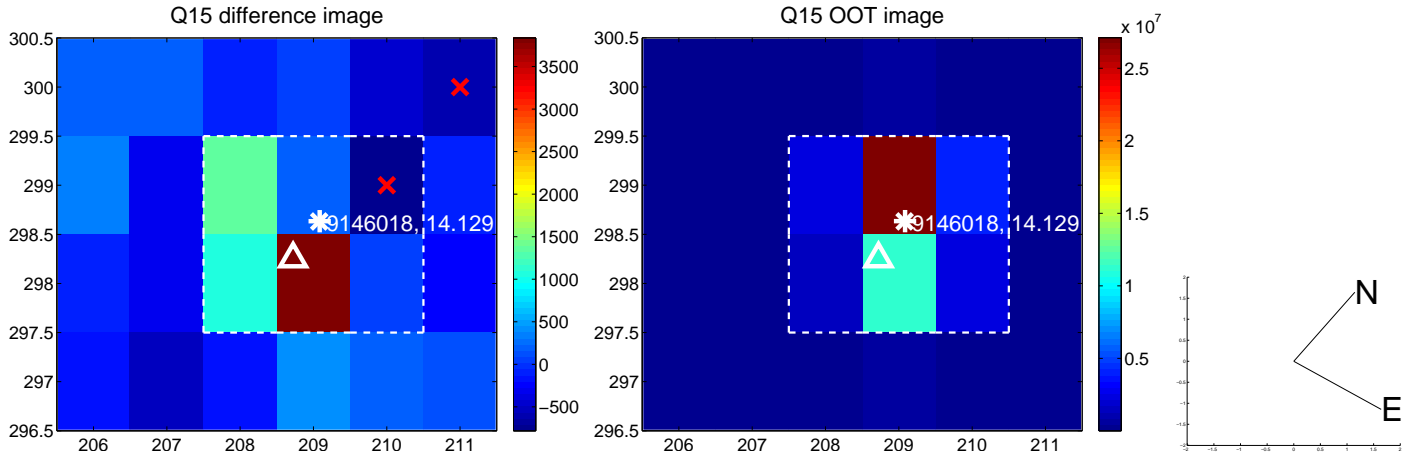
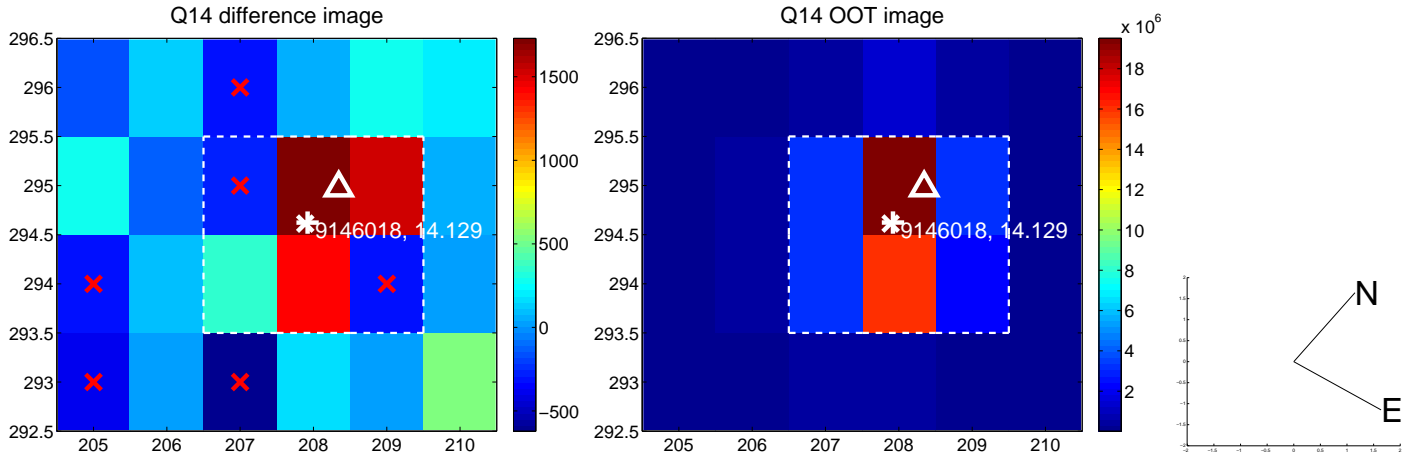
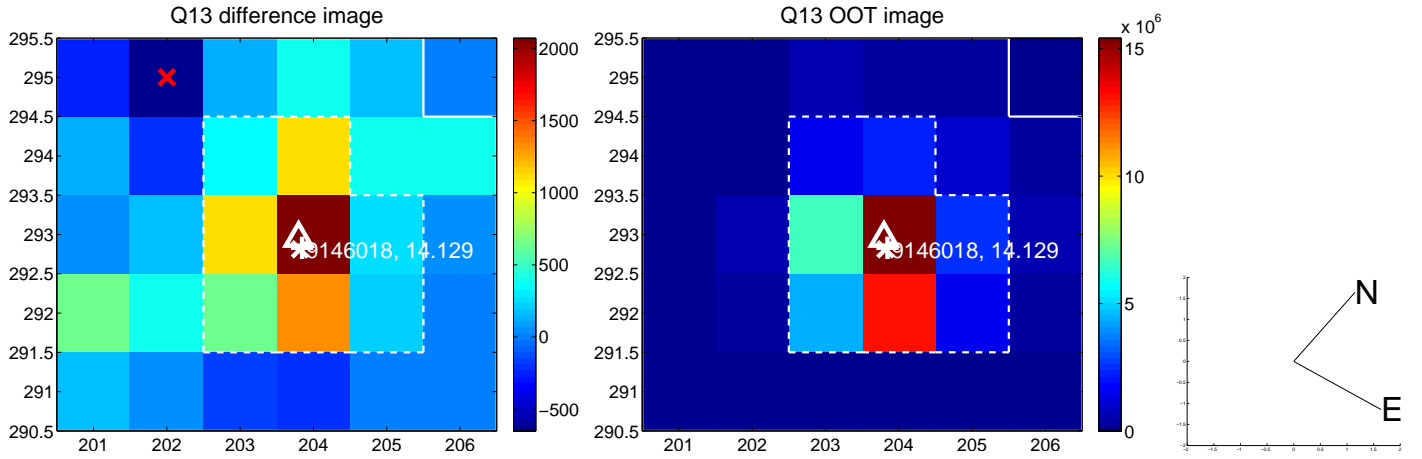
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



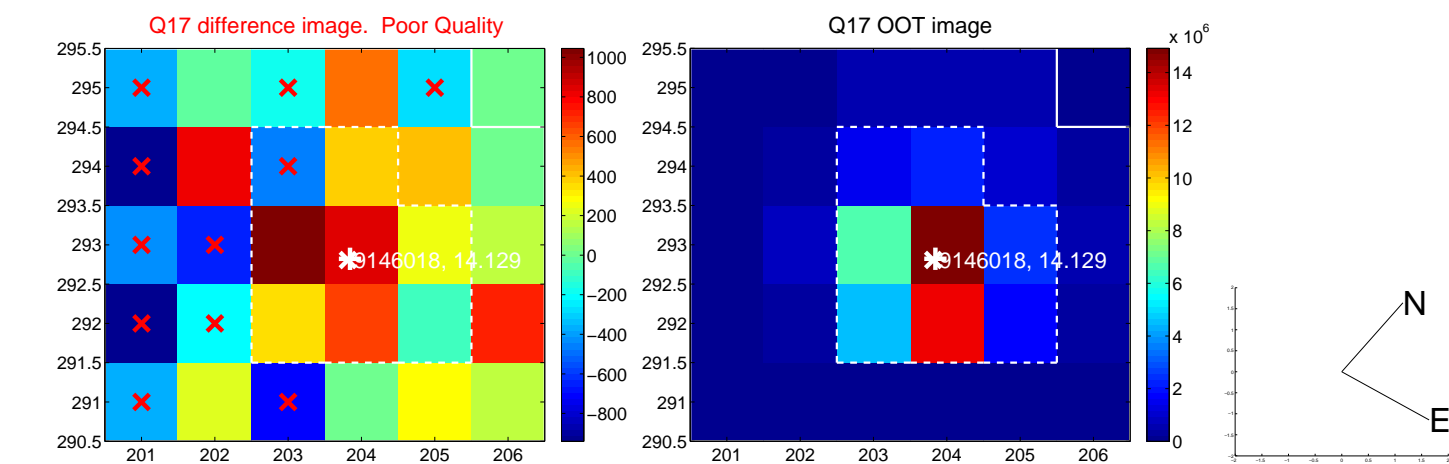
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



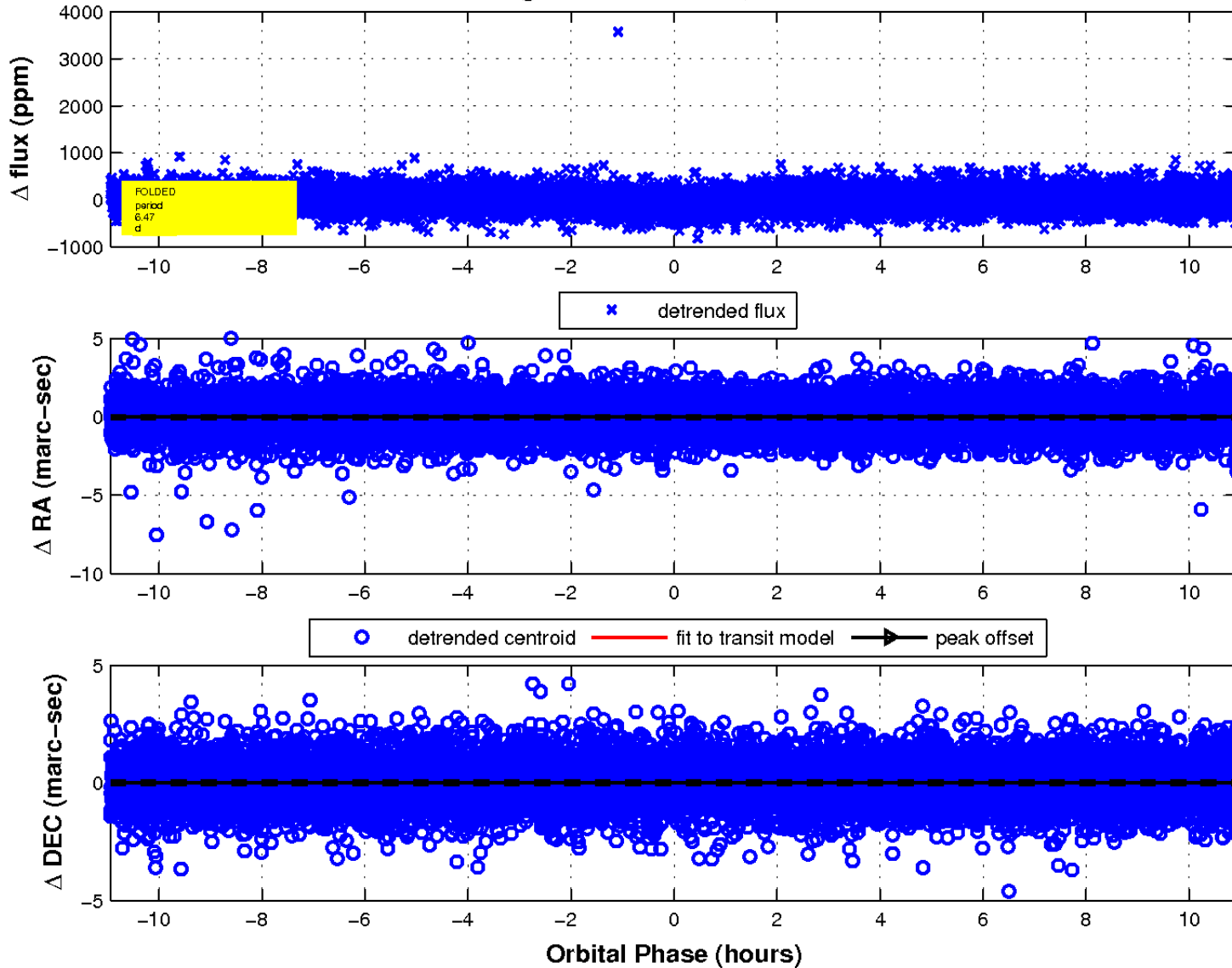
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

