

KIC 005003670

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})
005003670-01	OBS	4524.01	7.991455	136.253505	143.5	3.712	10.7	11.2	1.01	5700	1.43	156.06
005003670-02	OBS	4524.02	4.526279	134.337813	102.9	2.962	9.3	9.7	1.01	5700	1.23	333.02
005003670-03	OBS	4524.03	3.339253	134.156792	87.9	2.486	8.4	8.7	1.01	5700	1.08	499.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005003670-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005003670-02	OBS	PC	0.61	0	0	0	0	NO_COMMENT
005003670-03	OBS	PC	0.99	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.

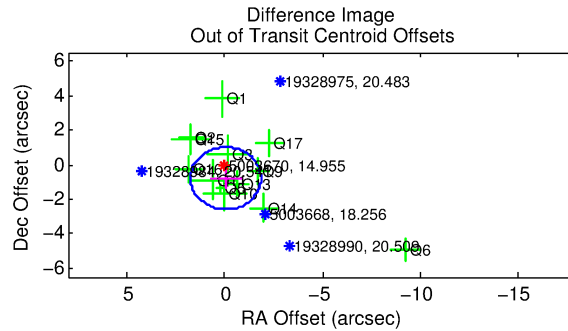
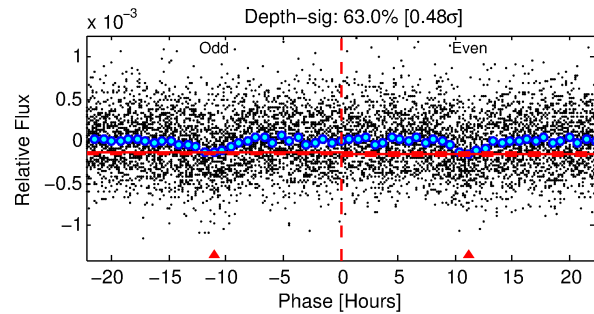
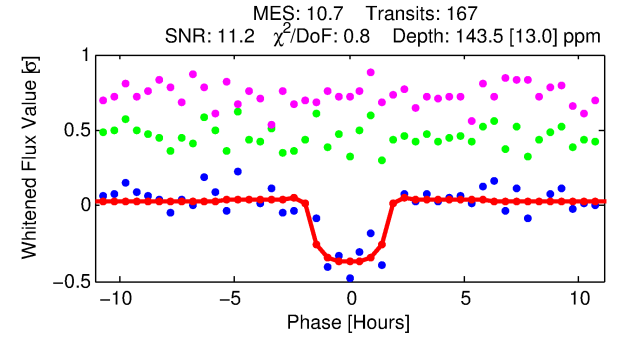
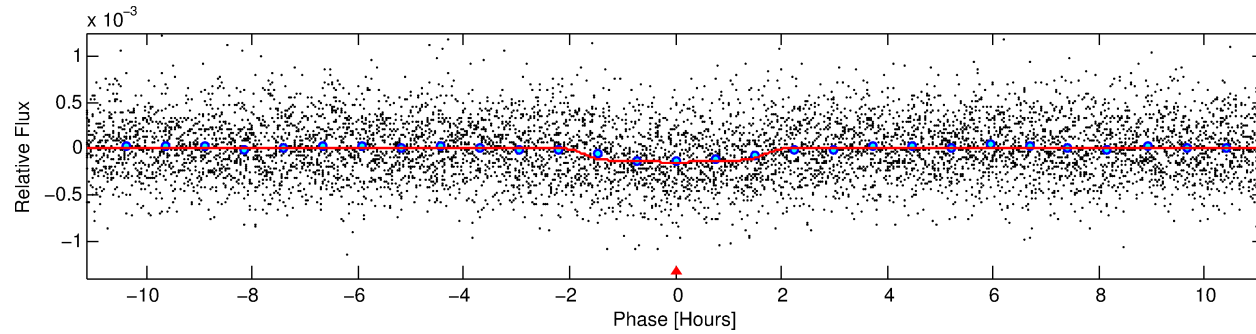
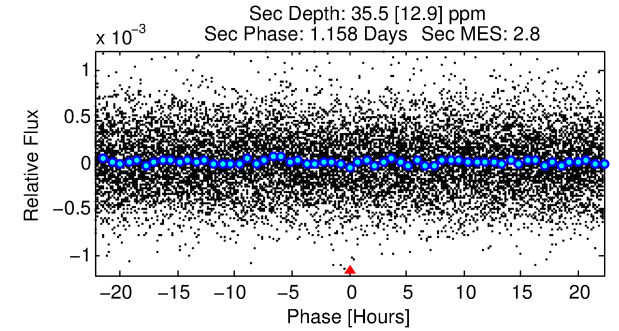
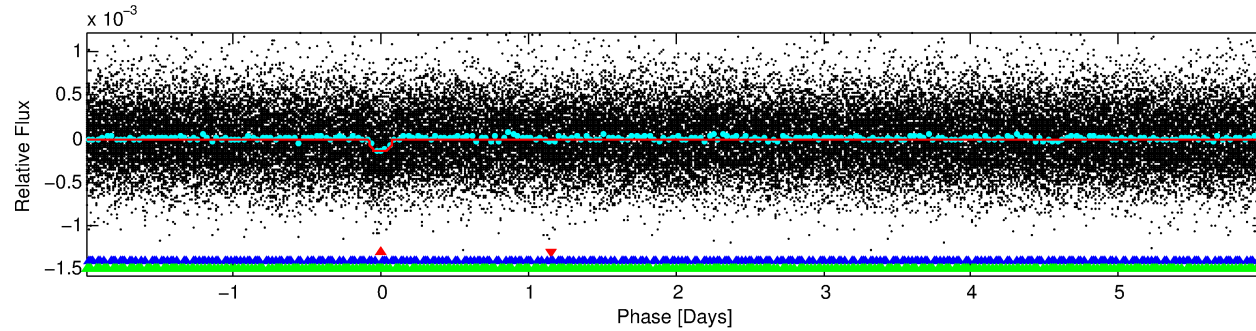
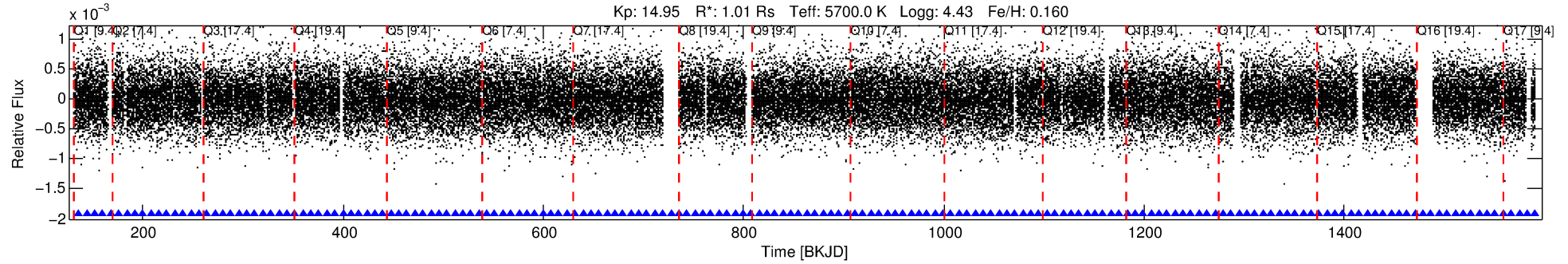
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005003670-01

No Significant Match Found

DV One-Page Summary

KIC: 5003670 Candidate: 1 of 3 Period: 7.991 d
KOI: K04524.01 Corr: 0.928



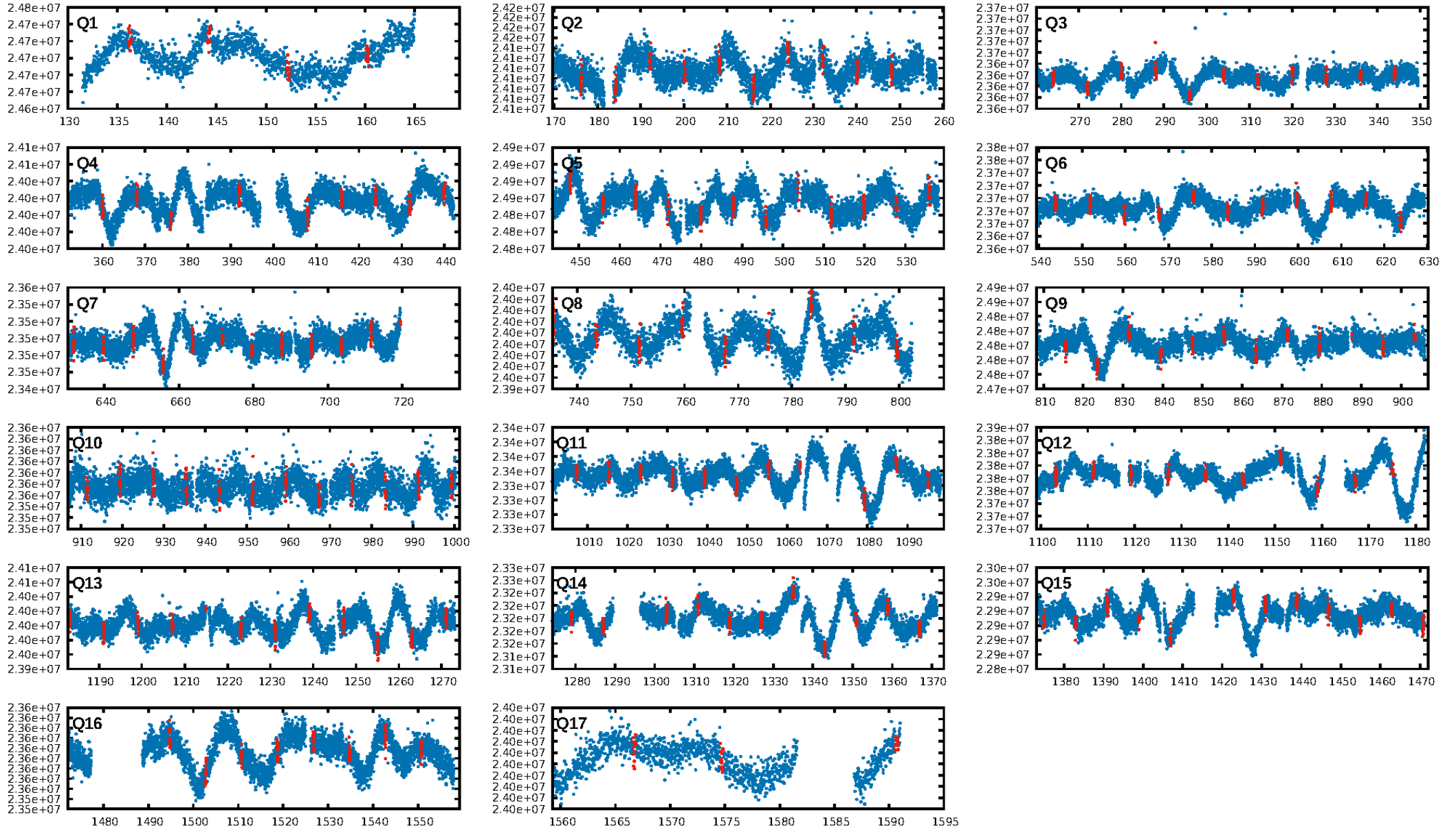
DV Fit Results:

Period = 7.99146 [0.00006] d
Epoch = 136.2535 [0.0060] BKJD
Rp/R* = 0.0130 [0.0064]
a/R* = 7.86 [17.61]
b = 0.90 [0.52]
Seff = 156.06 [33.03]
Teff = 901 [48] K
Rp = 1.43 [0.74] Re
a = 0.0783 [0.0104] AU
Ag = 58.36 [62.45] [0.92σ]
Teffp = 3851 [1013] K [2.91σ]

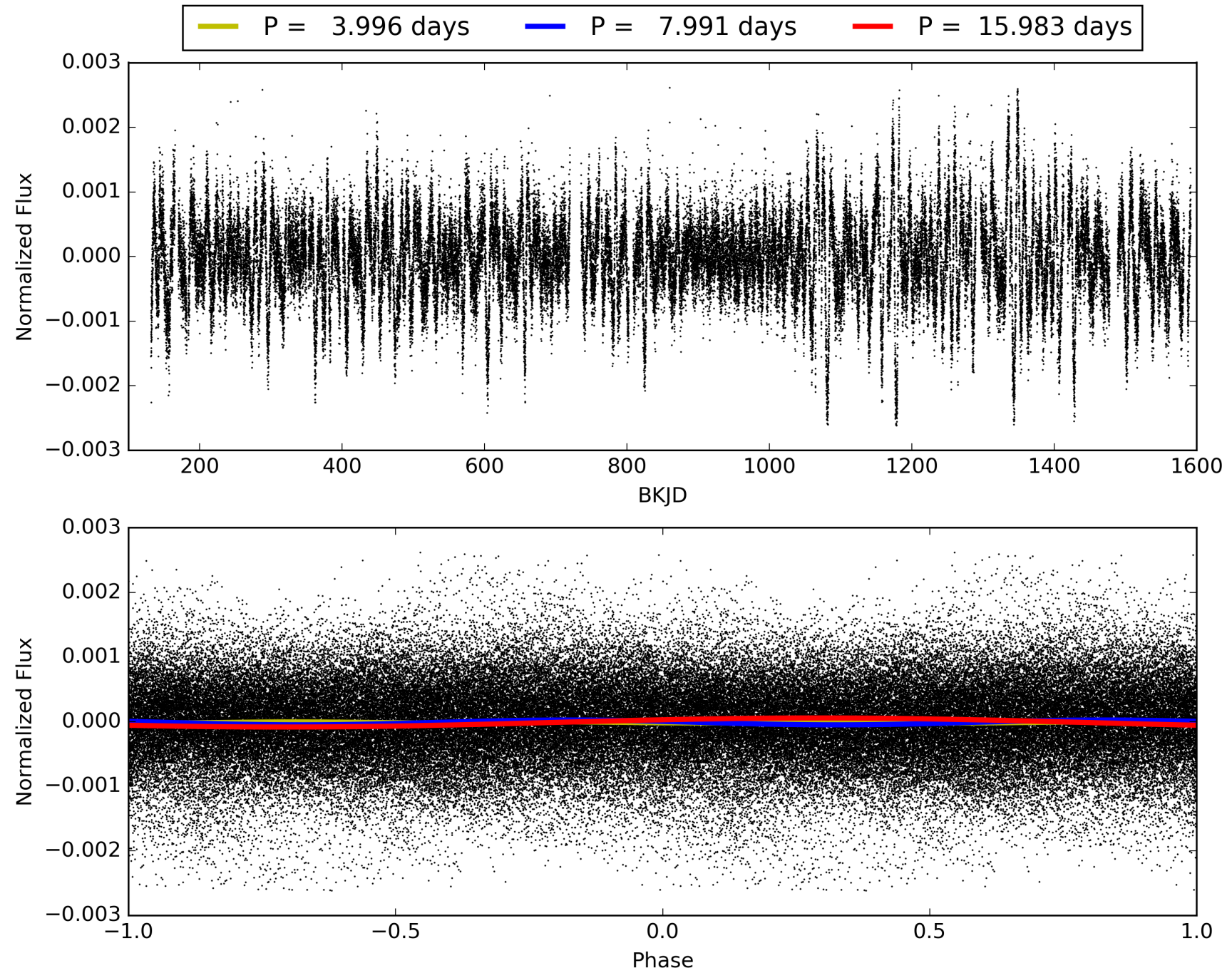
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.51σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.90e-26
RollingBand-fgt: 1.00 [160/160]
GhostDiagnostic-chr: 3.521
Centroid-sig: 7.4%
Centroid-so: 1.616 arcsec [1.45σ]
OotOffset-rm: 0.795 arcsec [1.32σ]
KicOffset-rm: 0.896 arcsec [1.43σ]
OotOffset-st: 4/3/1/5 [13]
KicOffset-st: 4/3/1/5 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005003670-01, PDC Light Curves

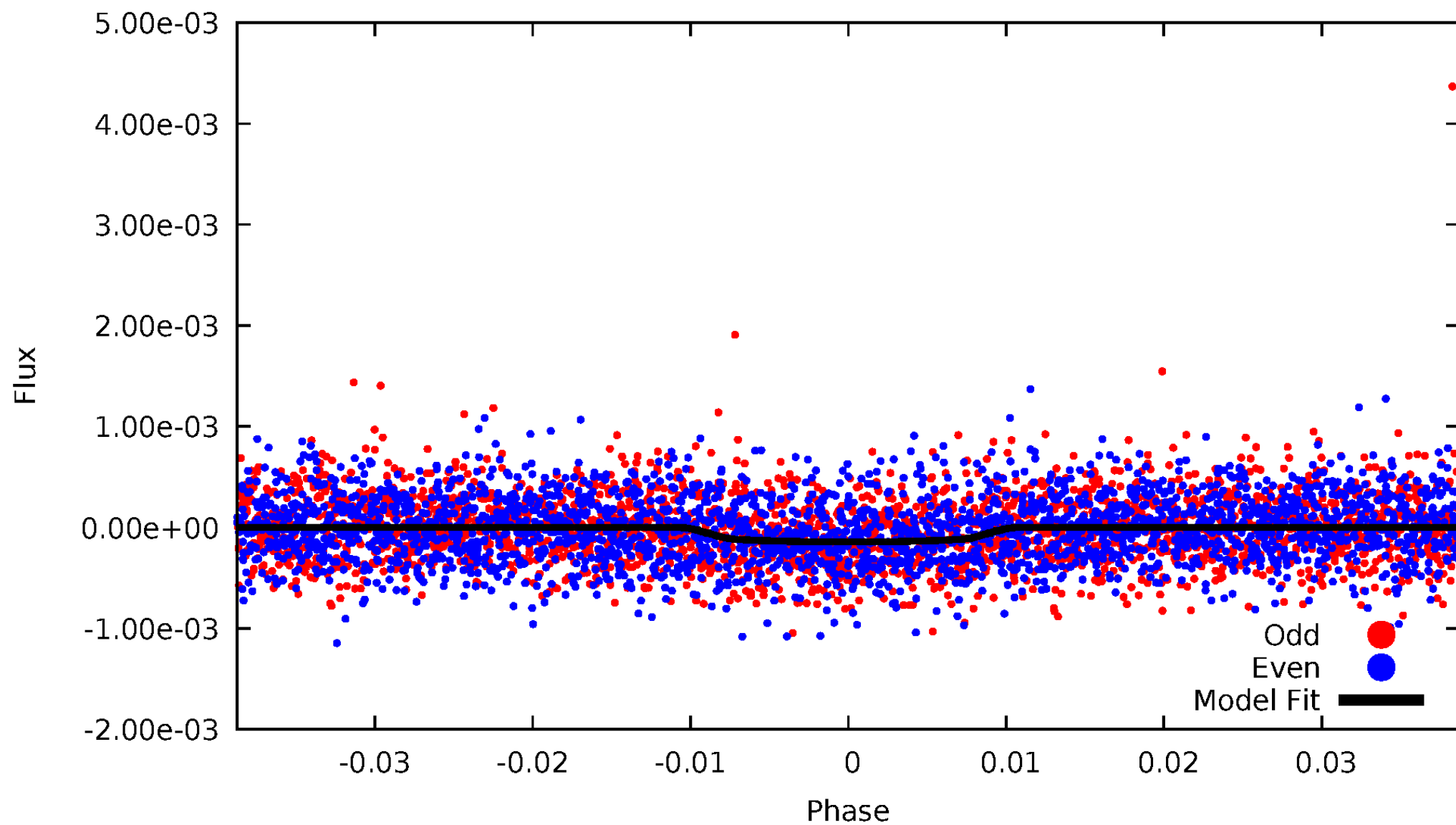


TCE 005003670-01



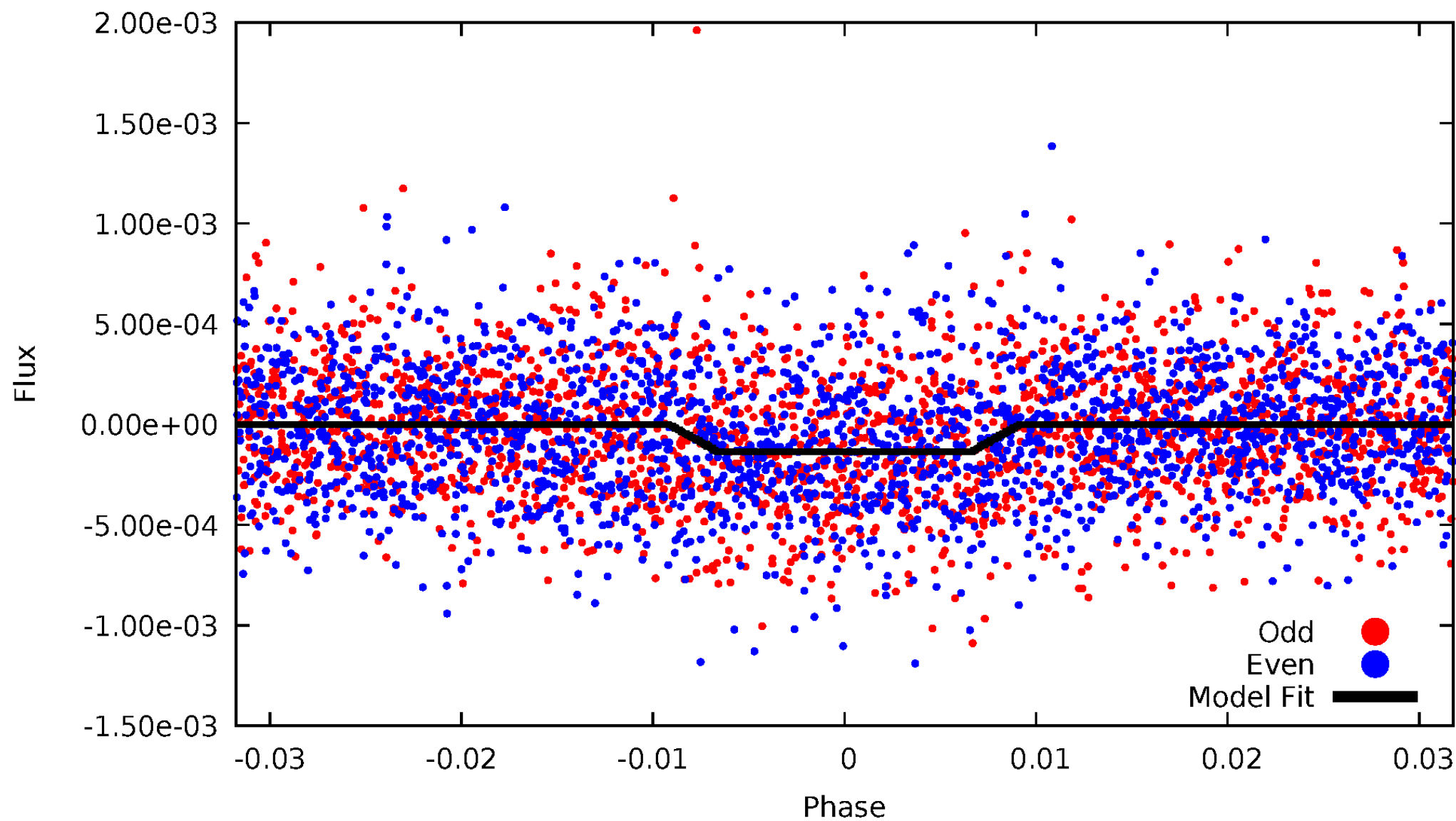
DV Odd/Even

TCE 005003670-01



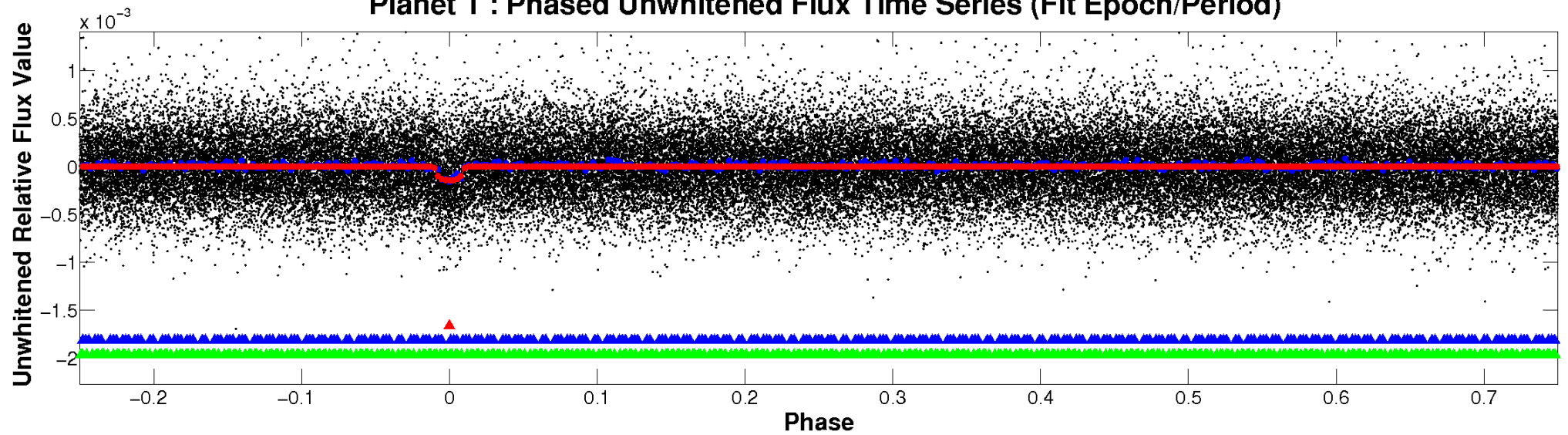
ALT Odd/Even

TCE 005003670-01

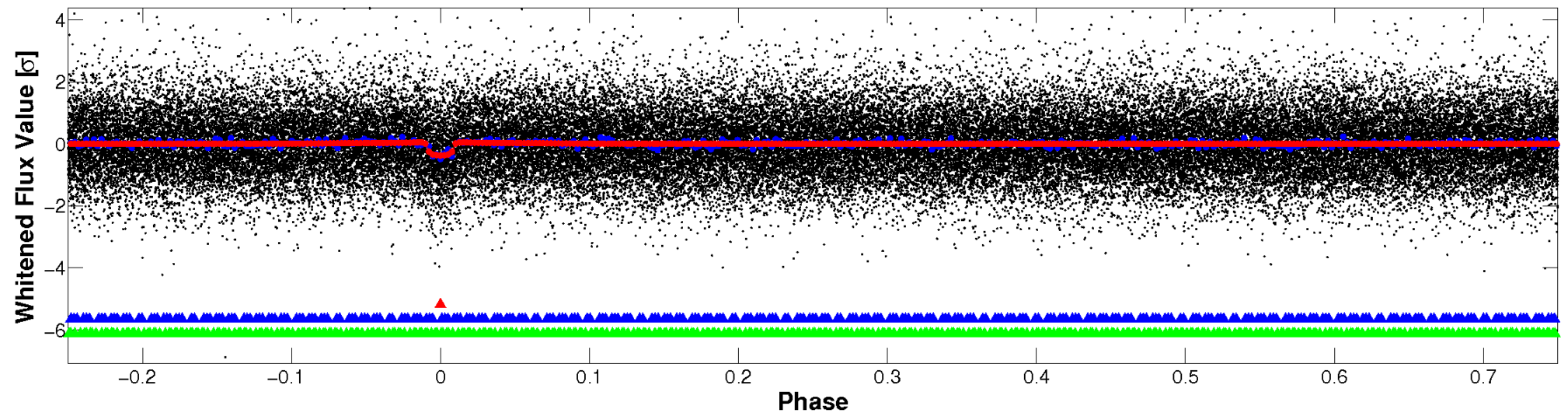


Non-Whitened Vs. Whitened Light Curve

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

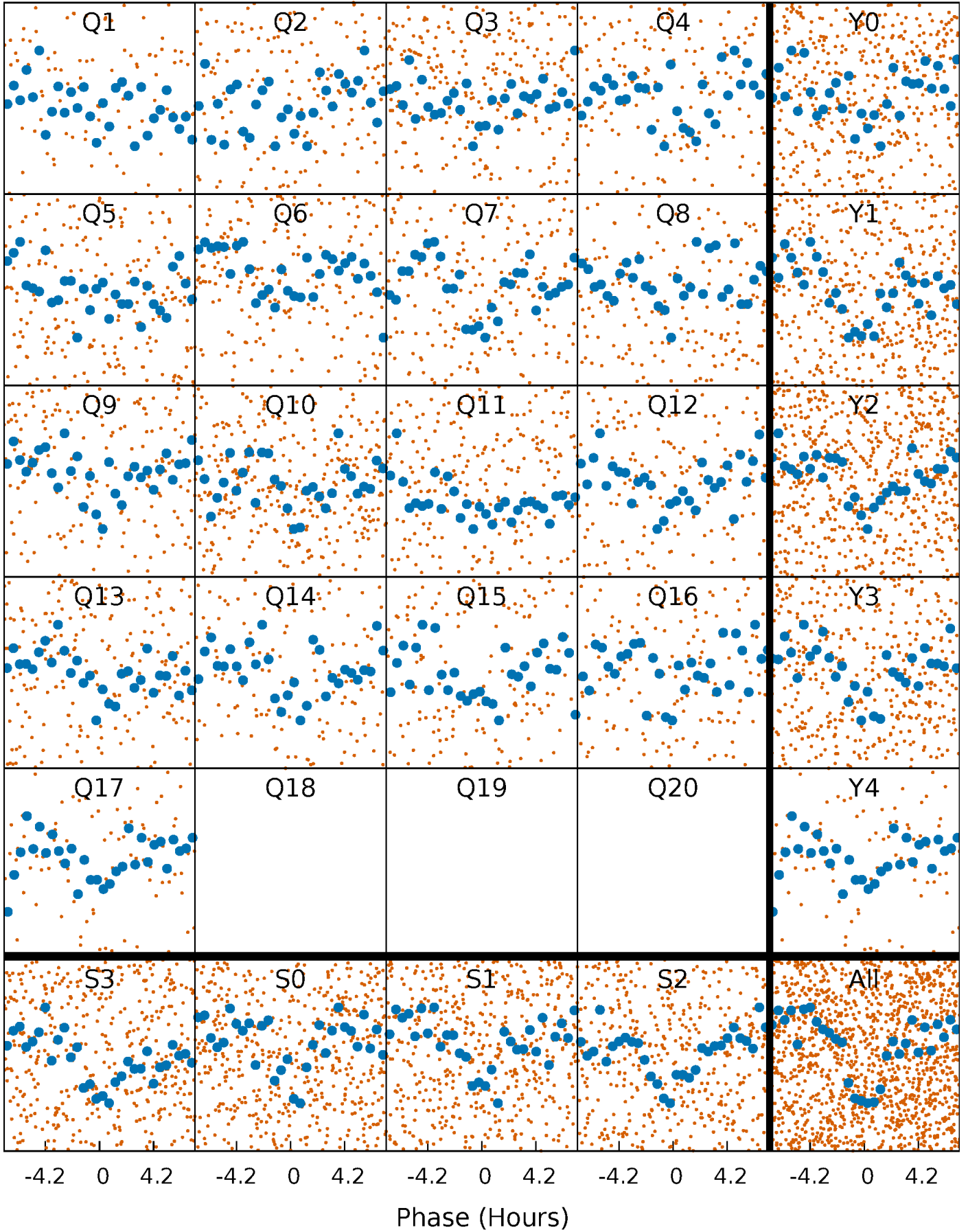


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



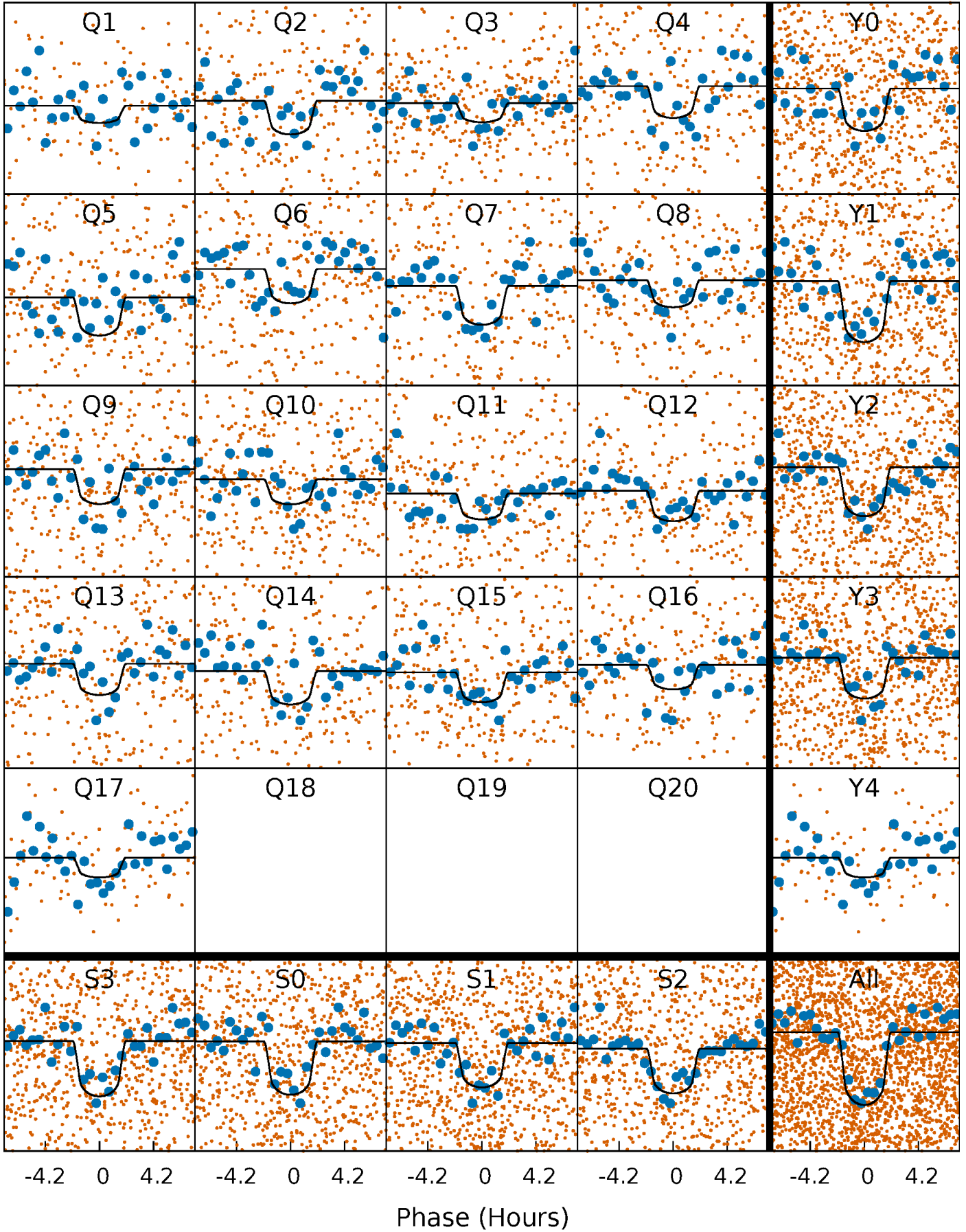
PDC Quarter-Phased Transit Curves

TCE 005003670-01 P= 7.991455 Days $T_0=136.253505$ (BKJD)



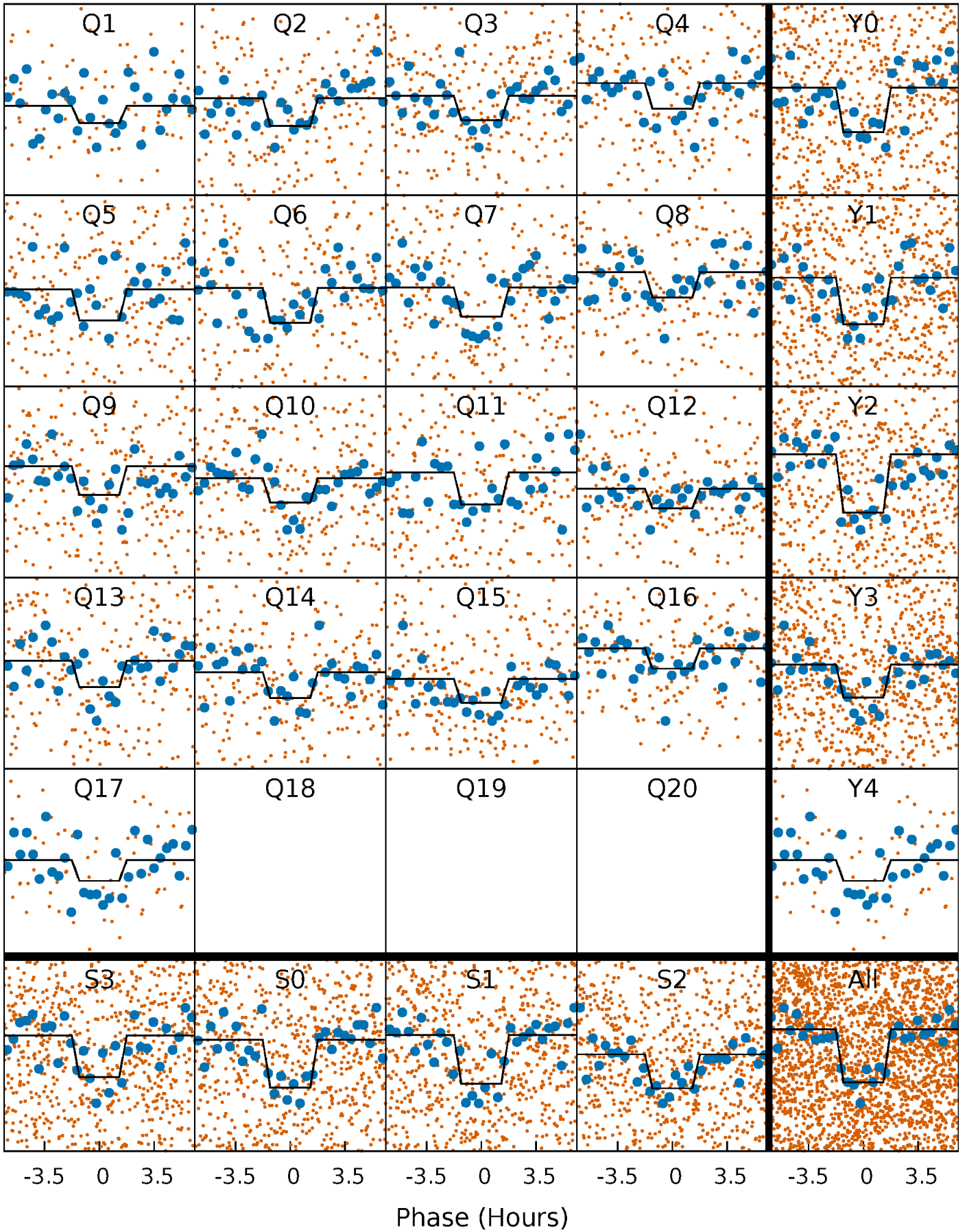
DV Quarter-Phased Transit Curves

TCE 005003670-01 P= 7.991455 Days $T_0=136.253505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

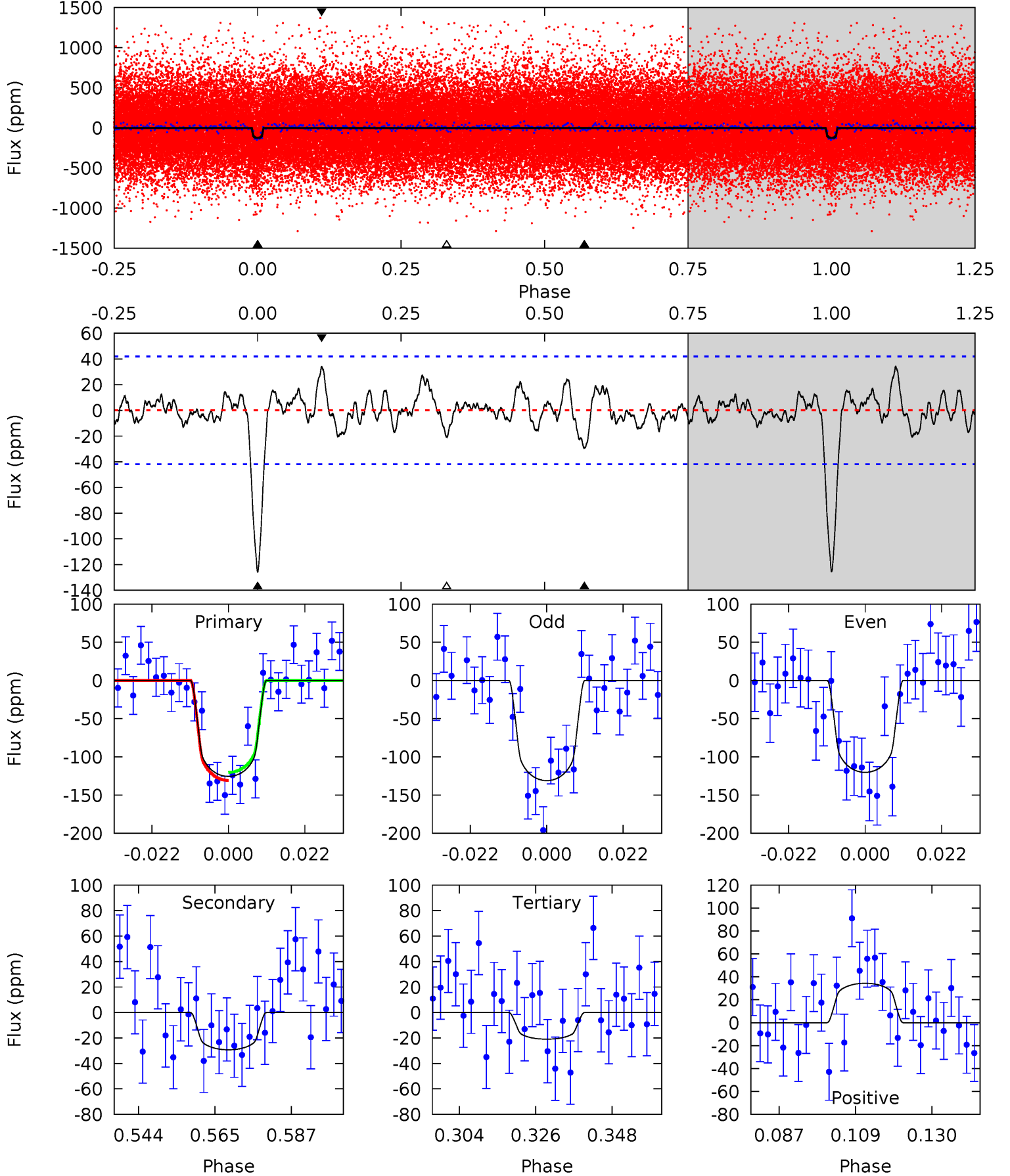
TCE 005003670-01 P= 7.991471 Days $T_0=136.257539$ (BKJD)



DV Model-Shift Uniqueness Test

005003670-01, P = 7.991455 Days, E = 128.262050 Days

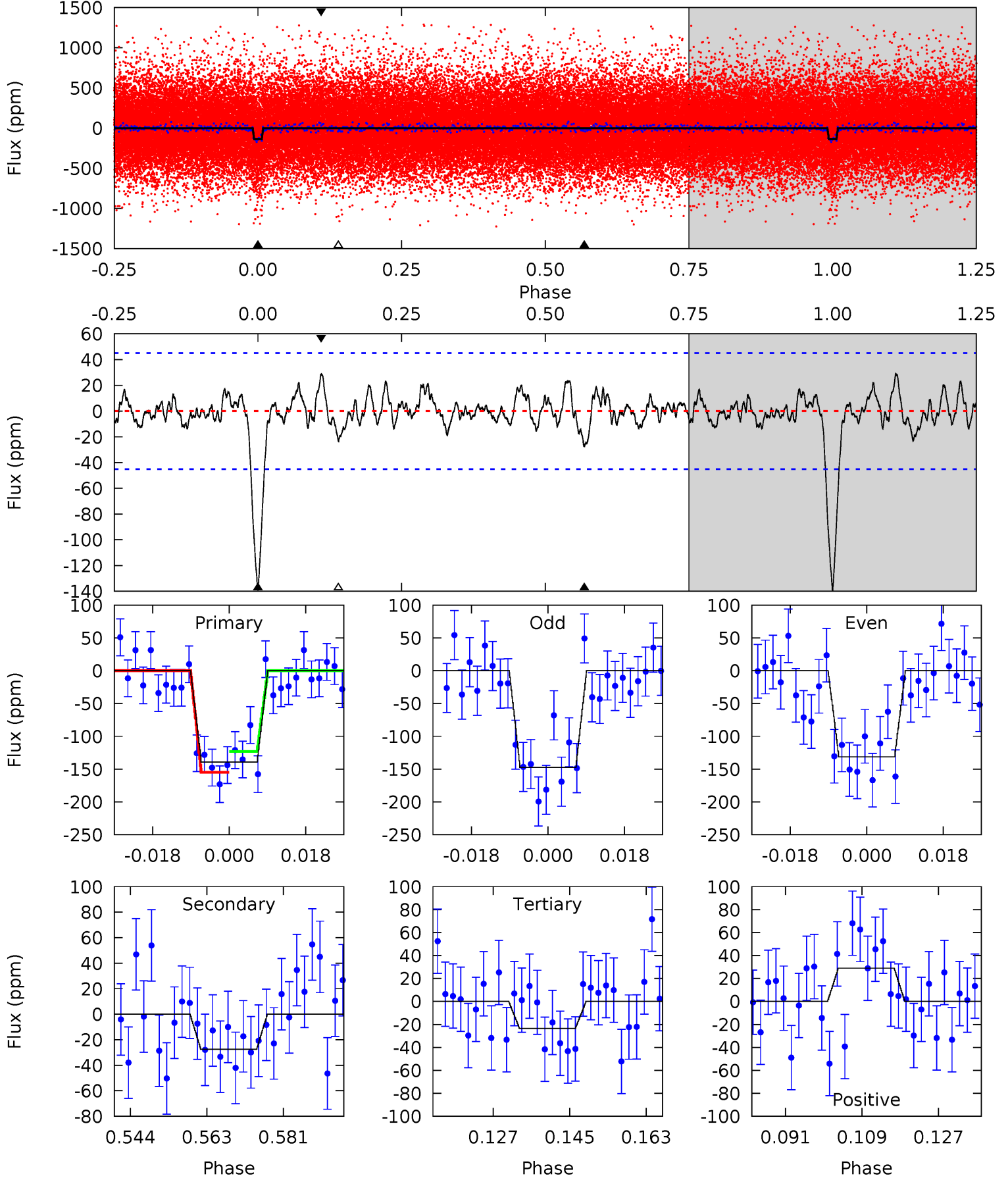
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	3.41	2.44	4.00	4.88	2.29	1.12	12.2	10.6	0.97	-0.59	0.63	1.10	0.21	0.61



Alt Model-Shift Uniqueness Test

005003670-01, P = 7.991471 Days, E = 128.266068 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	2.99	2.57	3.16	4.91	2.36	0.97	12.6	12.0	0.43	-0.17	0.87	1.10	0.17	1.73



Stellar Parameters For KIC 005003670

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5700^{+77}_{-77}	$4.434^{+0.063}_{-0.117}$	$0.160^{+0.150}_{-0.150}$	$1.006^{+0.148}_{-0.079}$	$1.003^{+0.056}_{-0.062}$	$1.385^{+0.332}_{-0.454}$
	+1%/-1%	+1%/-3%	+94%/-94%	+15%/-8%	+6%/-6%	+24%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 005003670-01 / KOI 4524.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-29 ± 9	$1.53^{+0.68}_{-0.72}$	1265^{+52}_{-38}	3931^{+978}_{-516}	42^{+96}_{-24}
Alt.	-27 ± 9	$1.27^{+0.73}_{-0.62}$	1263^{+48}_{-34}	4086^{+1349}_{-609}	54^{+164}_{-33}

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

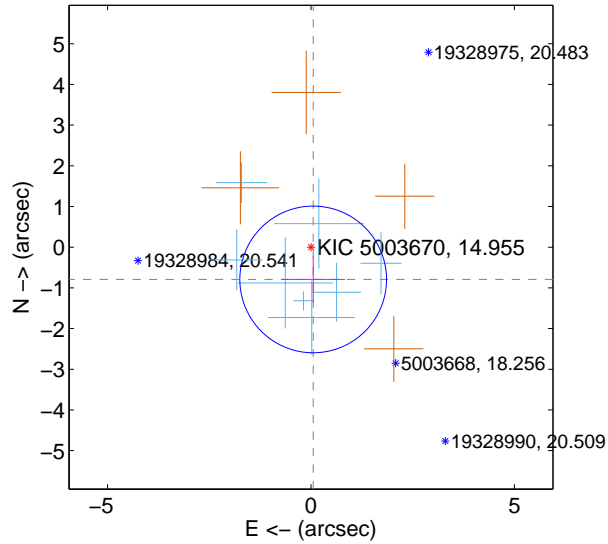
Supplemental centroid analysis for 005003670-01. Kepler magnitude: 14.96. Transit SNR 11.16

There are 8 quarters with good PRF difference image offsets

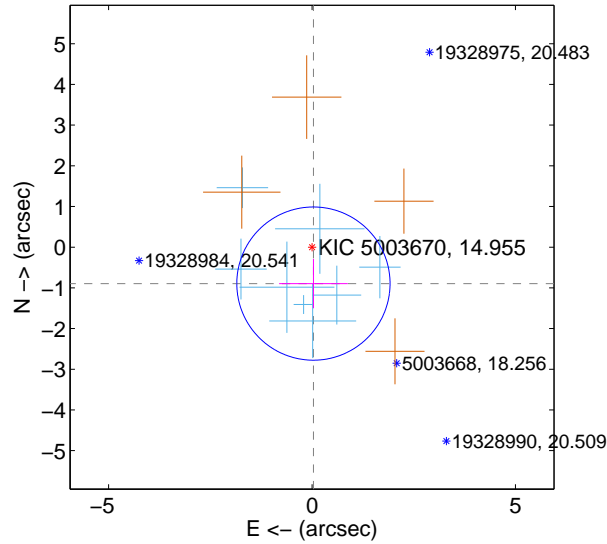
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.795 ± 0.601	1.32	-0.054 ± 0.781	-0.793 ± 0.568
PRF-fit source offset from KIC position	0.896 ± 0.628	1.43	-0.034 ± 0.845	-0.895 ± 0.606
photometric centroid source offset	1.62 ± 1.11	1.45	-1.36 ± 1.14	-0.87 ± 1.05

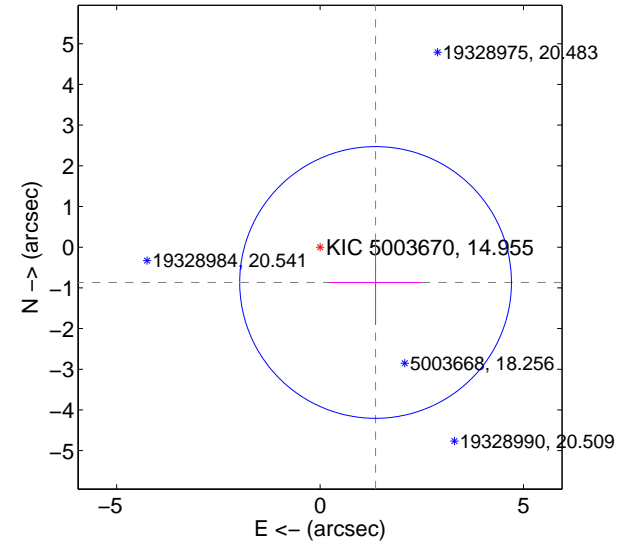
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

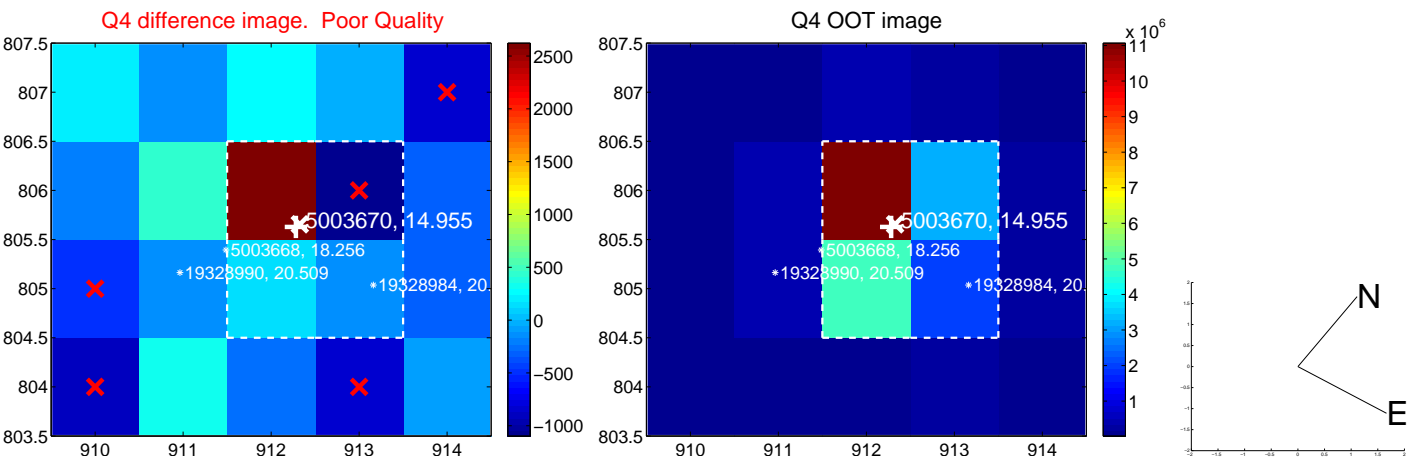
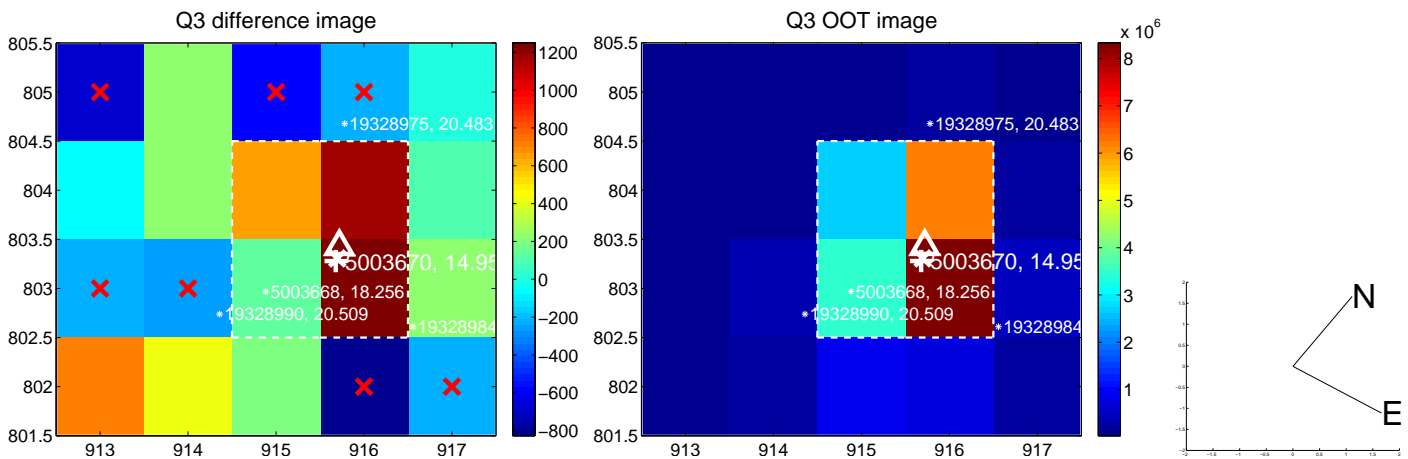
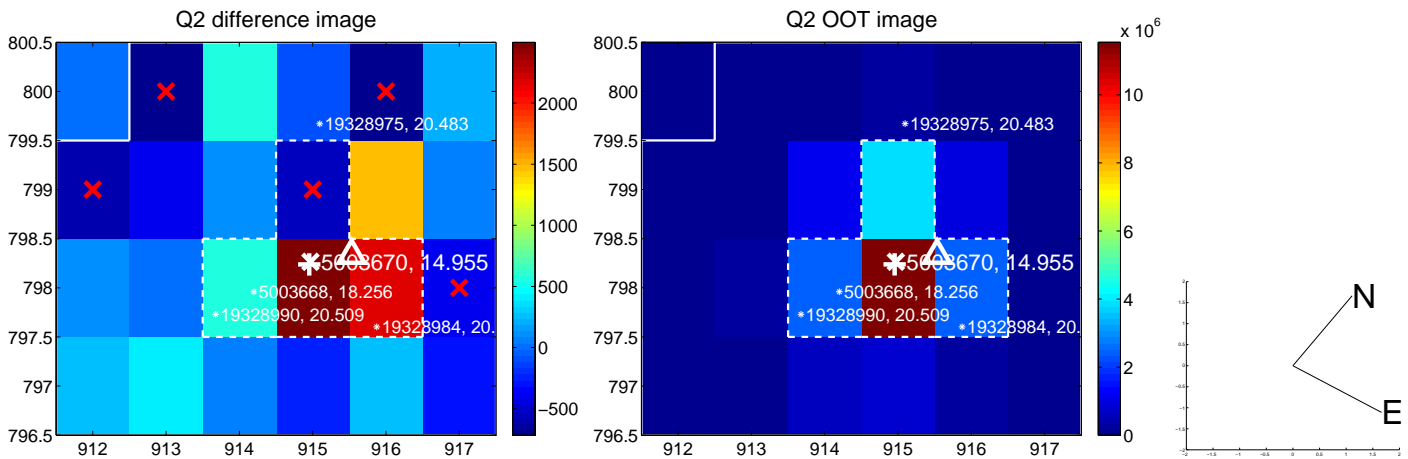
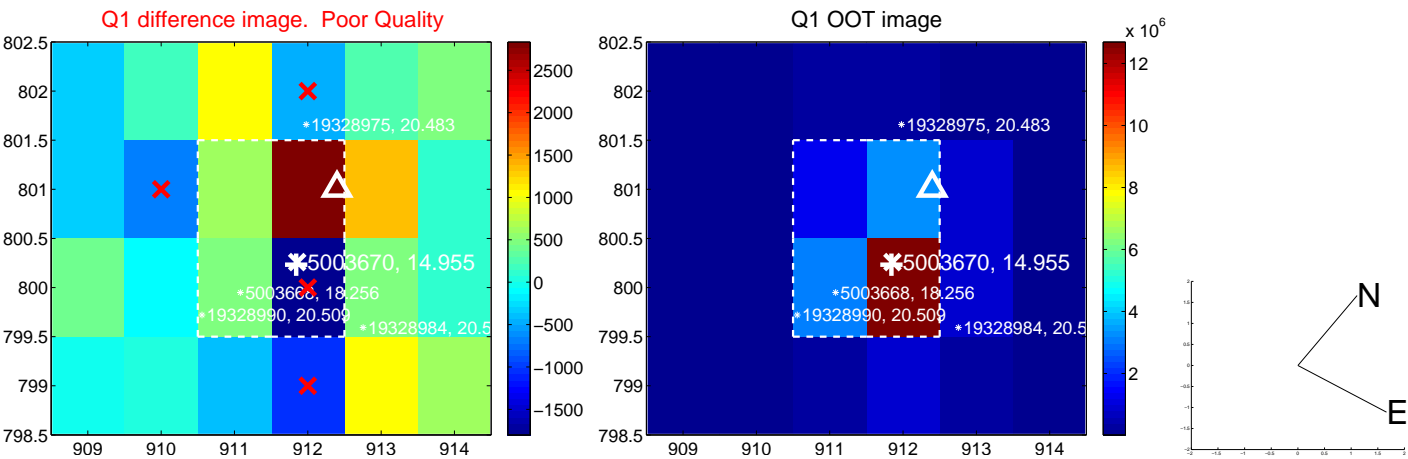


offset from photometric centroids

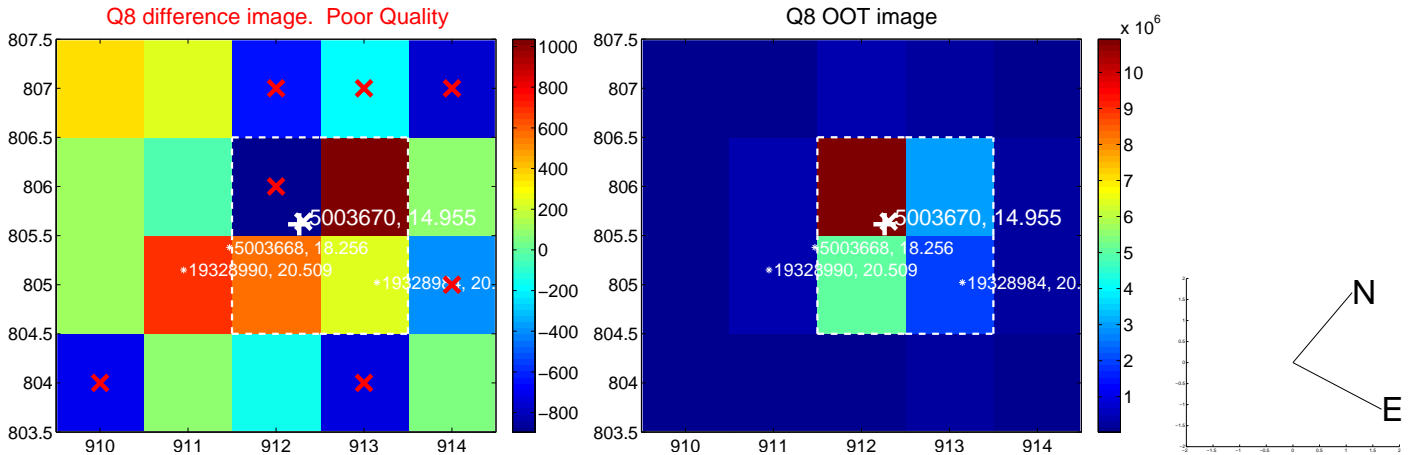
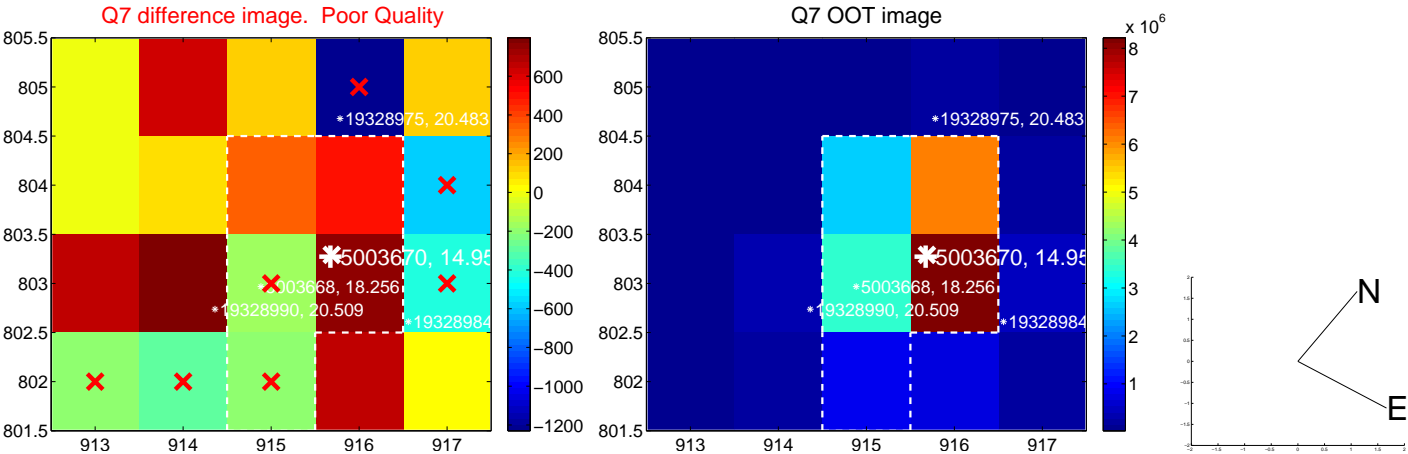
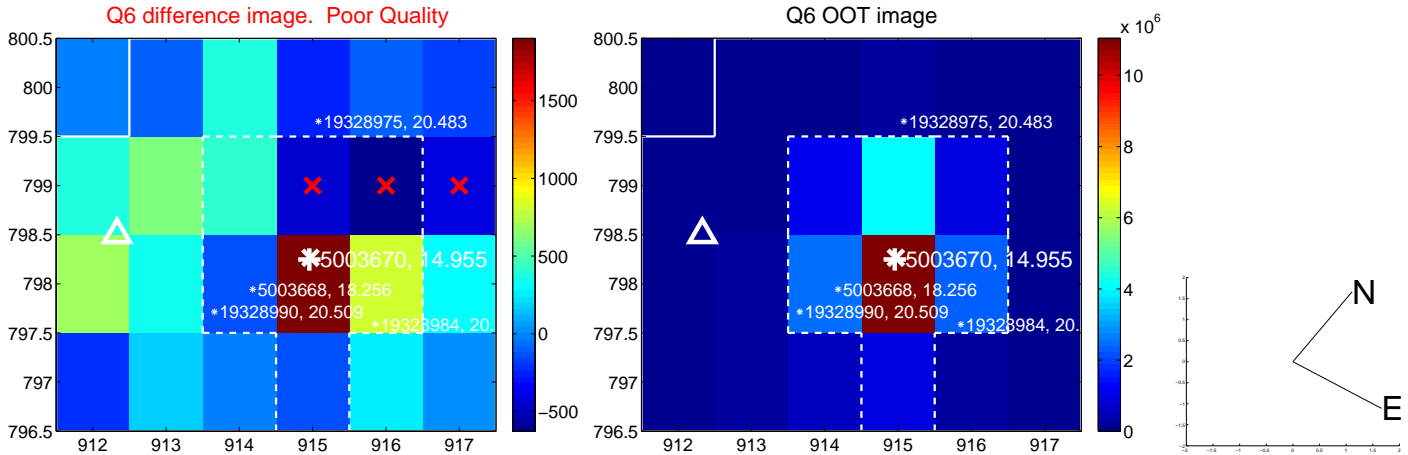
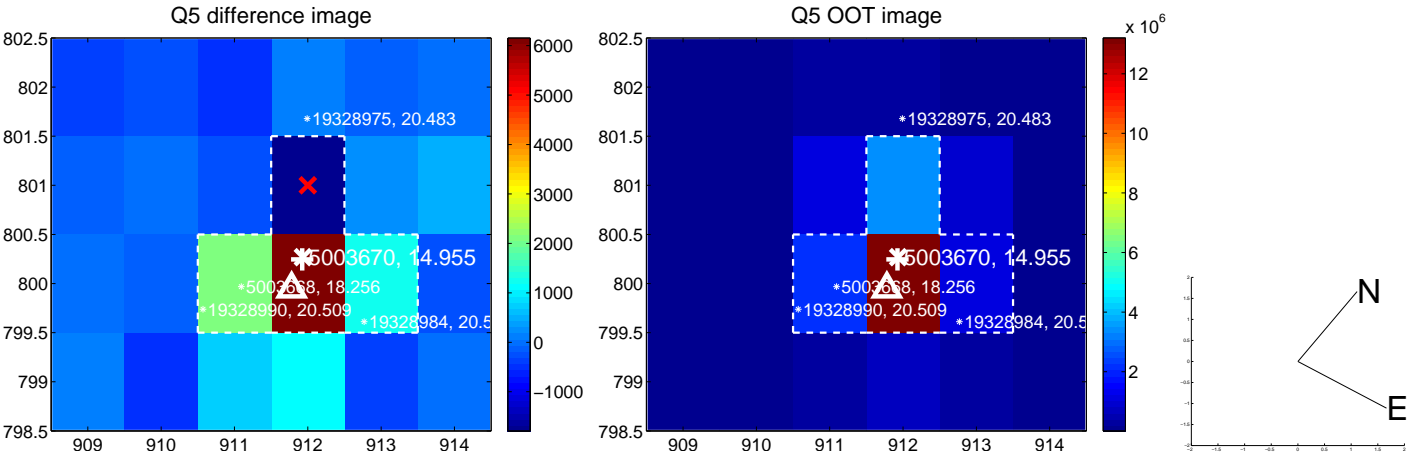


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

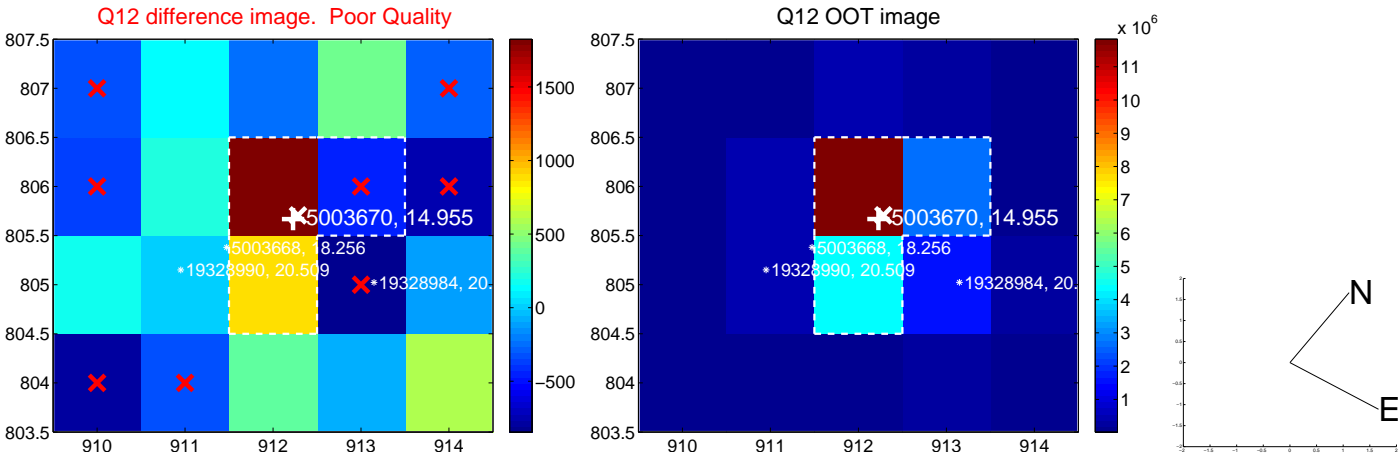
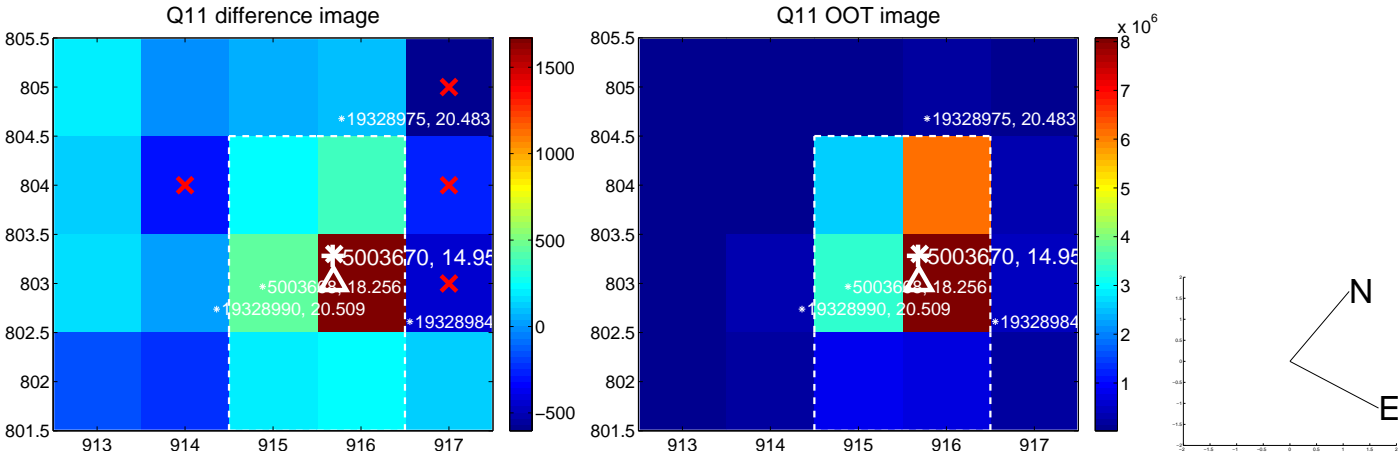
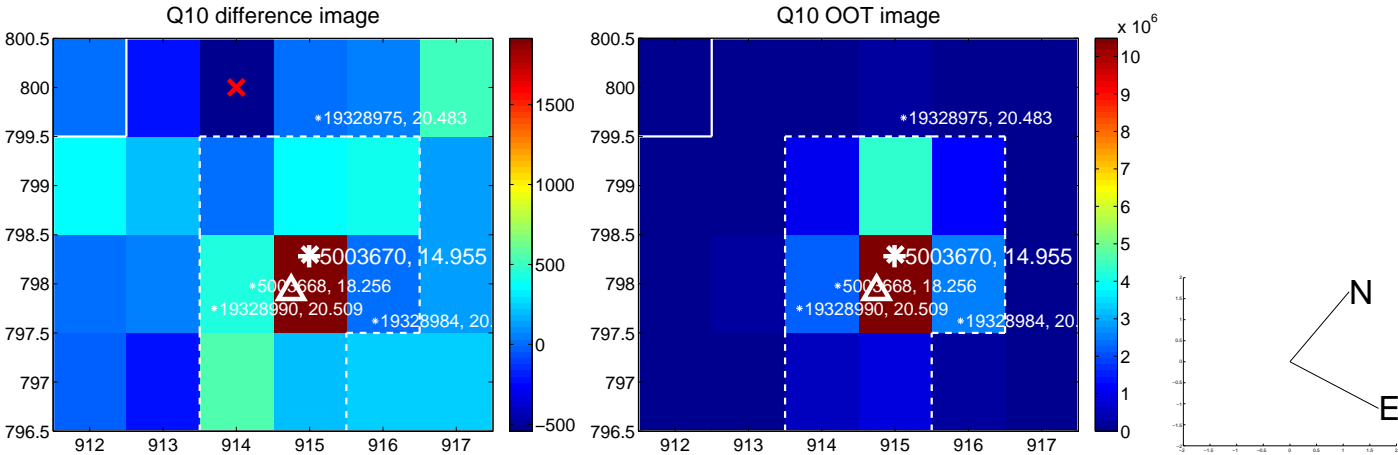
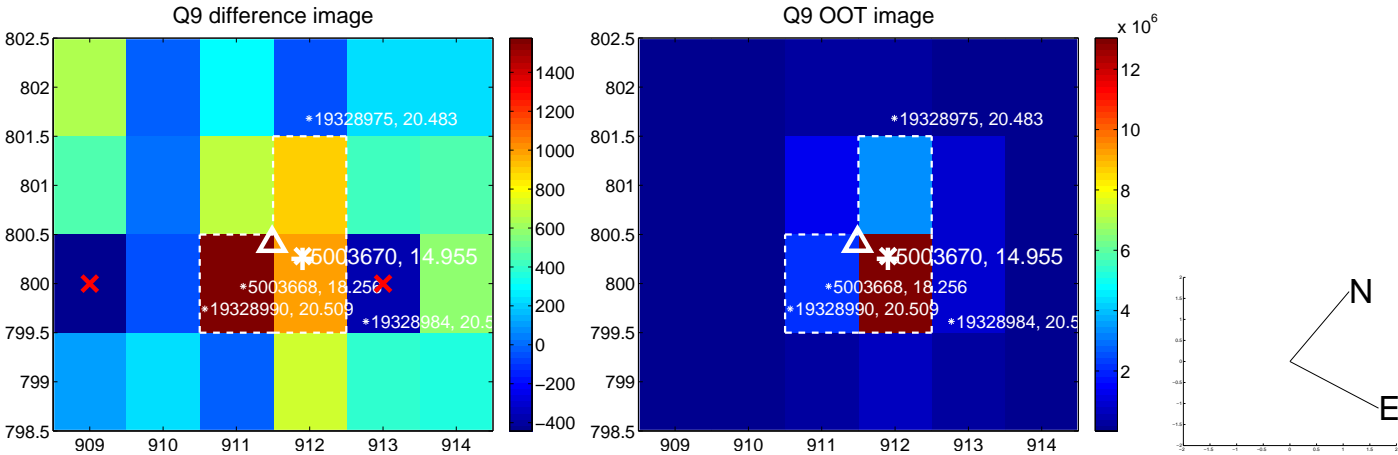
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



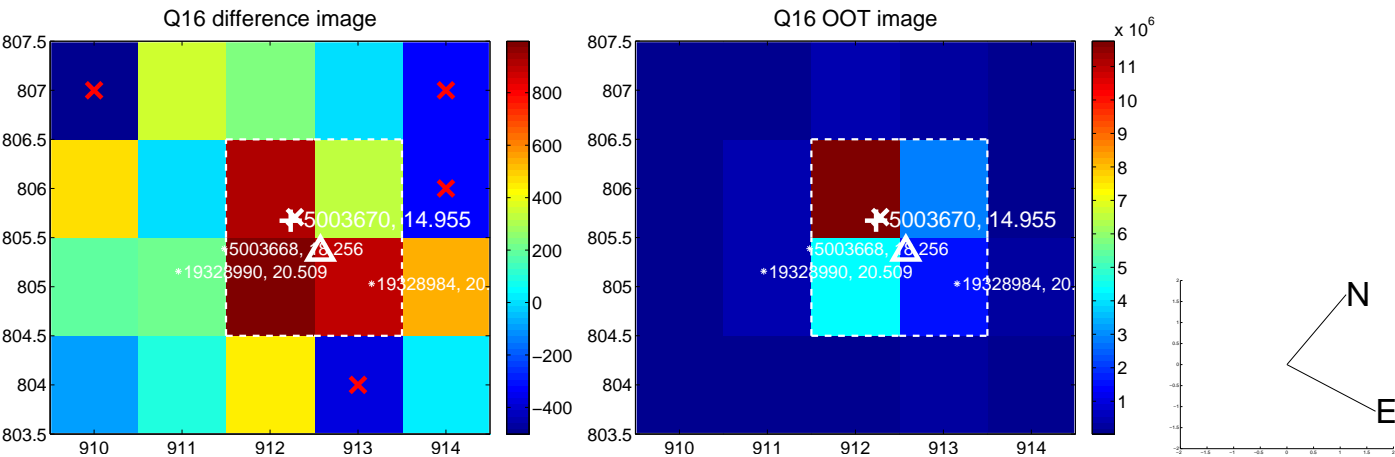
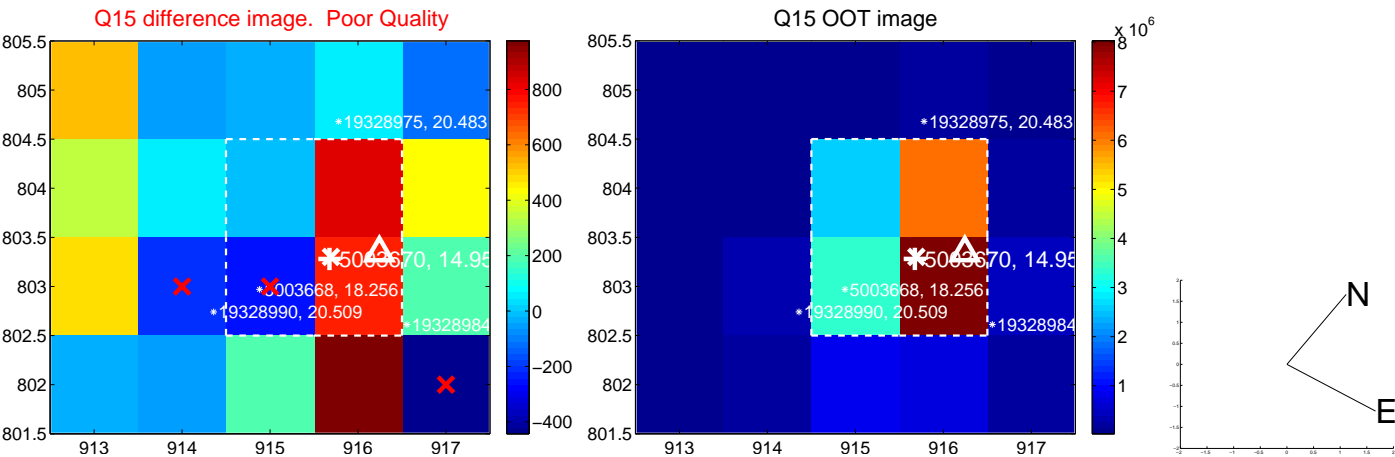
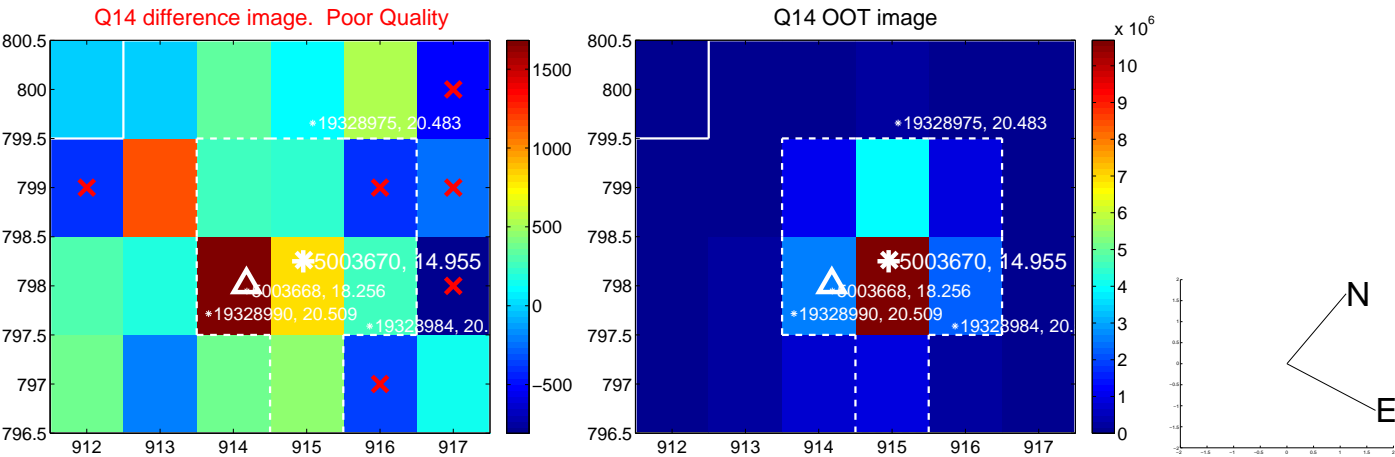
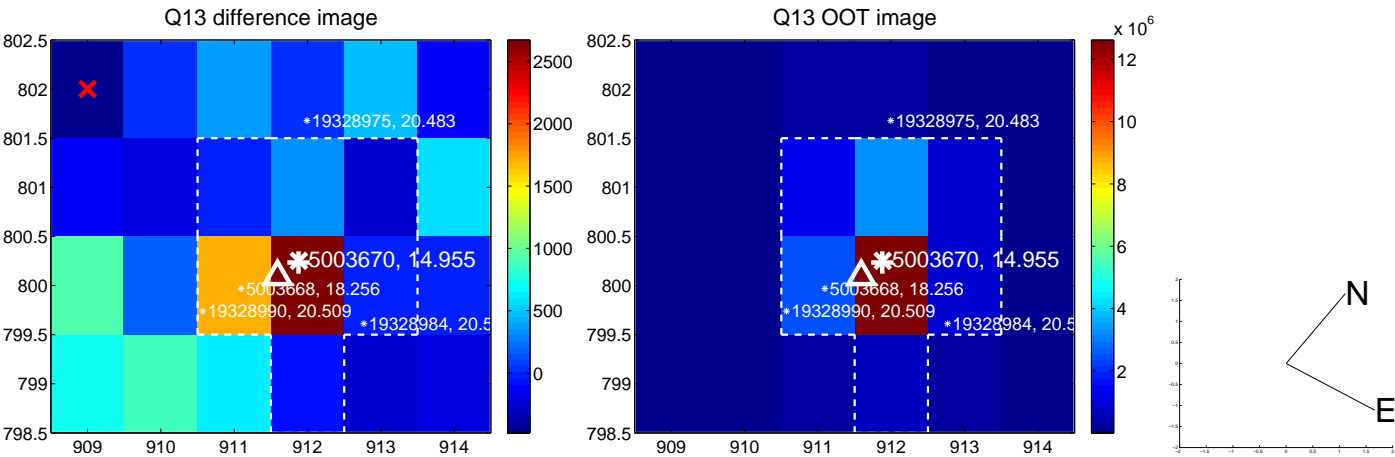
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



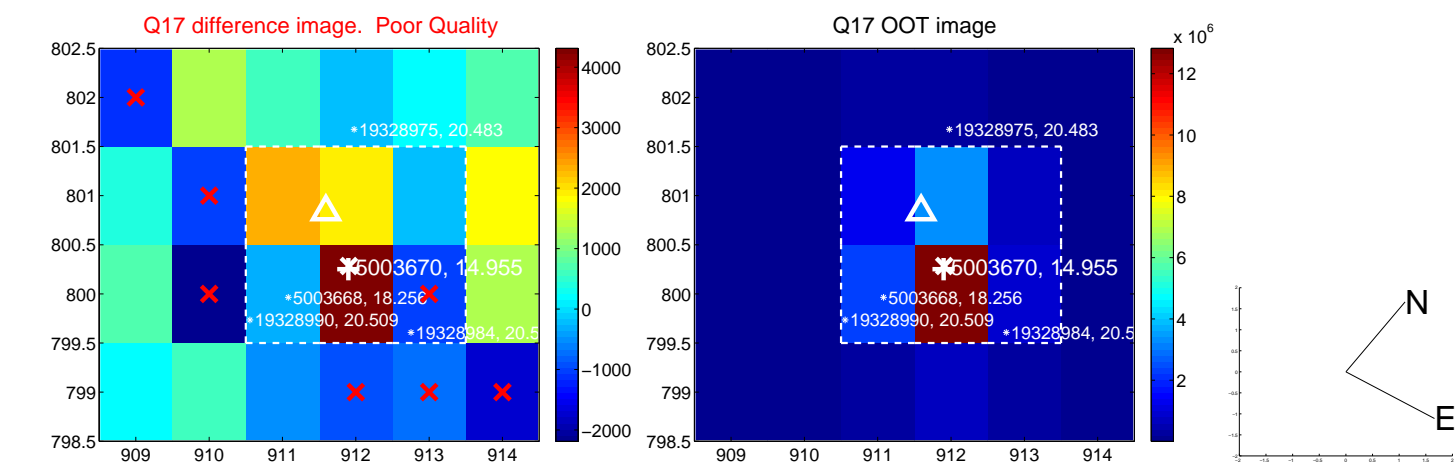
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



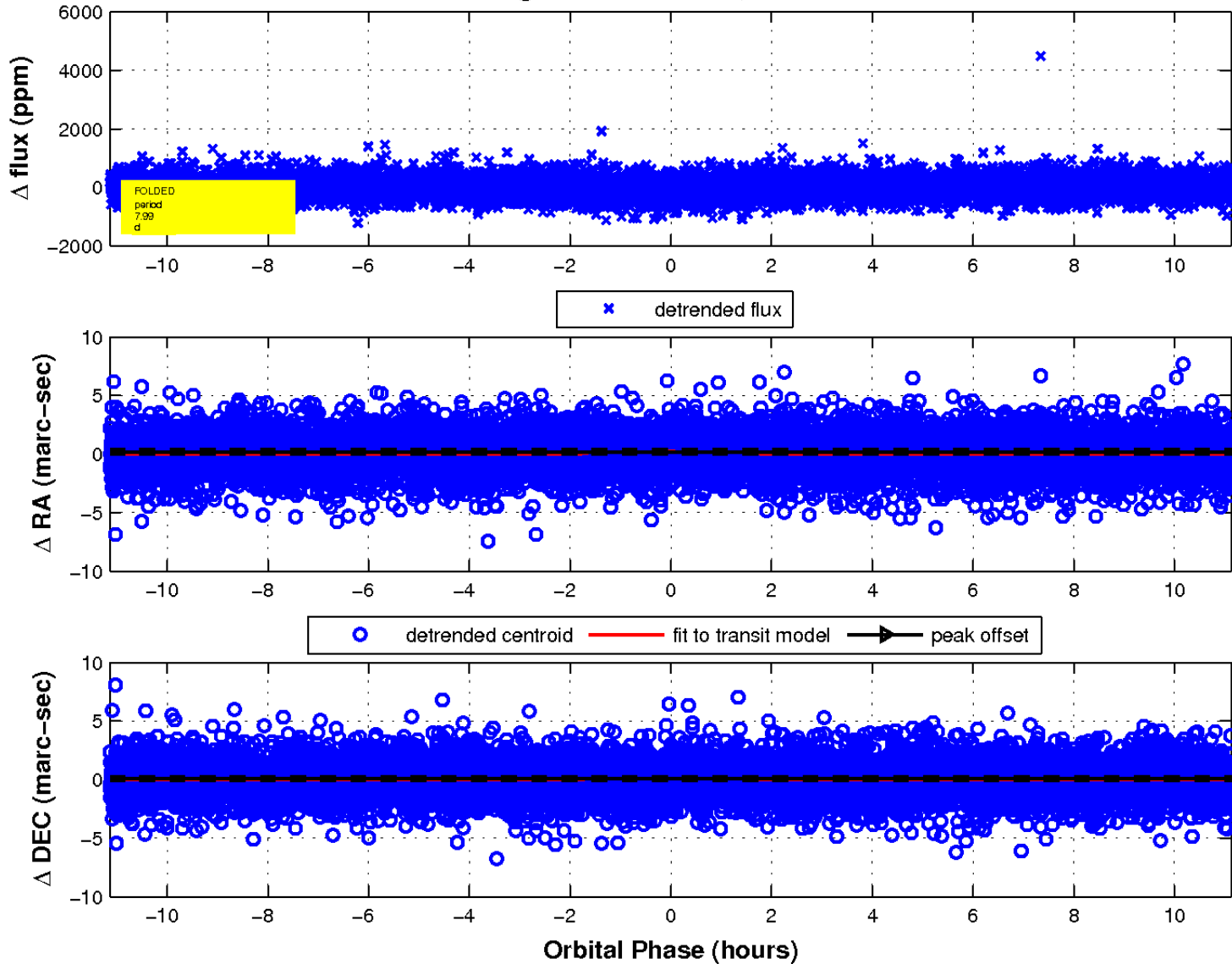
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

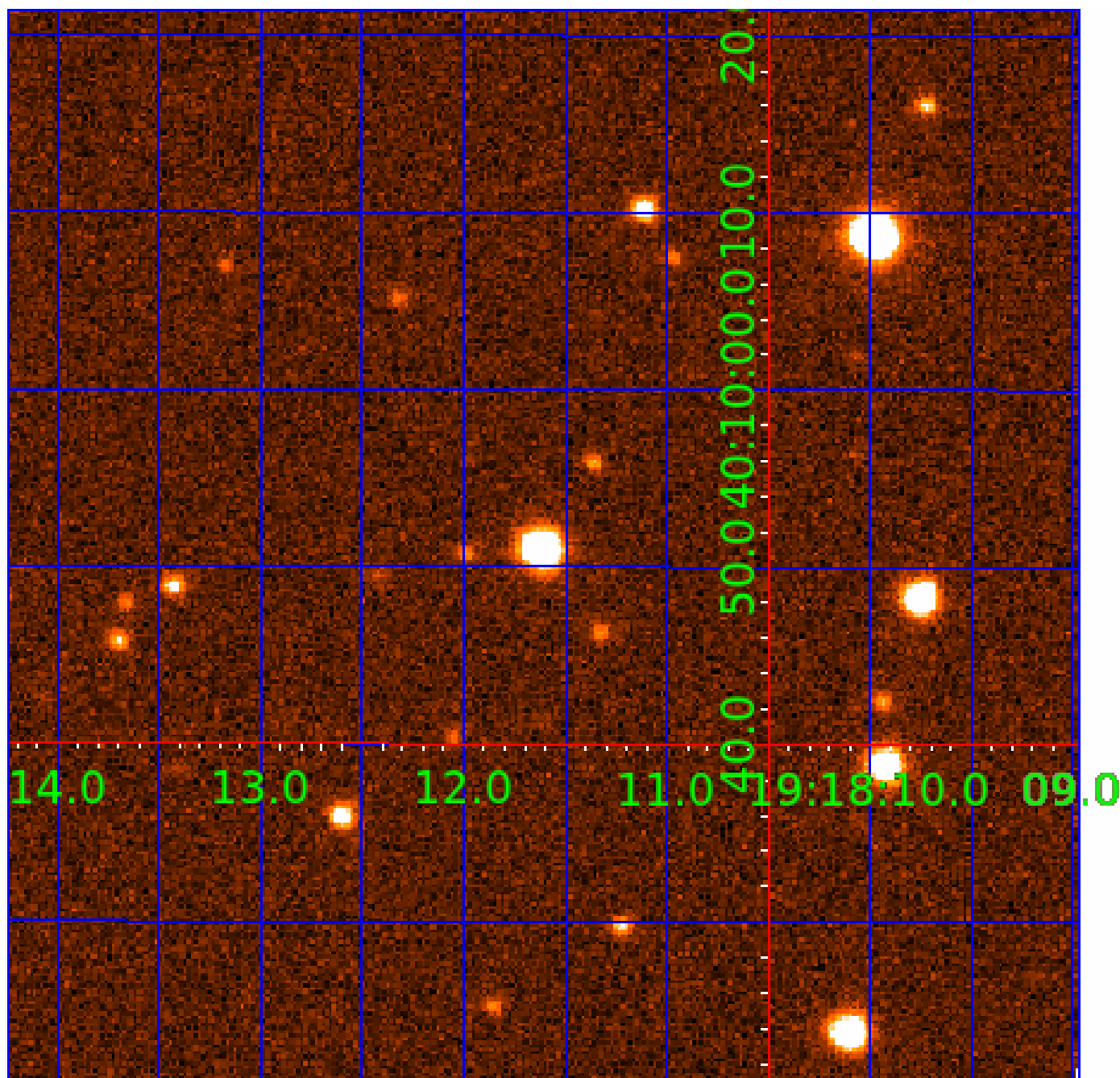


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 005003670

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})
005003670-01	OBS	4524.01	7.991455	136.253505	143.5	3.712	10.7	11.2	1.01	5700	1.43	156.06
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005003670-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005003670-02	OBS	PC	0.61	0	0	0	0	NO_COMMENT
005003670-03	OBS	PC	0.99	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.

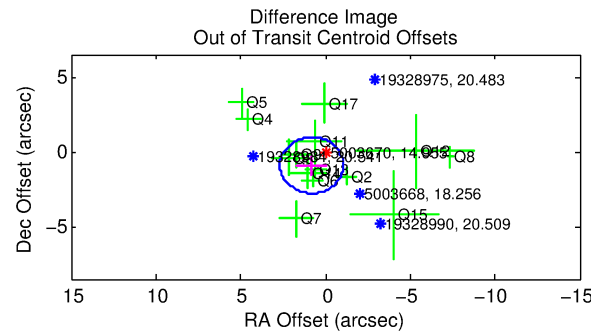
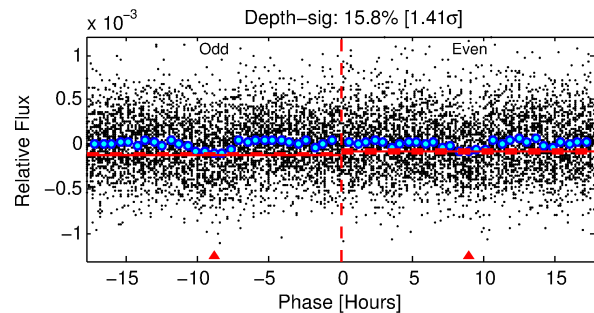
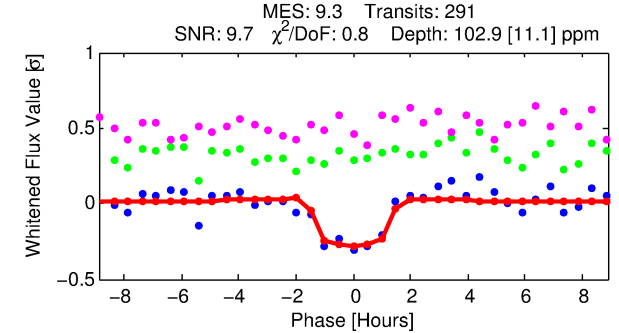
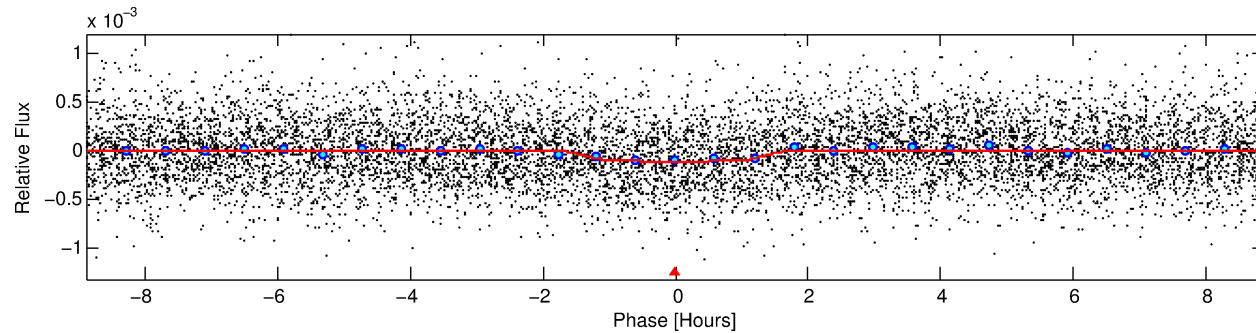
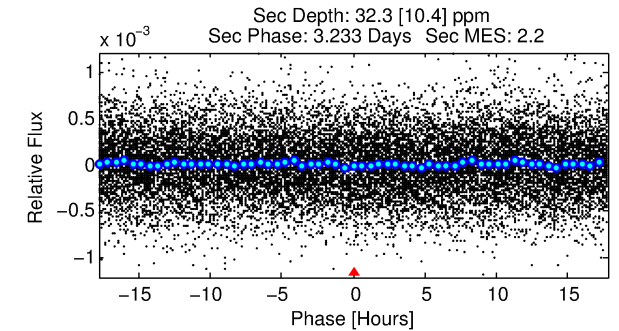
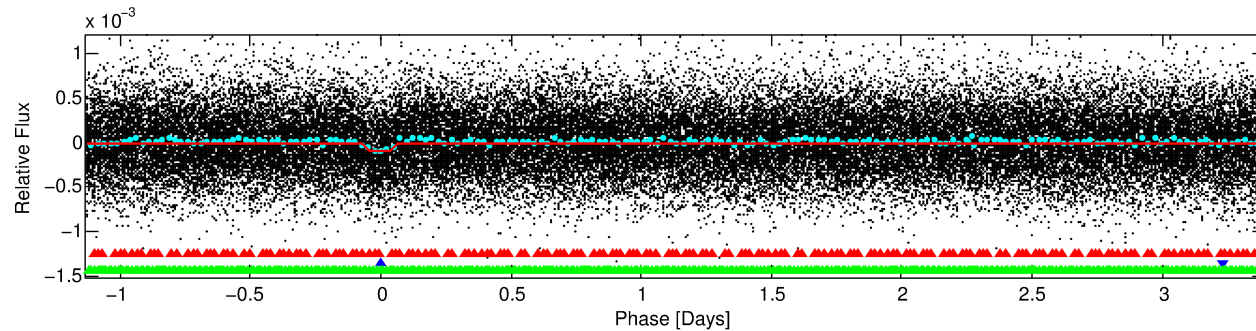
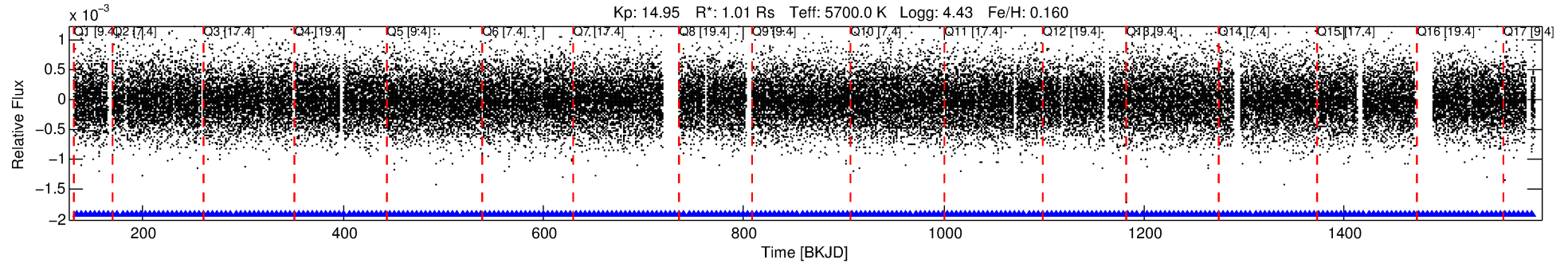
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005003670-02

No Significant Match Found

DV One-Page Summary

KIC: 5003670 Candidate: 2 of 3 Period: 4.526 d
KOI: K04524.02 Corr: 0.850



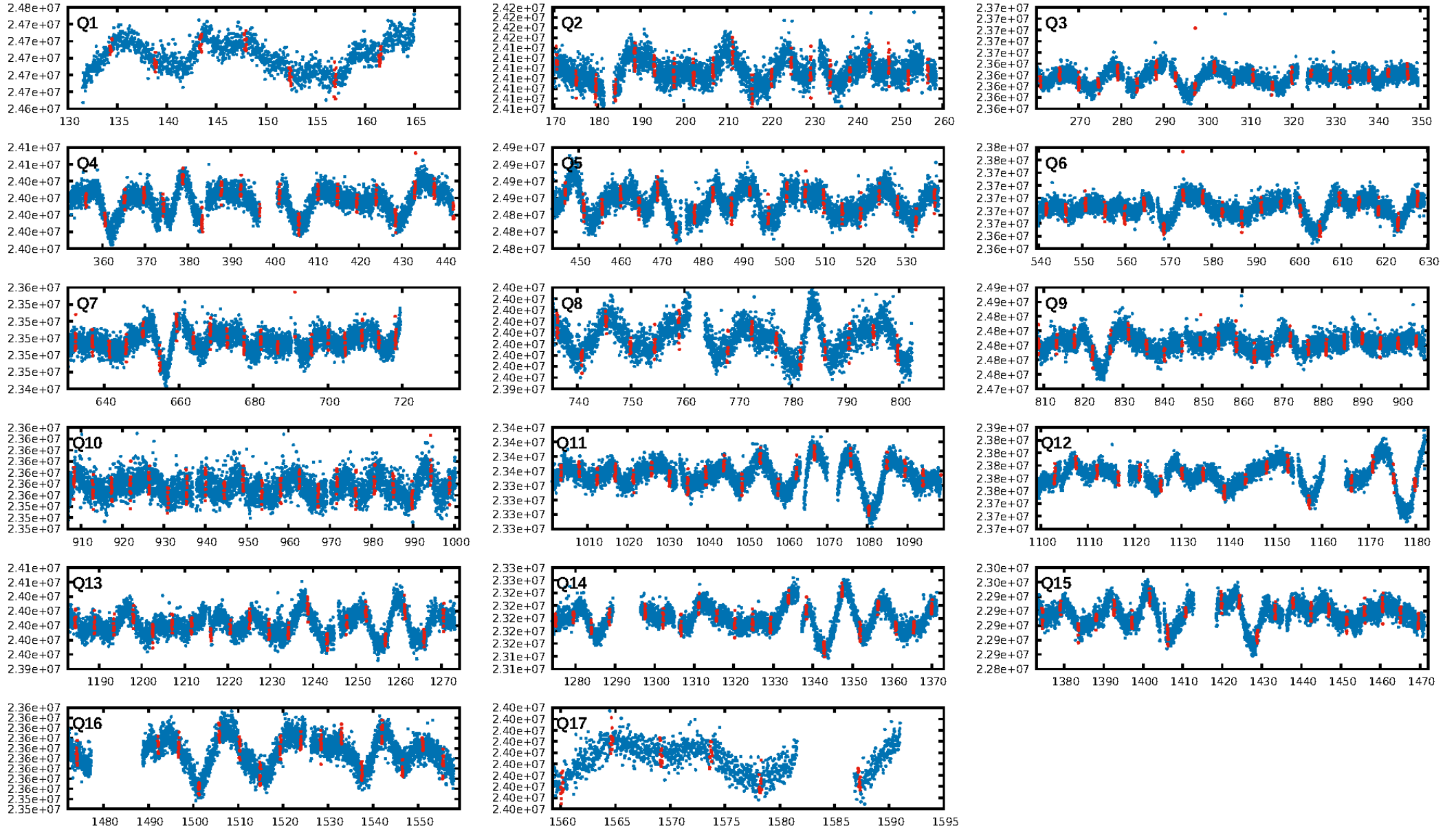
DV Fit Results:

Period = 4.52628 [0.00003] d
Epoch = 134.3378 [0.0048] BKJD
Rp/R* = 0.0112 [0.0066]
a/R* = 5.21 [13.84]
b = 0.91 [0.53]
Seff = 333.02 [70.48]
Teff = 1089 [58] K
Rp = 1.23 [0.74] Re
a = 0.0536 [0.0071] AU
Ag = 33.57 [41.31] [0.79σ]
Teffp = 4054 [1231] K [2.41σ]

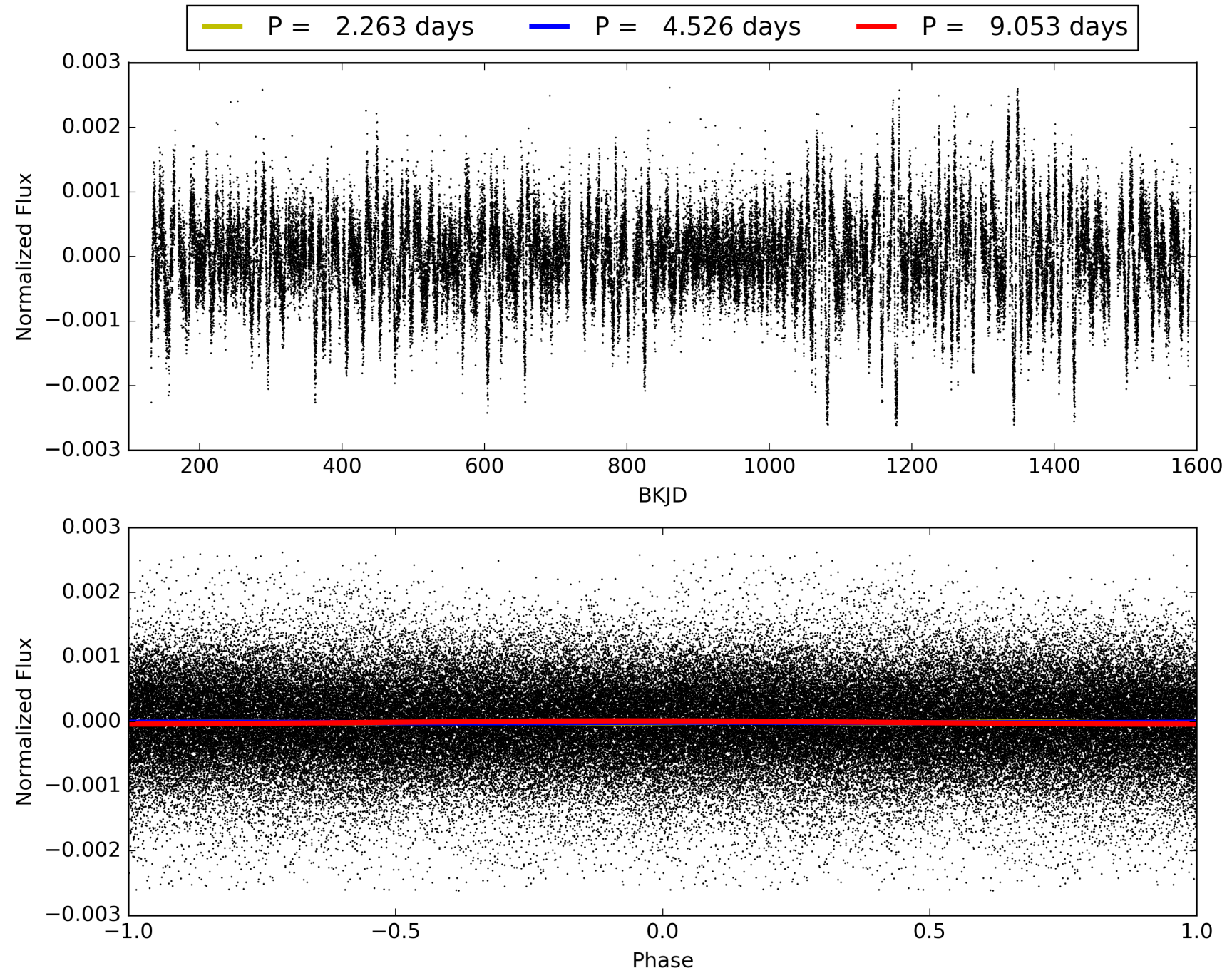
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.37σ]
LongPeriod-sig: 100.0% [17.51σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.47e-20
RollingBand-fgt: 1.00 [278/278]
GhostDiagnostic-chr: 8.033
Centroid-sig: 12.6%
Centroid-so: 1.369 arcsec [1.13σ]
OotOffset-rm: 1.226 arcsec [1.97σ]
KicOffset-rm: 1.324 arcsec [2.21σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.29 [4/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005003670-02, PDC Light Curves

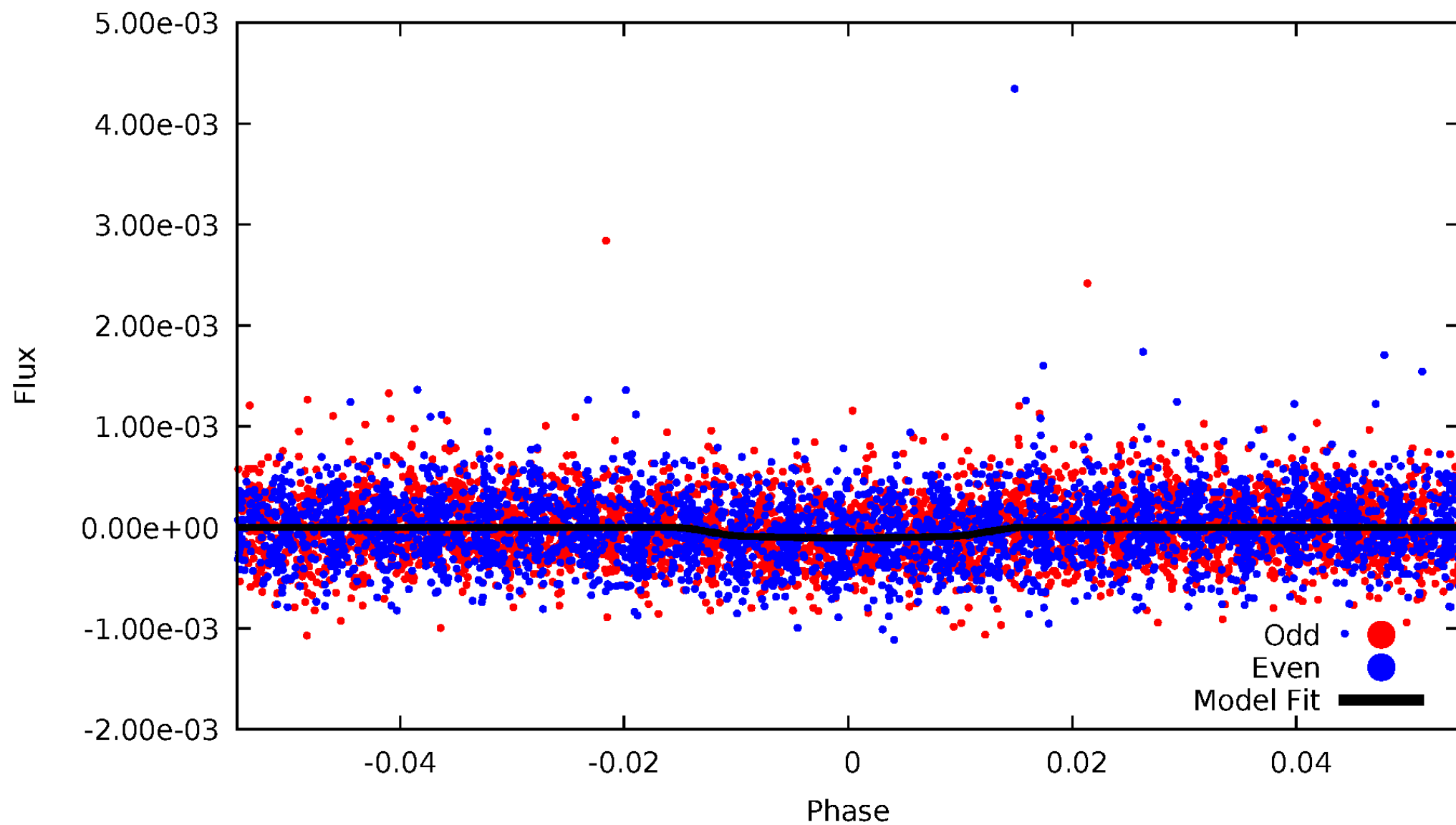


TCE 005003670-02



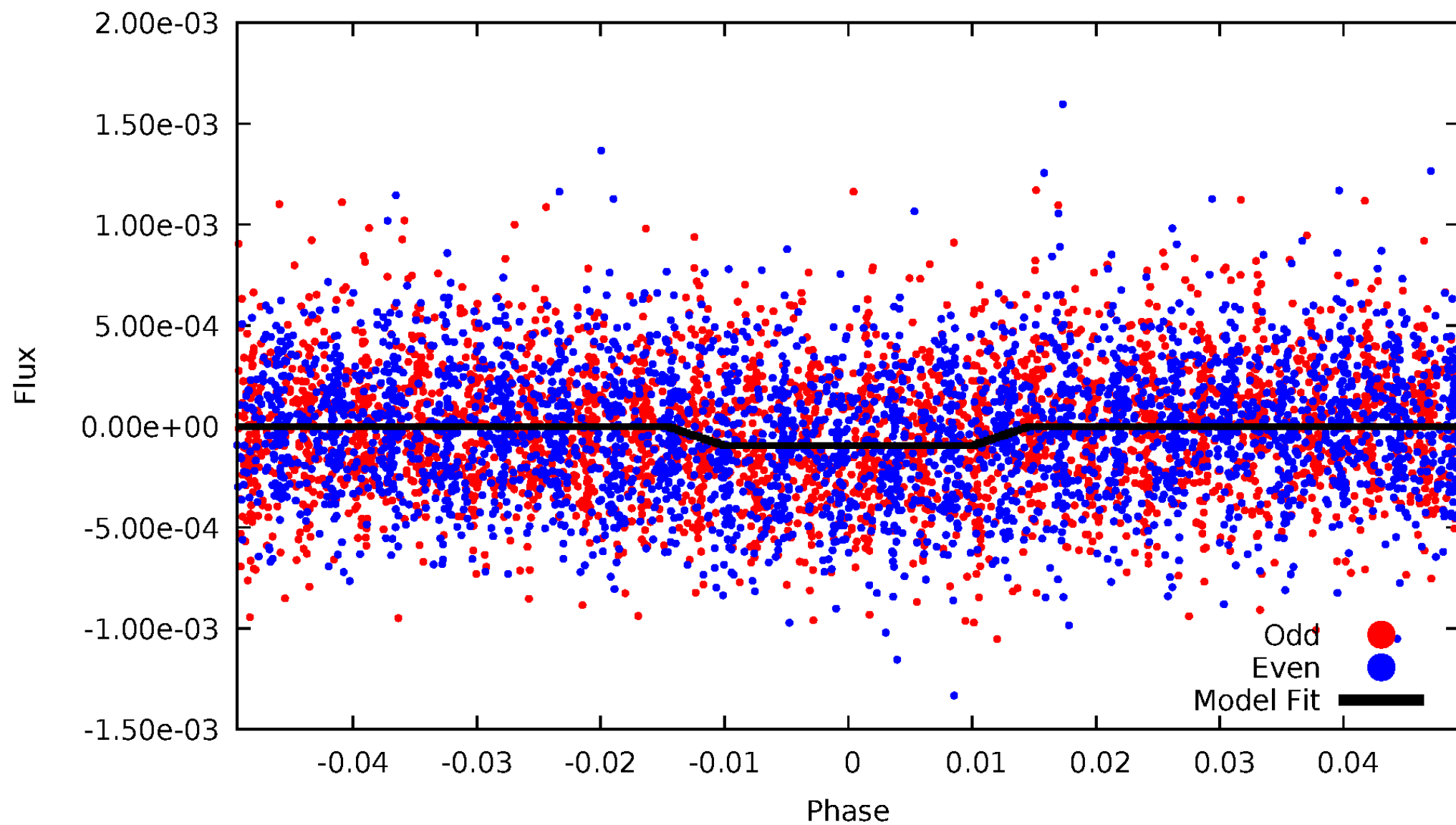
DV Odd/Even

TCE 005003670-02



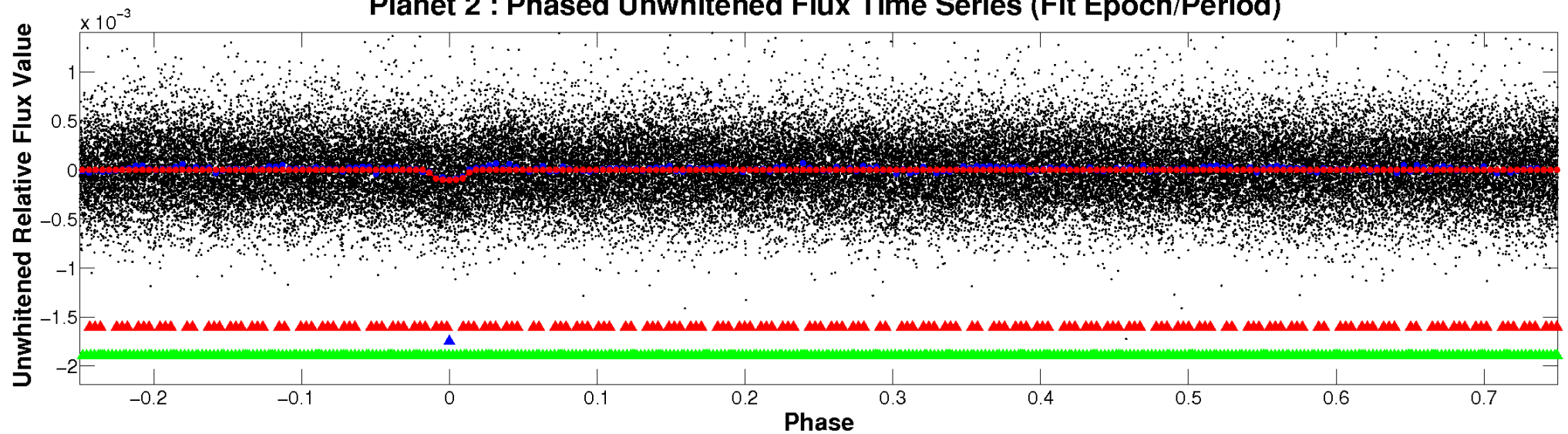
ALT Odd/Even

TCE 005003670-02

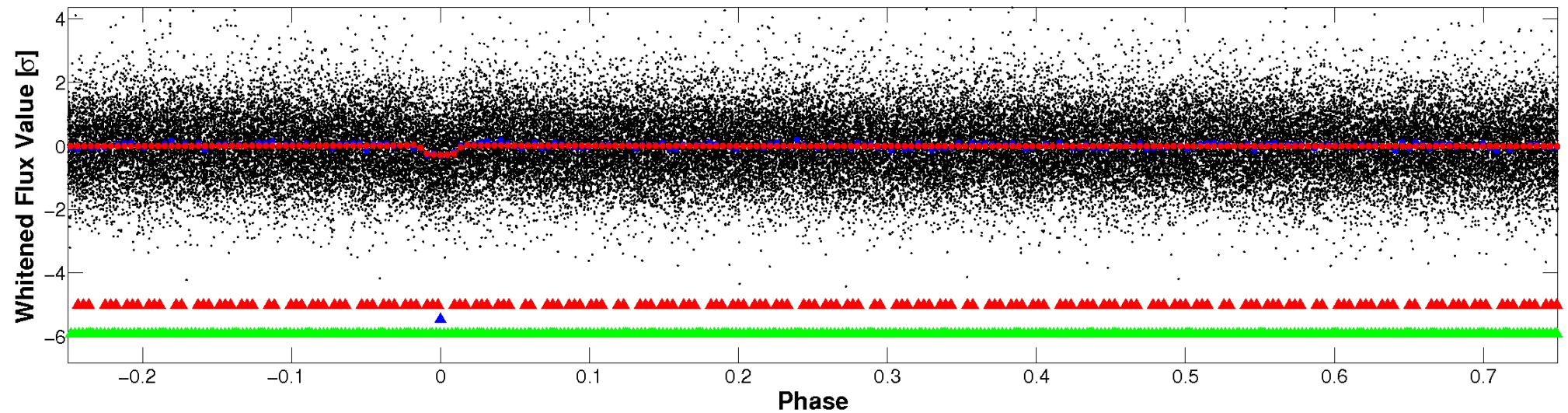


Non-Whitened Vs. Whitened Light Curve

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

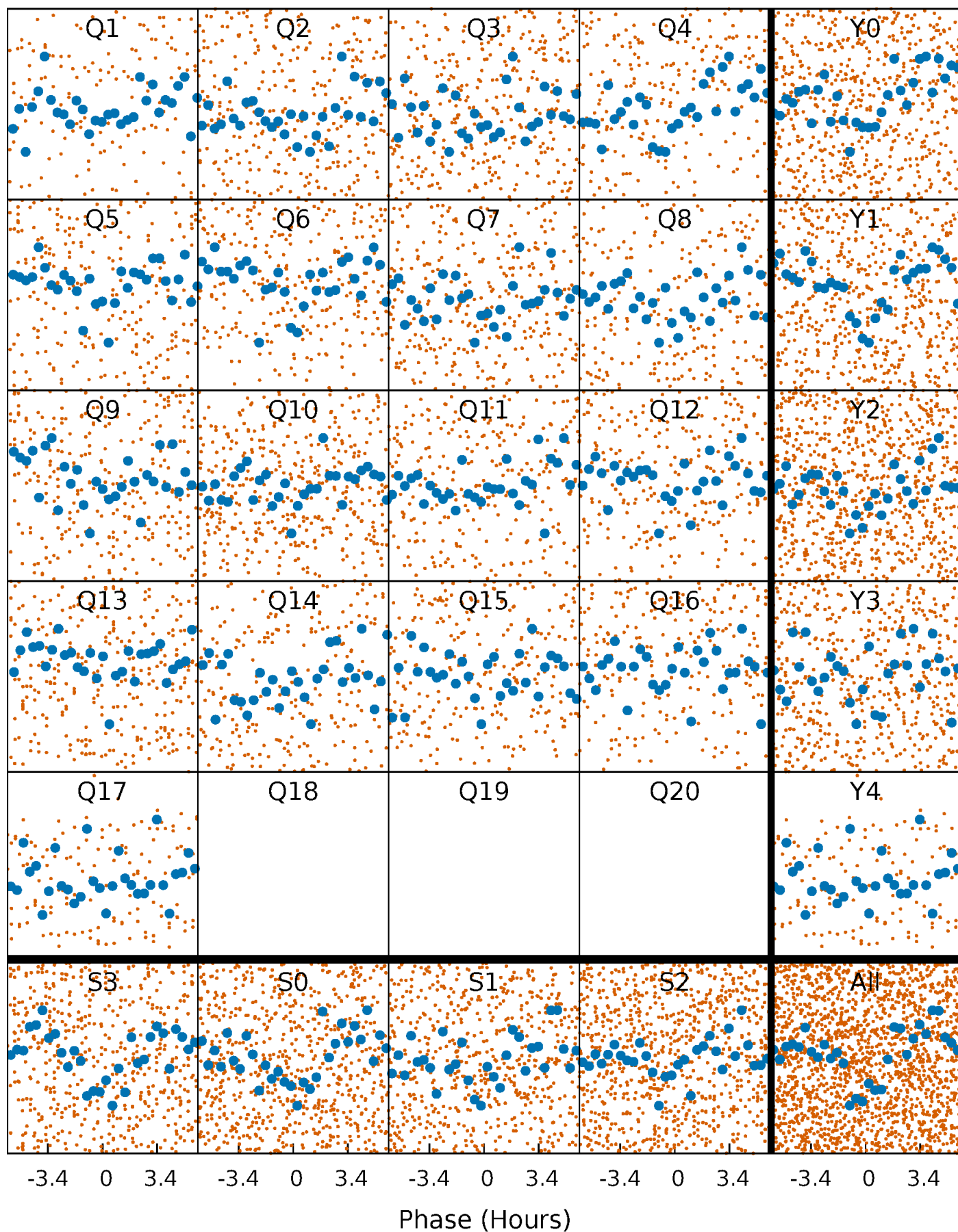


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



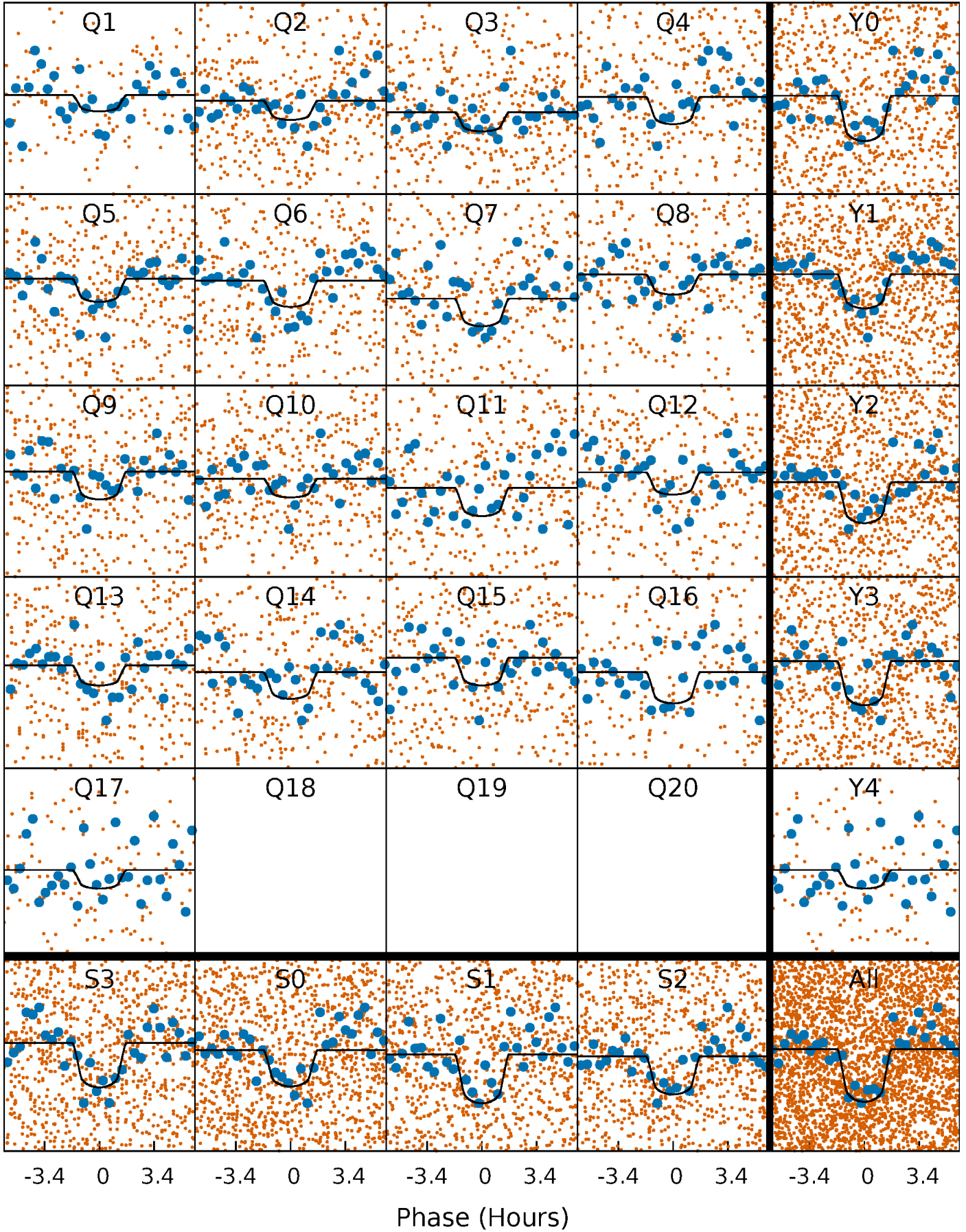
PDC Quarter-Phased Transit Curves

TCE 005003670-02 P= 4.526279 Days $T_0=134.337813$ (BKJD)



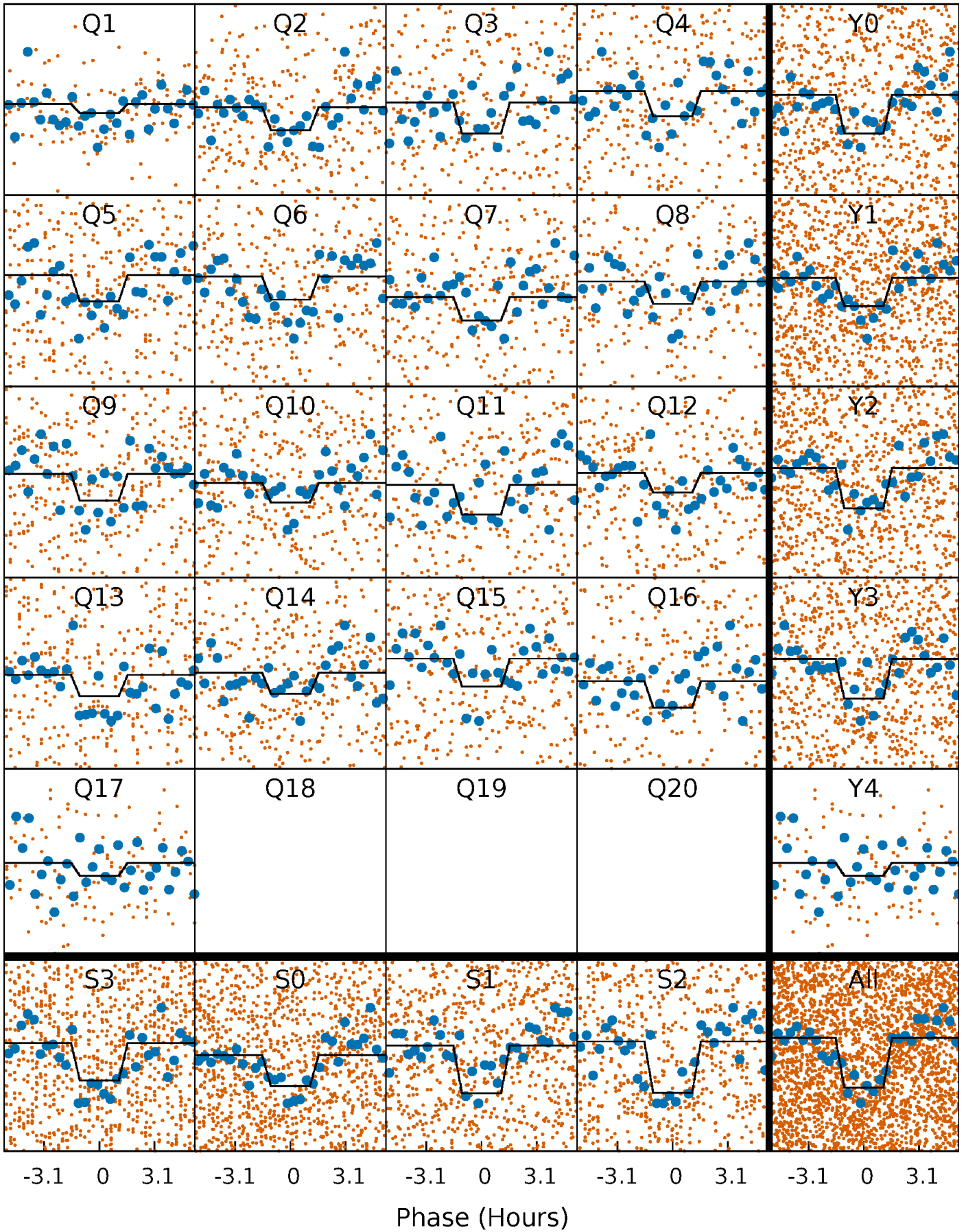
DV Quarter-Phased Transit Curves

TCE 005003670-02 P= 4.526279 Days $T_0=134.337813$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

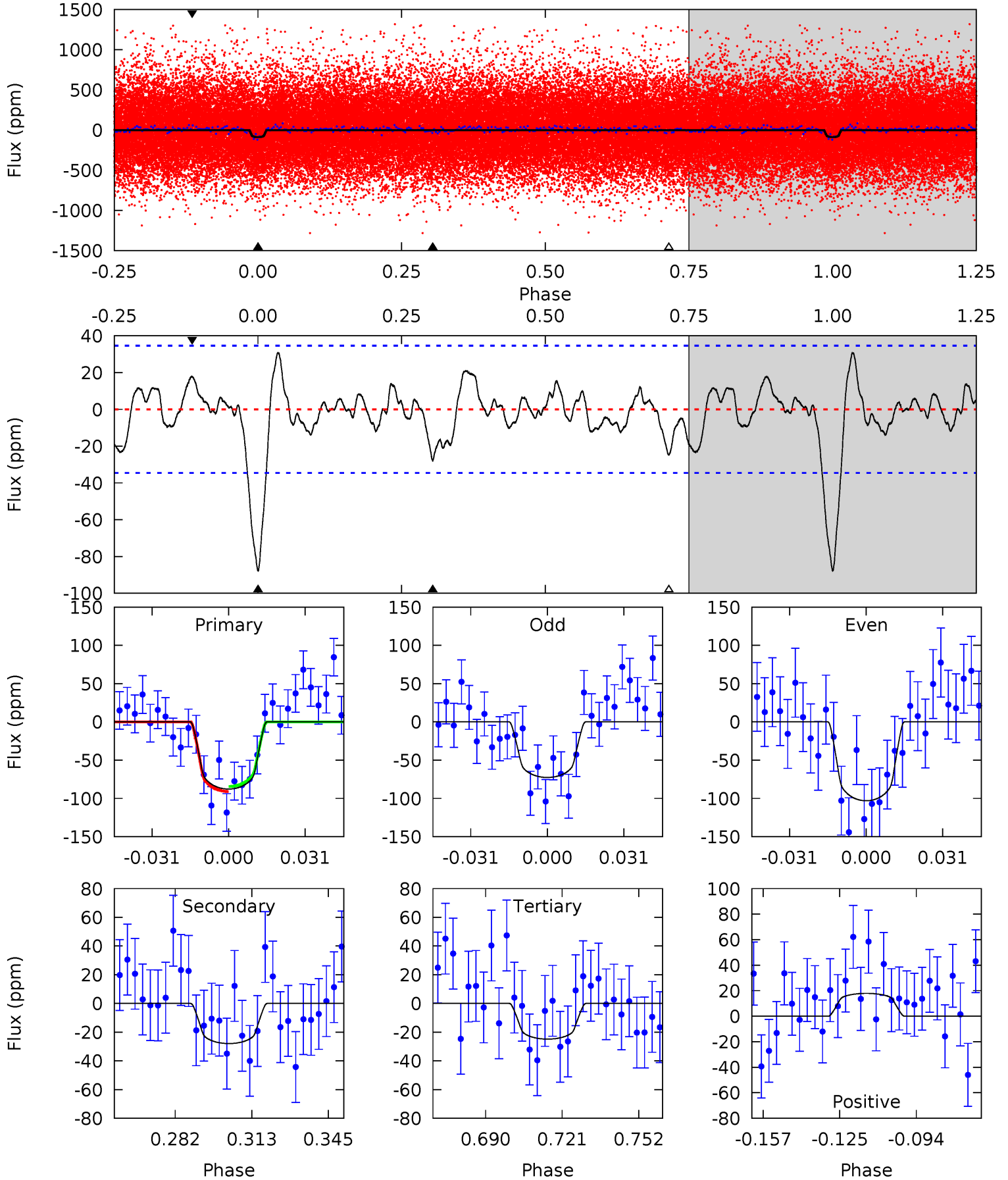
TCE 005003670-02 P= 4.526283 Days $T_0=134.337483$ (BKJD)



DV Model-Shift Uniqueness Test

005003670-02, P = 4.526279 Days, E = 129.811534 Days

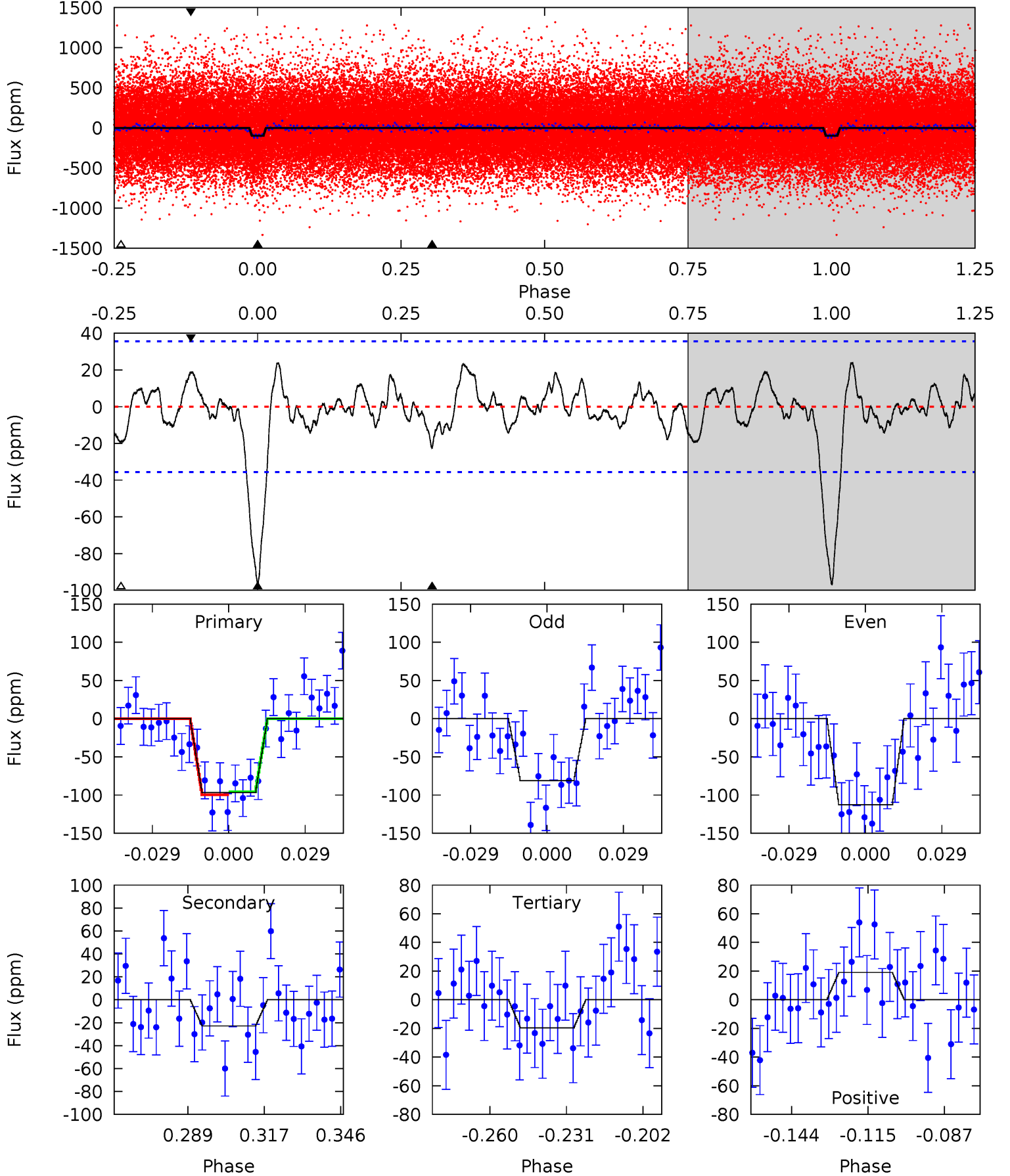
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	3.88	3.45	2.48	4.80	2.15	1.31	8.73	9.70	0.43	1.39	2.12	1.00	0.26	0.45



Alt Model-Shift Uniqueness Test

005003670-02, P = 4.526283 Days, E = 129.811200 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	3.09	2.66	2.58	4.82	2.19	1.18	10.4	10.5	0.43	0.51	2.14	1.02	0.20	0.26



Stellar Parameters For KIC 005003670

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5700^{+77}_{-77}	$4.434^{+0.063}_{-0.117}$	$0.160^{+0.150}_{-0.150}$	$1.006^{+0.148}_{-0.079}$	$1.003^{+0.056}_{-0.062}$	$1.385^{+0.332}_{-0.454}$
	+1%/-1%	+1%/-3%	+94%/-94%	+15%/-8%	+6%/-6%	+24%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 005003670-02 / KOI 4524.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 7	$1.30^{+0.71}_{-0.67}$	1527^{+65}_{-46}	4089^{+1397}_{-608}	26^{+85}_{-16}
Alt.	-23 ± 7	$1.13^{+0.66}_{-0.62}$	1530^{+62}_{-41}	4147^{+1667}_{-649}	27^{+108}_{-18}

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 $A_{obs} \gg 1.0$

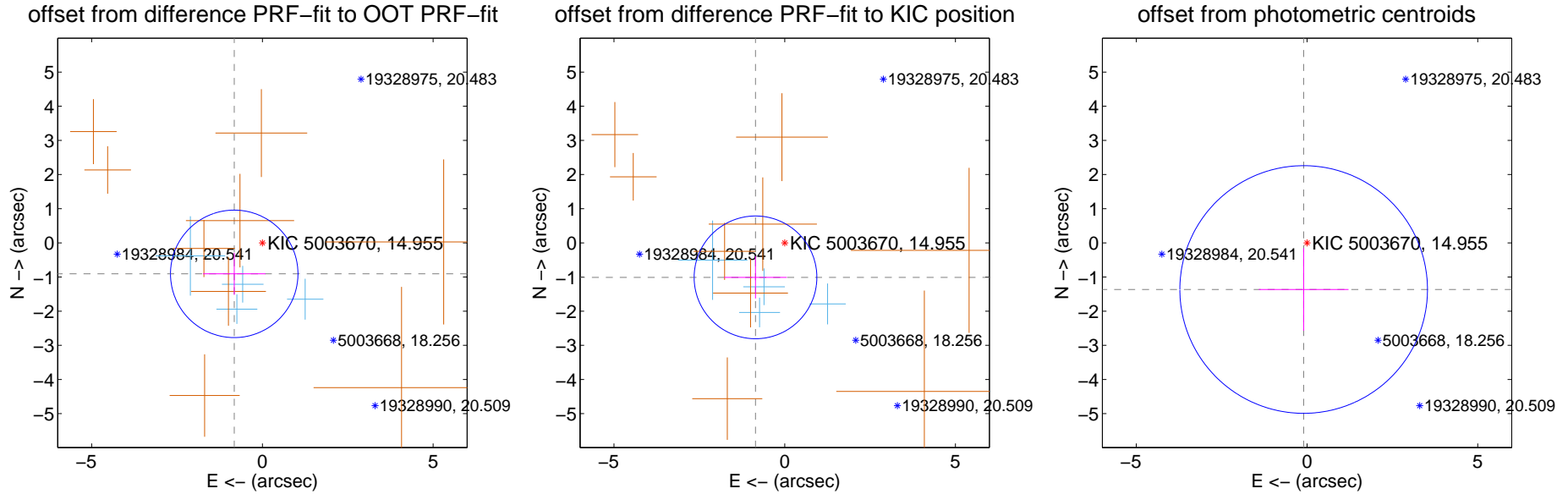
DV Centroid Data

Supplemental centroid analysis for 005003670-02. Kepler magnitude: 14.96. Transit SNR 9.75

There are 4 quarters with good PRF difference image offsets

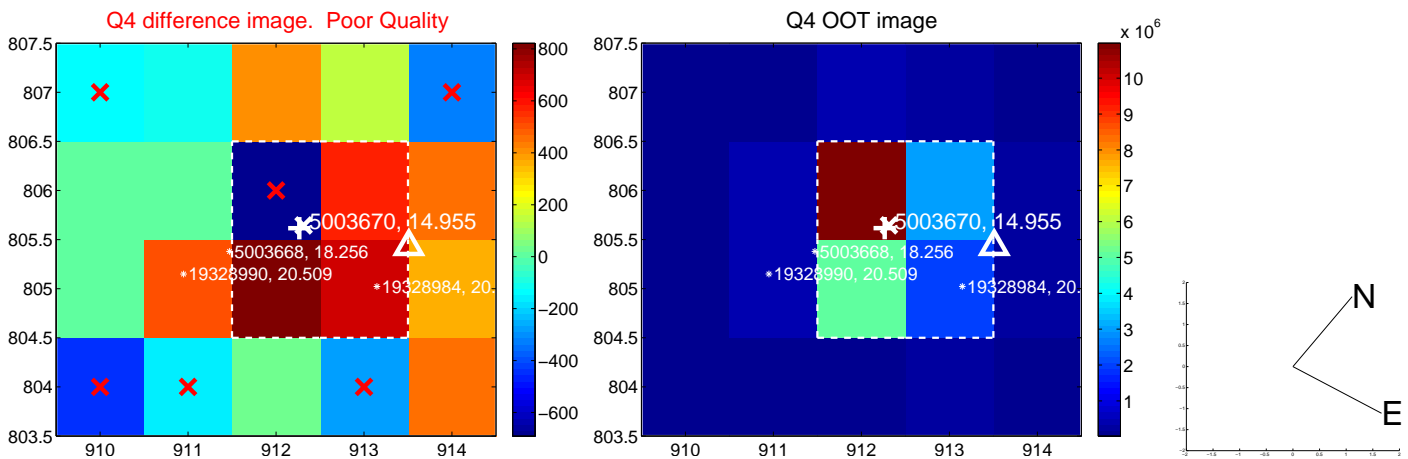
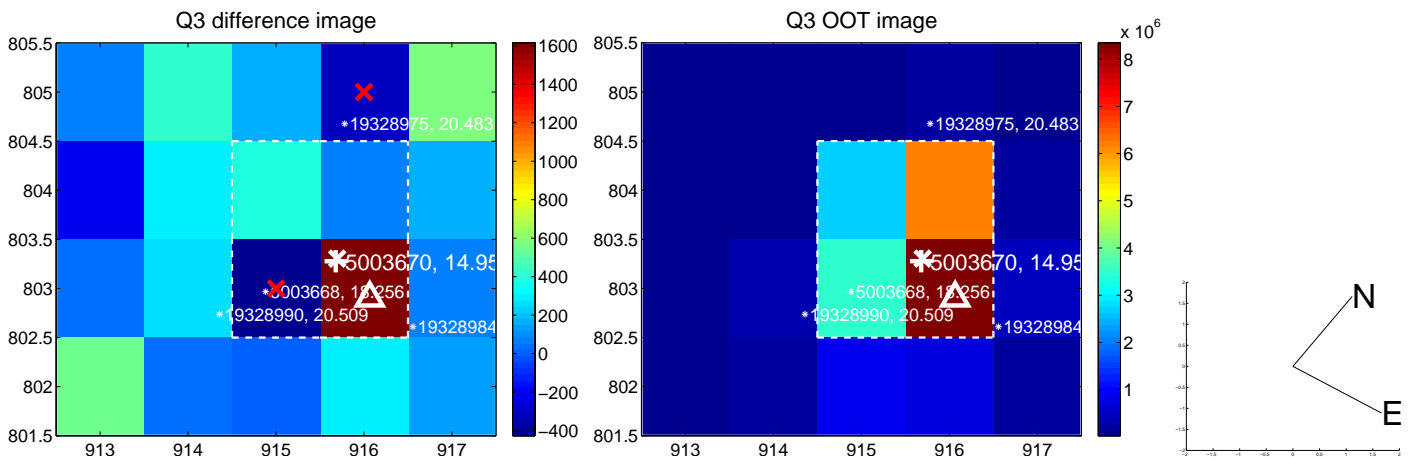
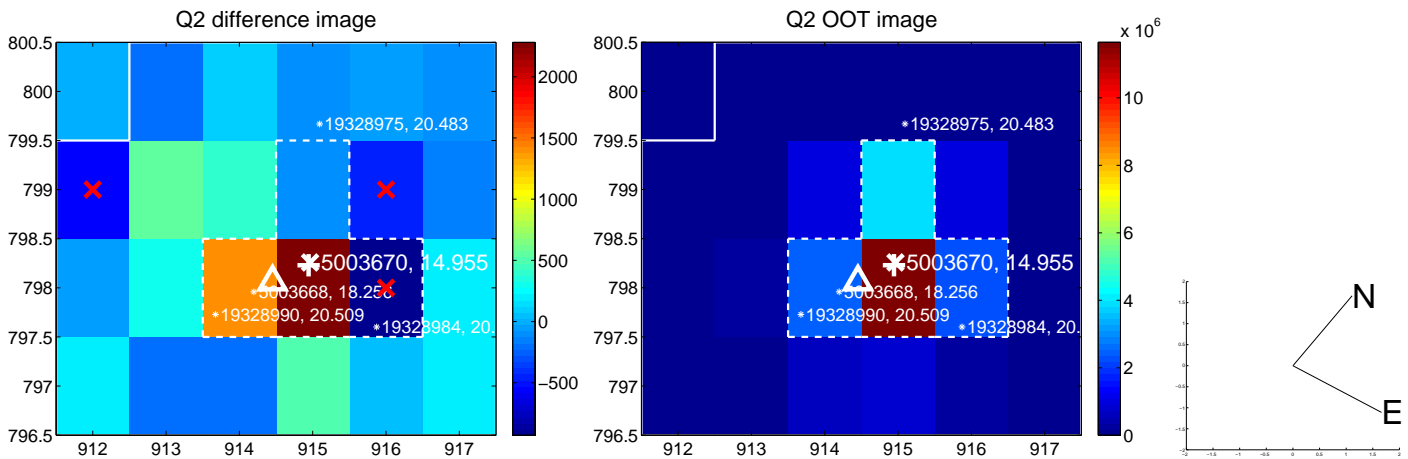
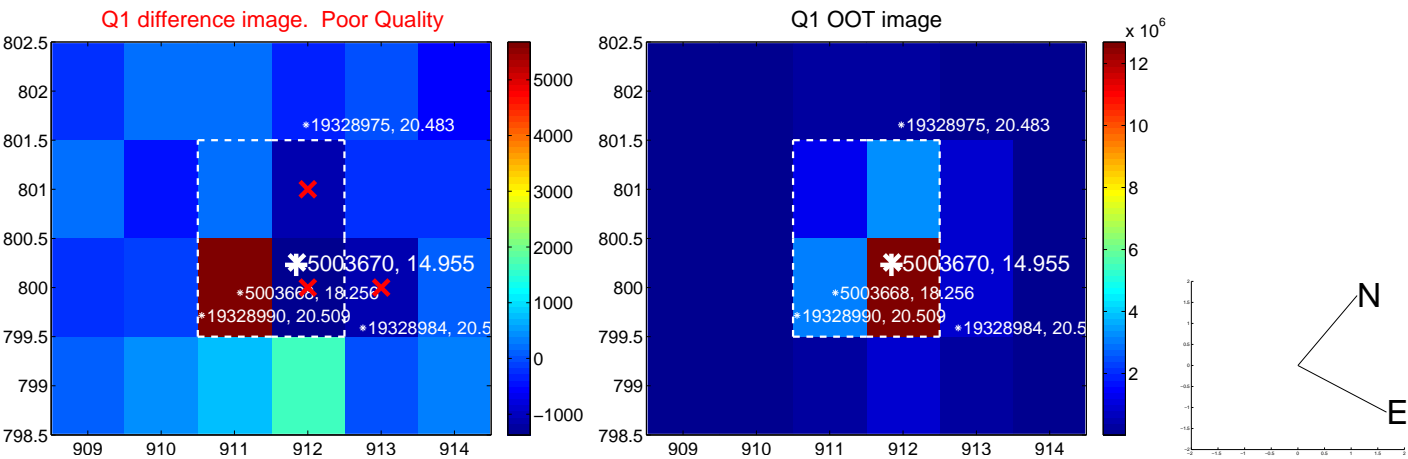
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.226 ± 0.622	1.97	0.825 ± 0.915	-0.907 ± 0.616
PRF-fit source offset from KIC position	1.324 ± 0.599	2.21	0.855 ± 0.915	-1.010 ± 0.620
photometric centroid source offset	1.37 ± 1.21	1.13	0.10 ± 1.31	-1.37 ± 1.21

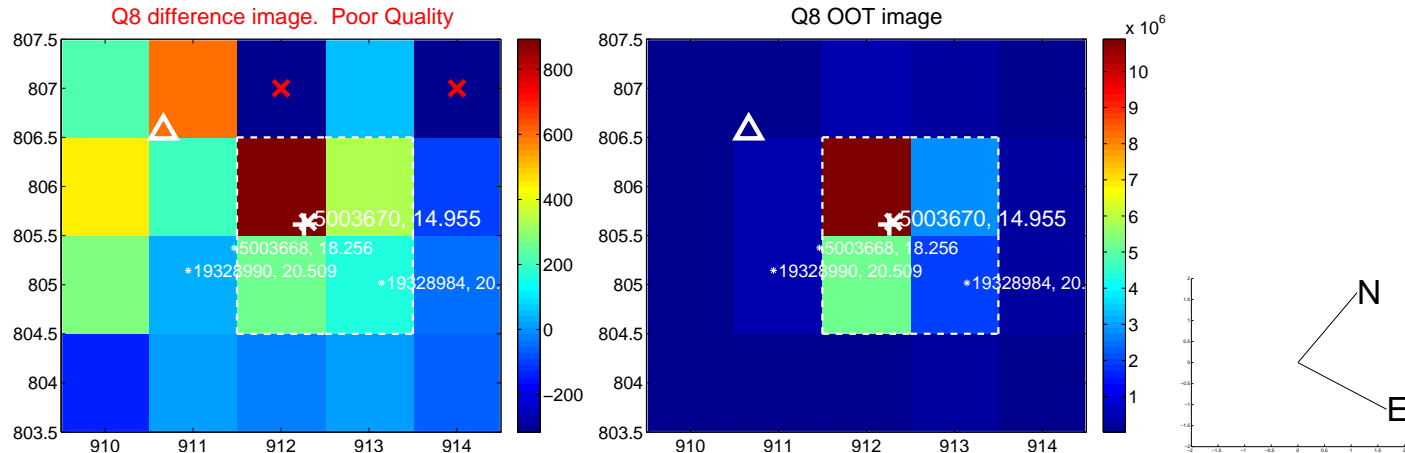
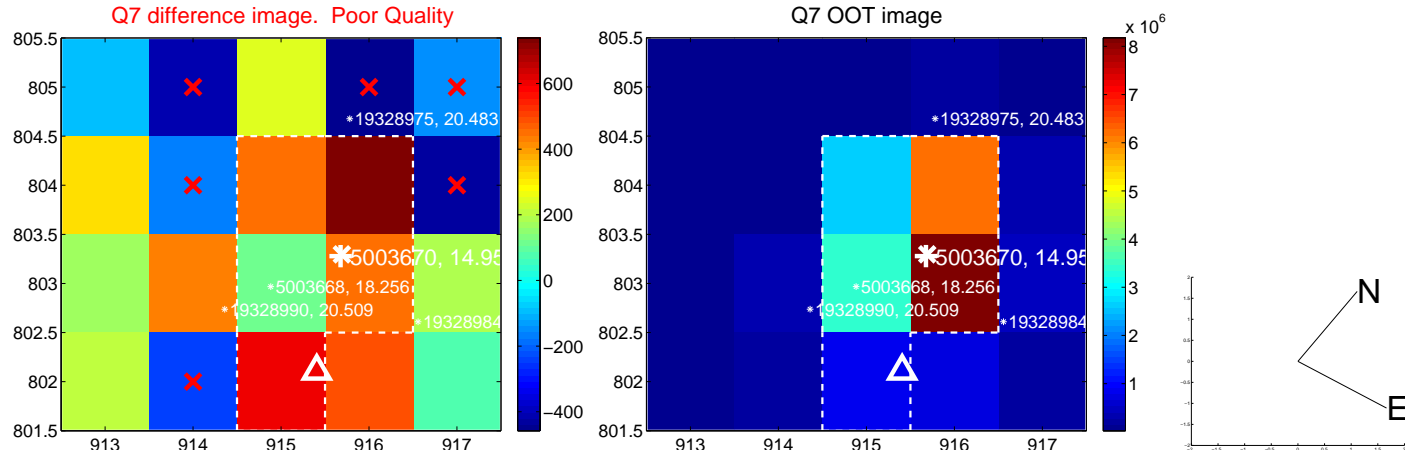
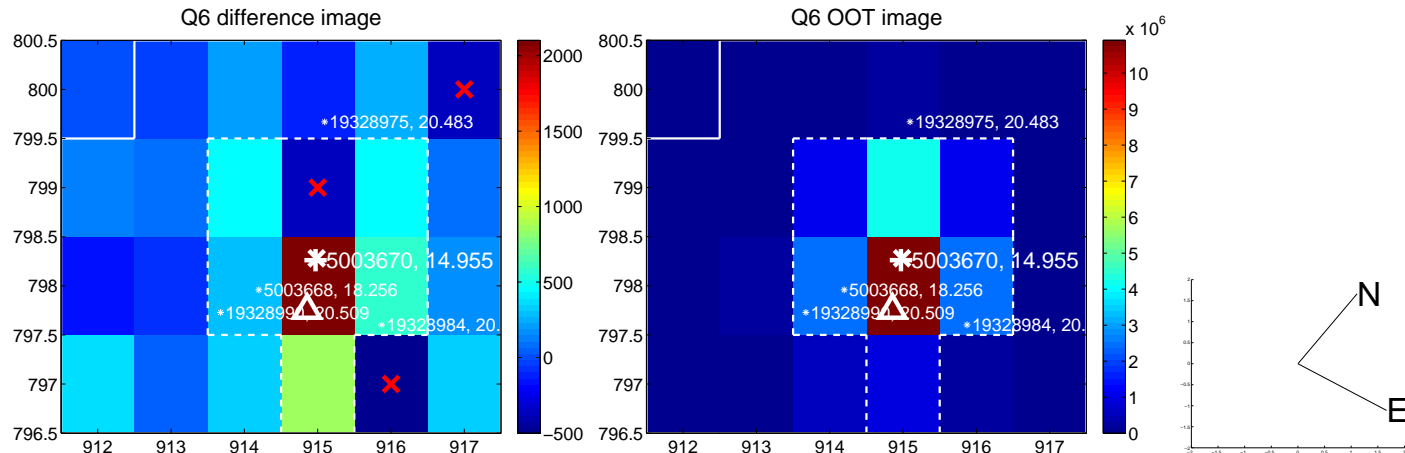
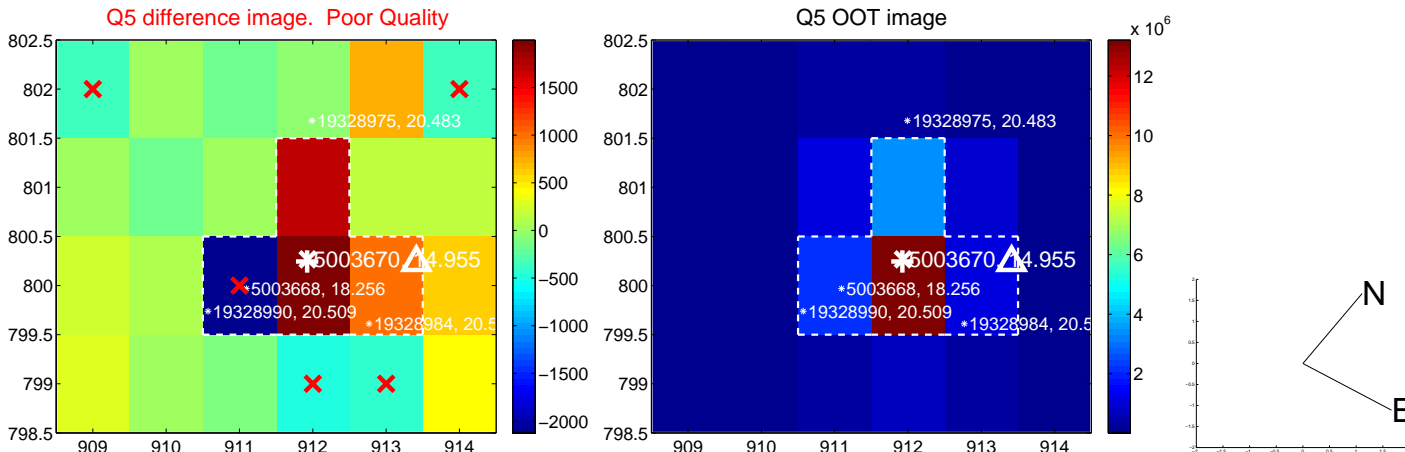


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

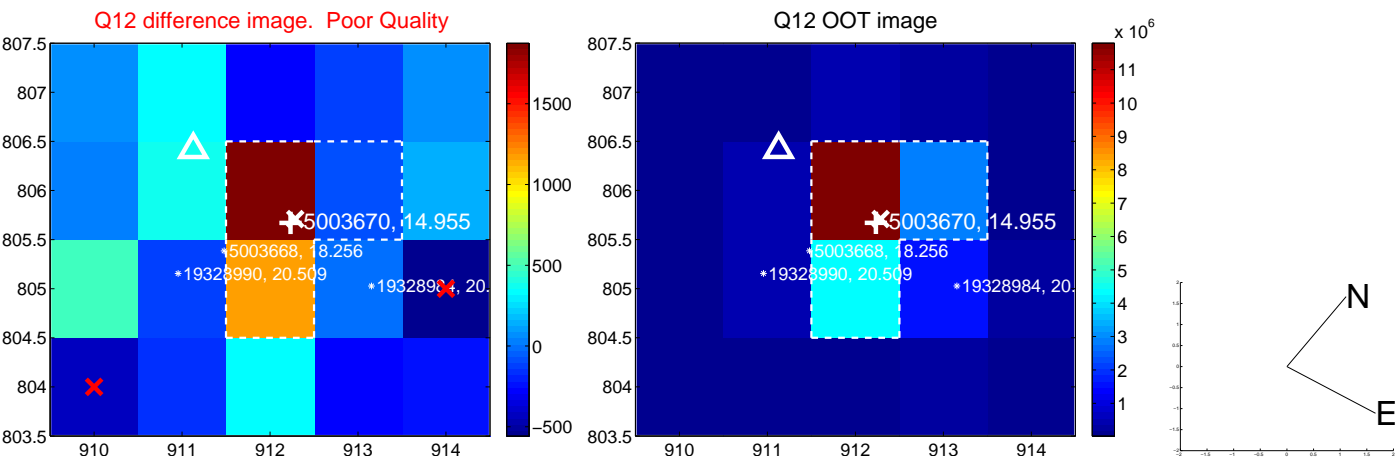
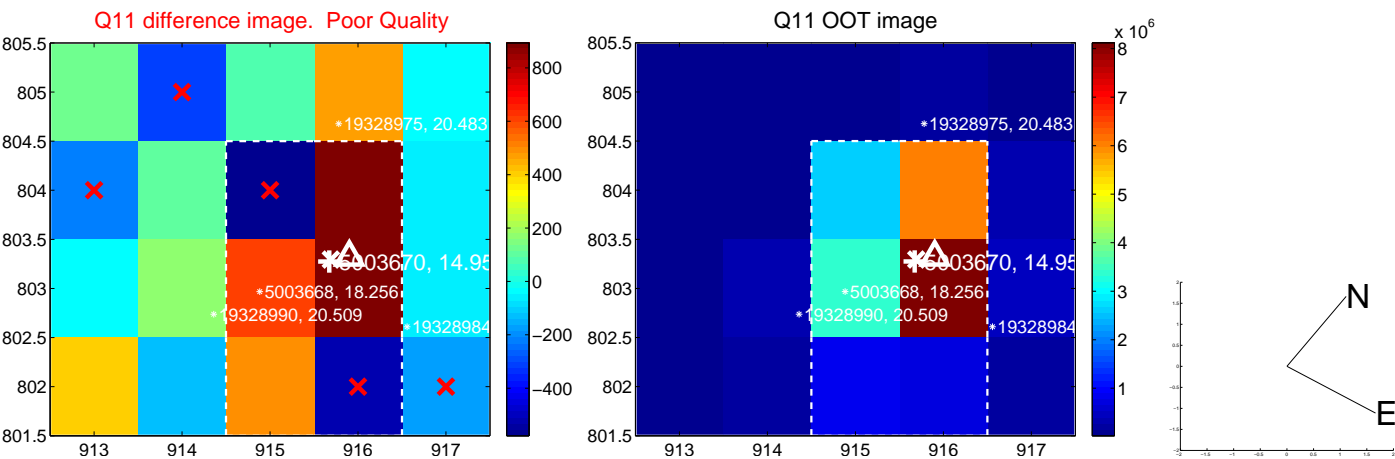
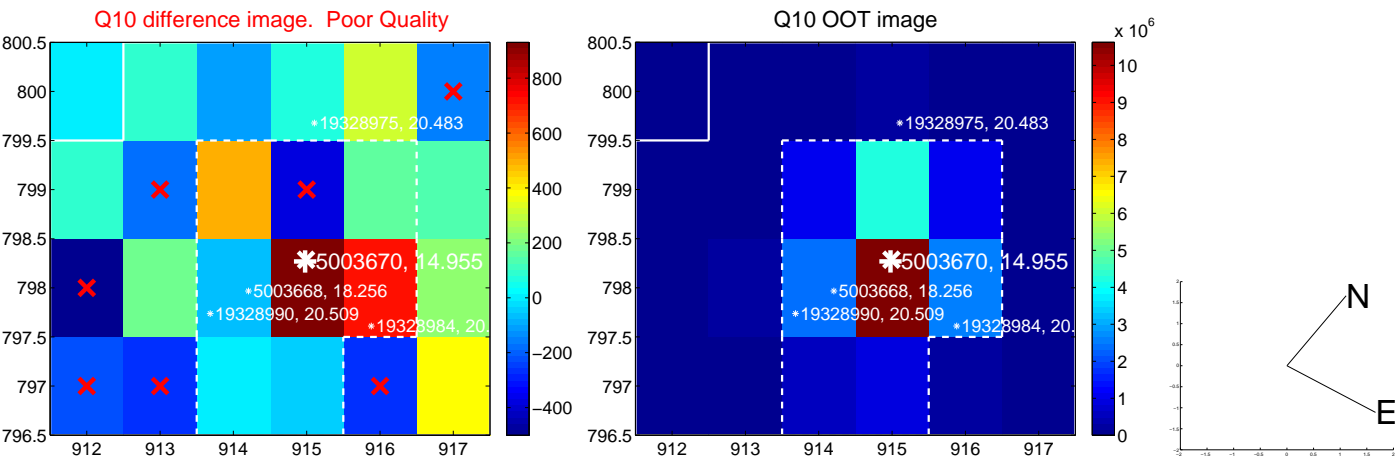
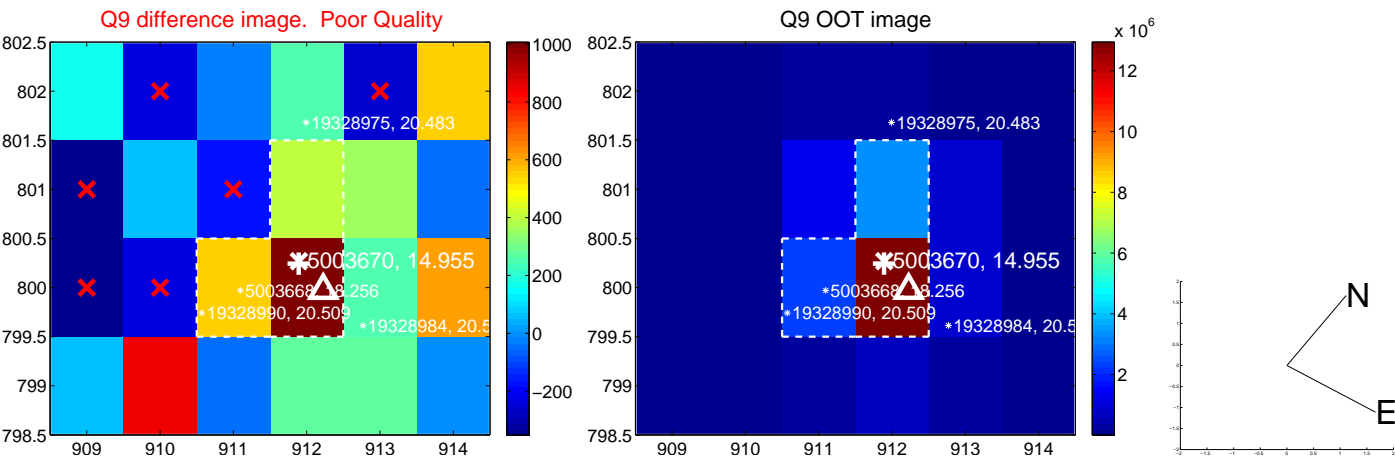
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



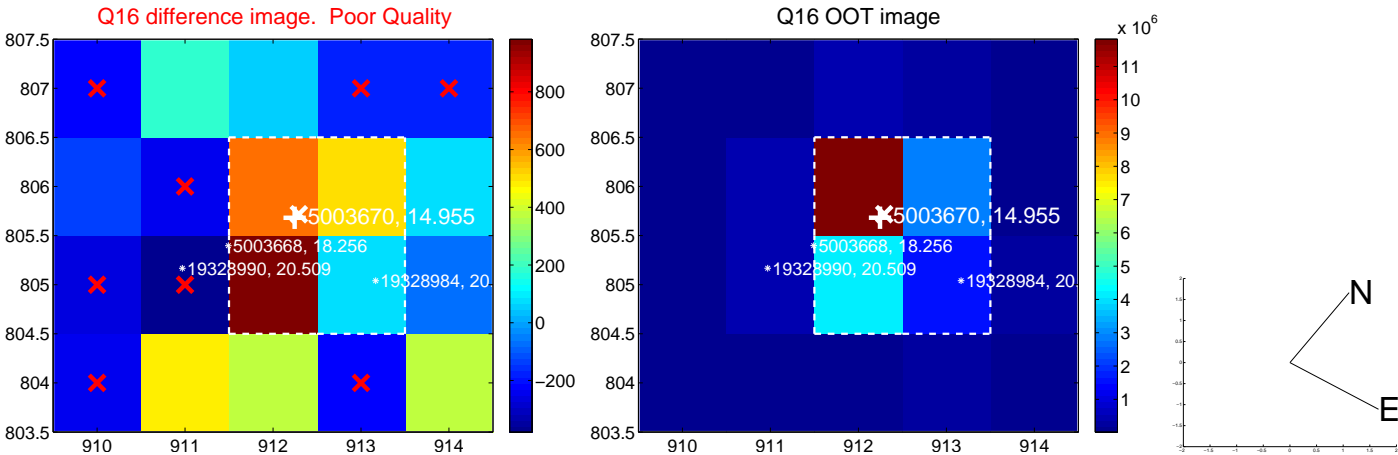
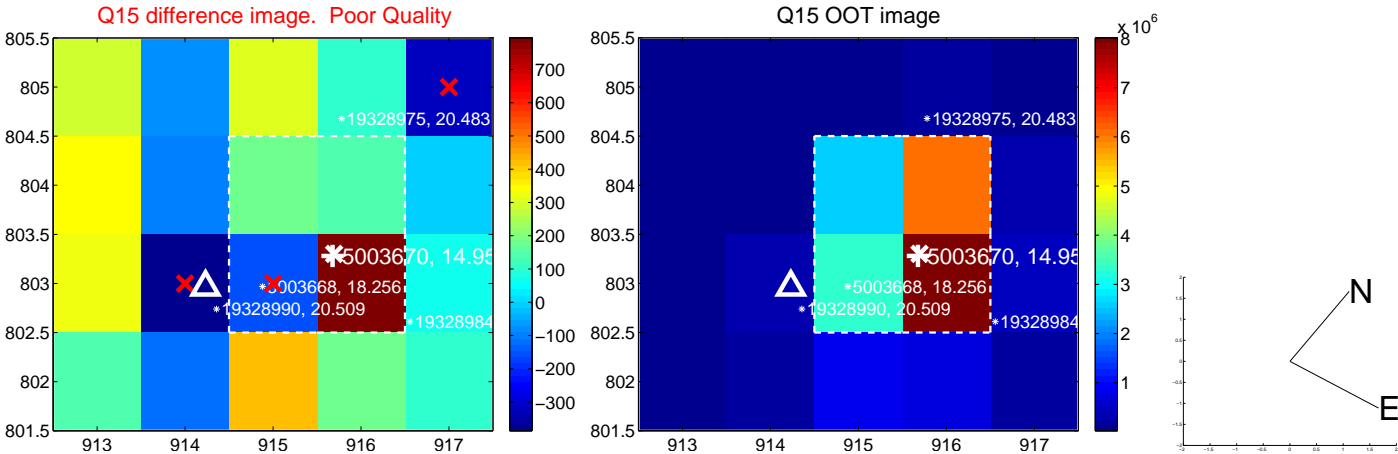
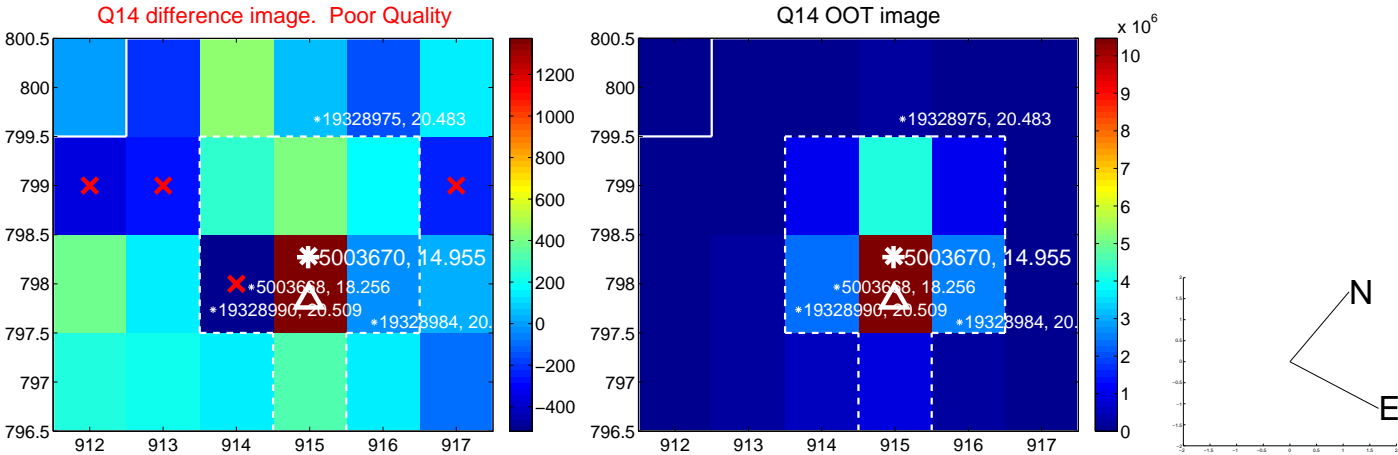
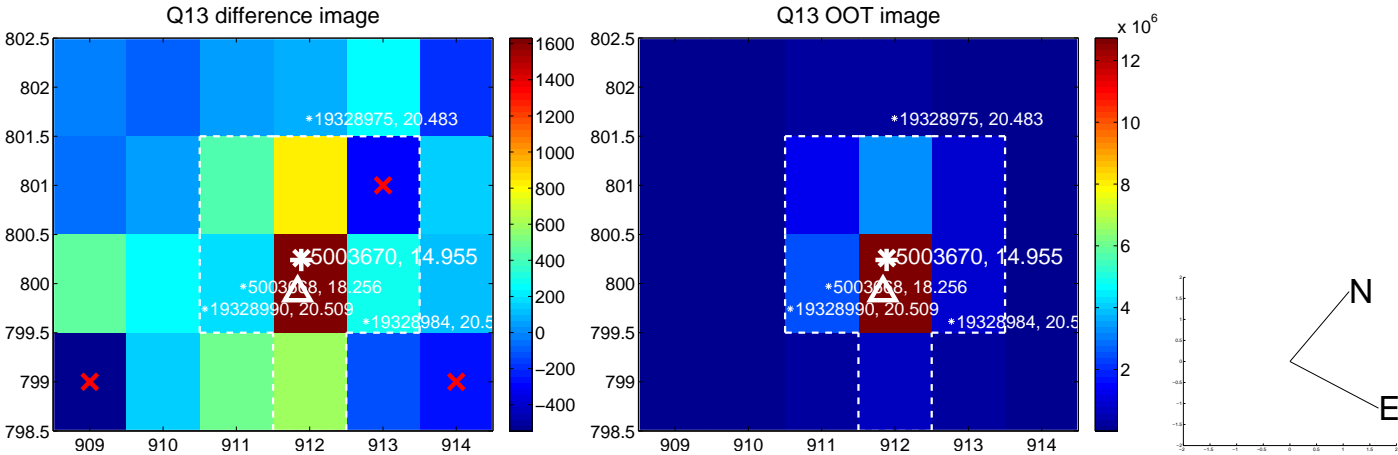
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



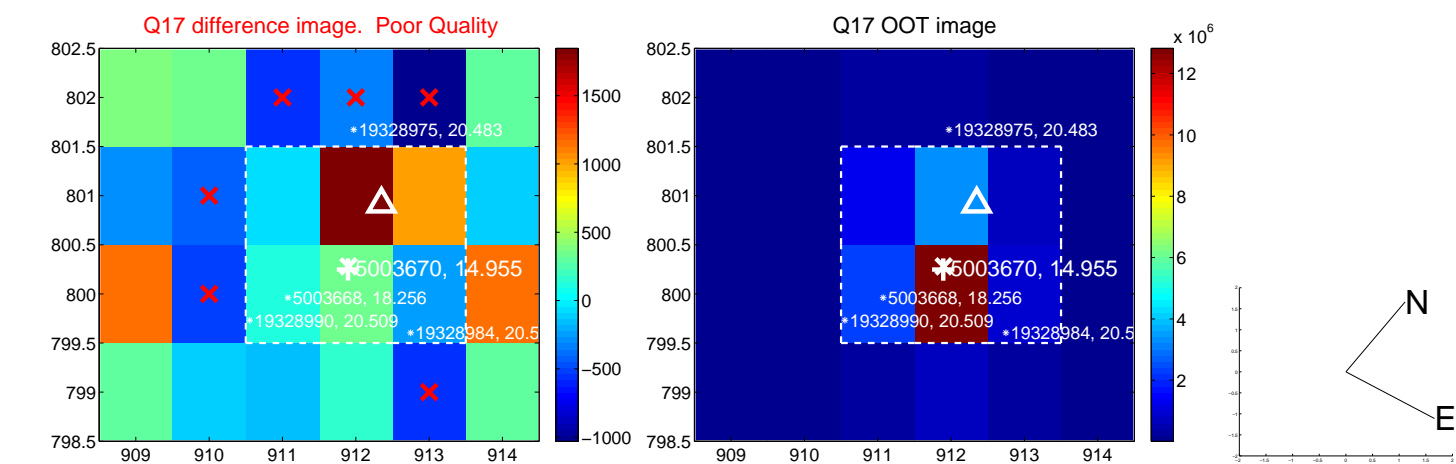
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



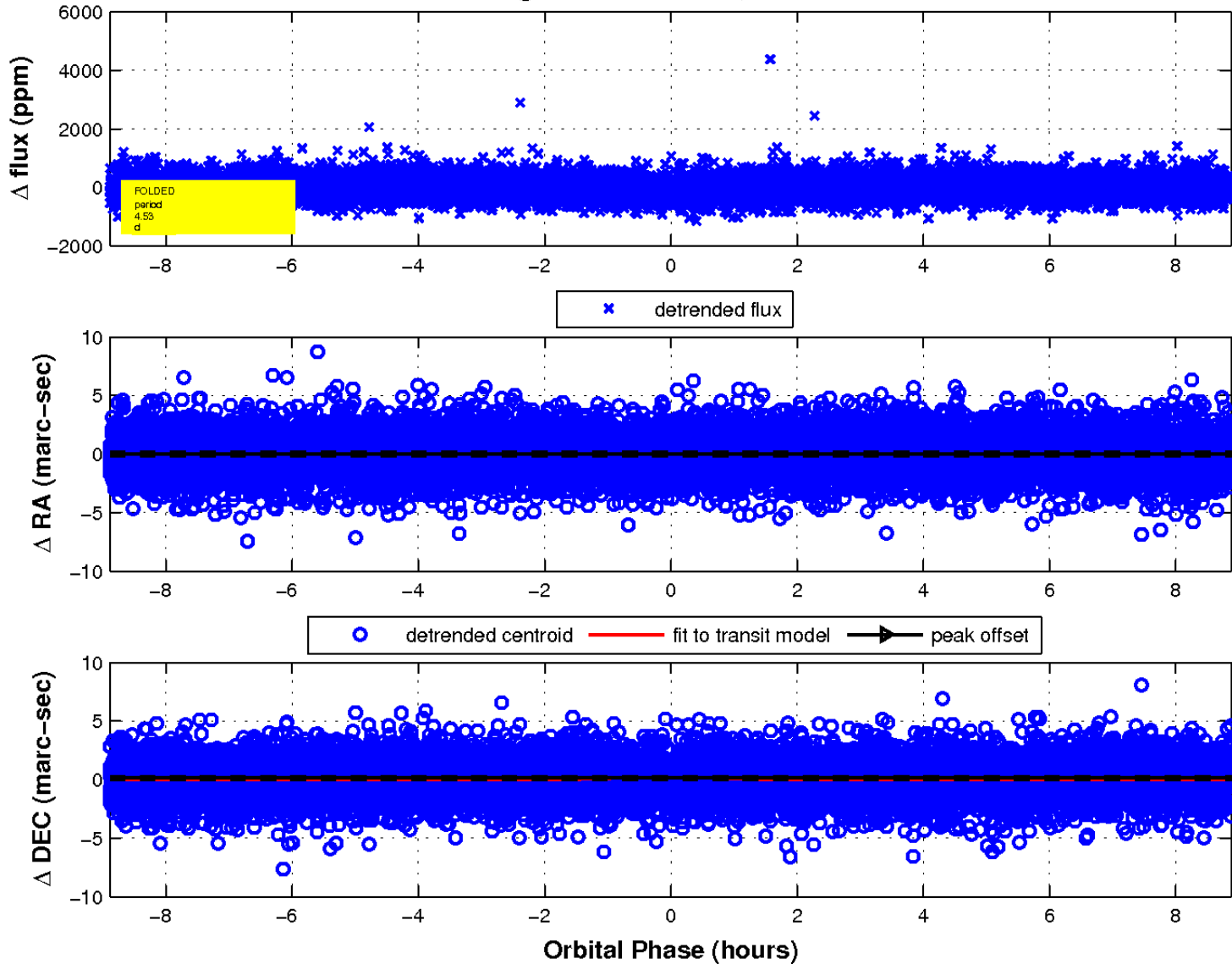
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

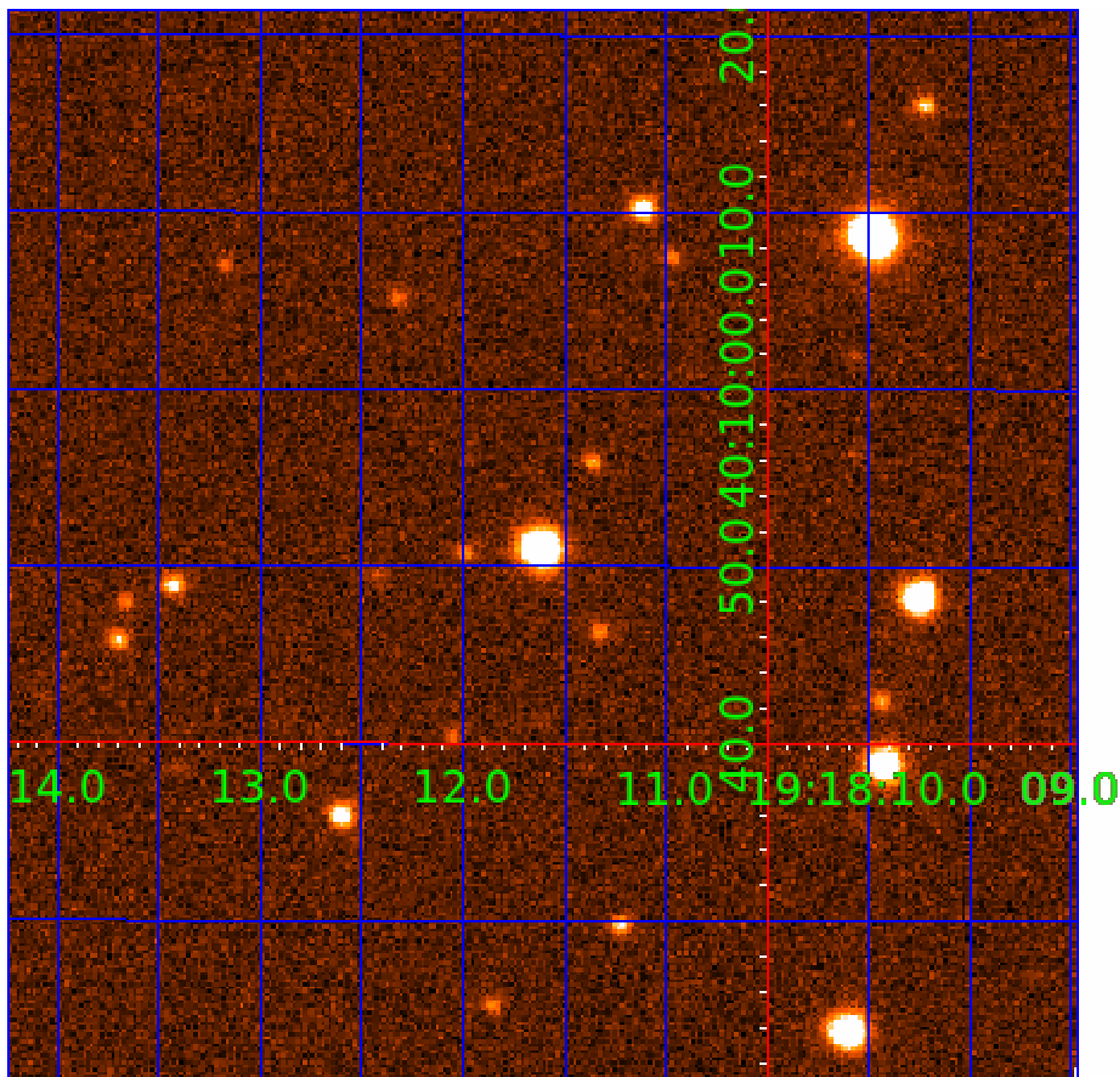


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 005003670

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})
005003670-01	OBS	4524.01	7.991455	136.253505	143.5	3.712	10.7	11.2	1.01	5700	1.43	156.06
005003670-02	OBS	4524.02	4.526279	134.337813	102.9	2.962	9.3	9.7	1.01	5700	1.23	333.02
005003670-03	OBS	4524.03	3.339253	134.156792	87.9	2.486	8.4	8.7	1.01	5700	1.08	499.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005003670-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005003670-02	OBS	PC	0.61	0	0	0	0	NO_COMMENT
005003670-03	OBS	PC	0.99	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.

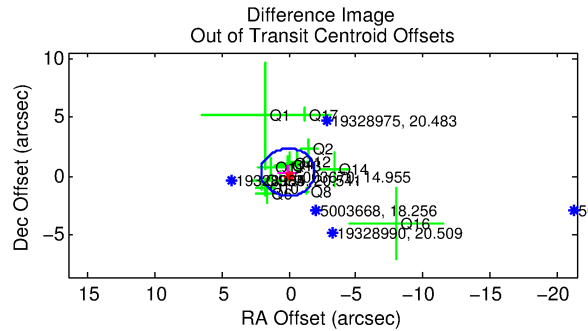
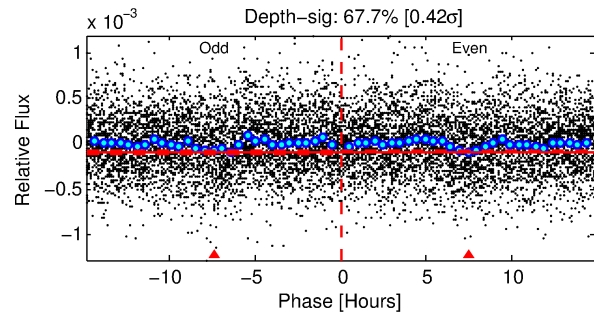
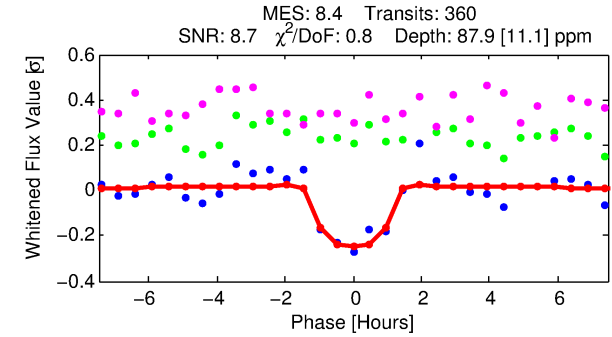
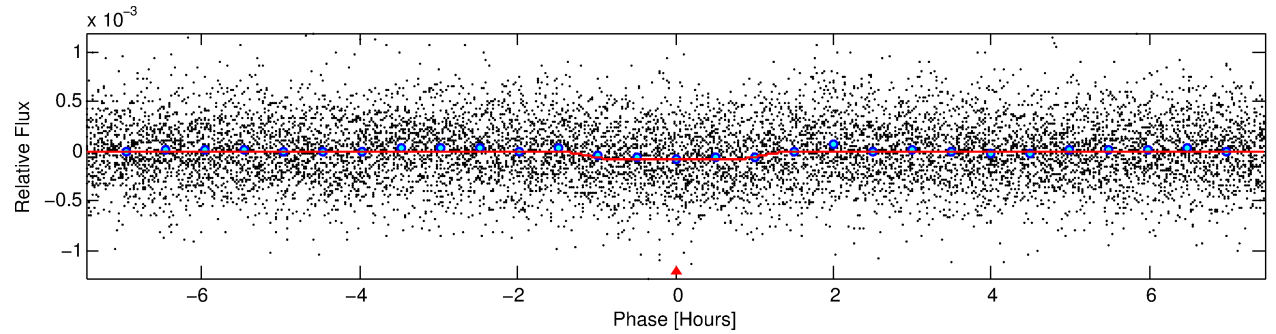
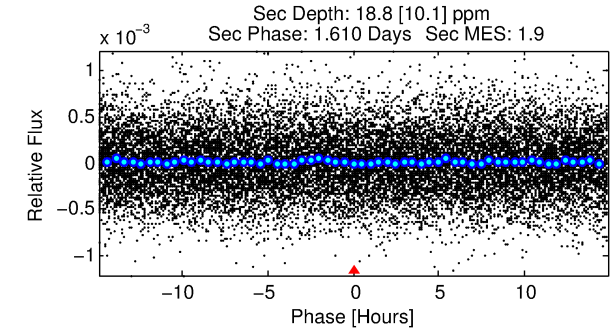
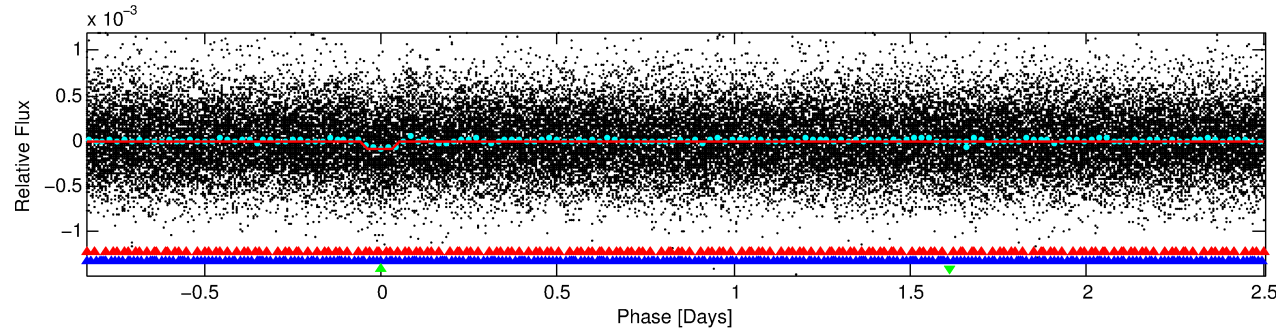
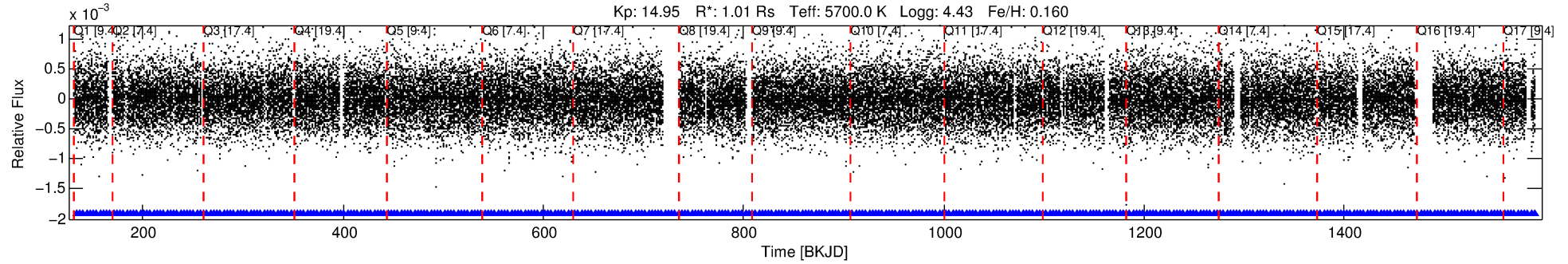
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005003670-03

No Significant Match Found

DV One-Page Summary

KIC: 5003670 Candidate: 3 of 3 Period: 3.339 d
KOI: K04524.03 Corr: 0.957



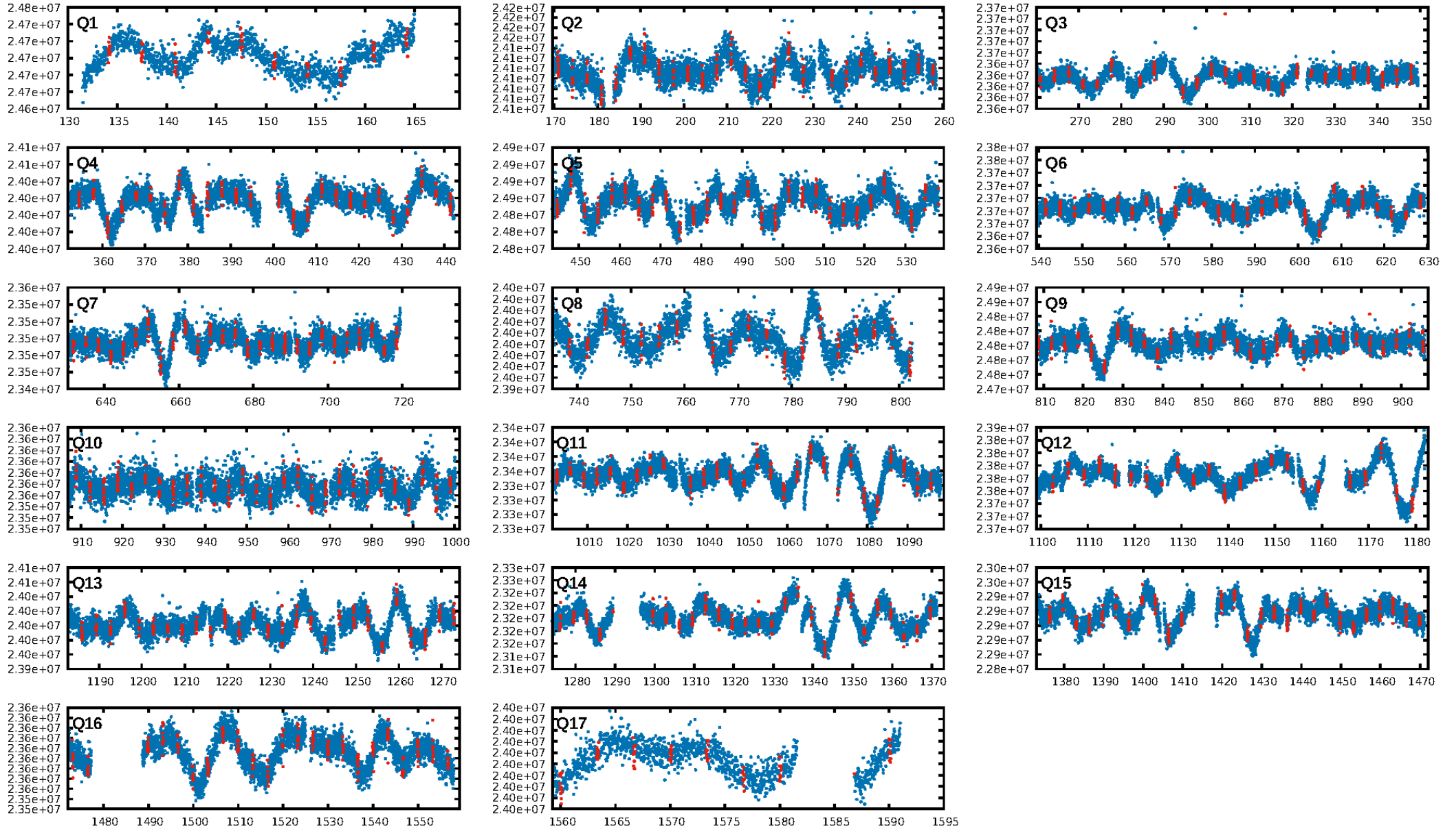
DV Fit Results:

Period = 3.33925 [0.00002] d
Epoch = 134.1568 [0.0045] BKJD
Rp/R* = 0.0099 [0.0069]
a/R* = 5.63 [17.02]
b = 0.85 [1.02]
Seff = 499.57 [105.73]
Teff = 1206 [64] K
Rp = 1.08 [0.78] Re
a = 0.0438 [0.0058] AU
Ag = 16.92 [25.73] [0.62σ]
Teffp = 3780 [1425] K [1.81σ]

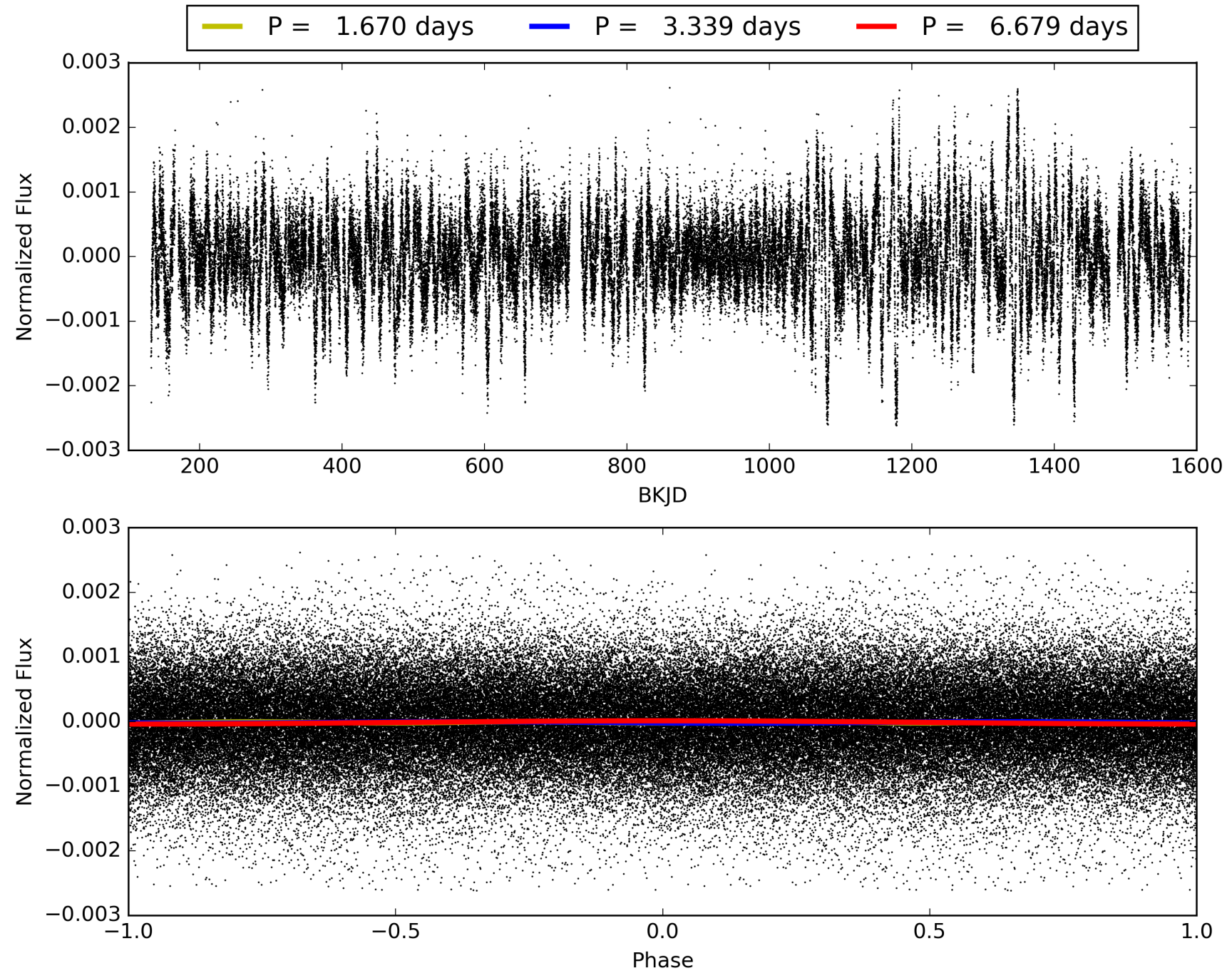
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [7.37σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.37e-17
RollingBand-fgt: 1.00 [345/345]
GhostDiagnostic-chr: 4.145
Centroid-sig: 40.2%
Centroid-so: 1.032 arcsec [0.78σ]
OotOffset-rm: 0.351 arcsec [0.52σ]
KicOffset-rm: 0.233 arcsec [0.34σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005003670-03, PDC Light Curves

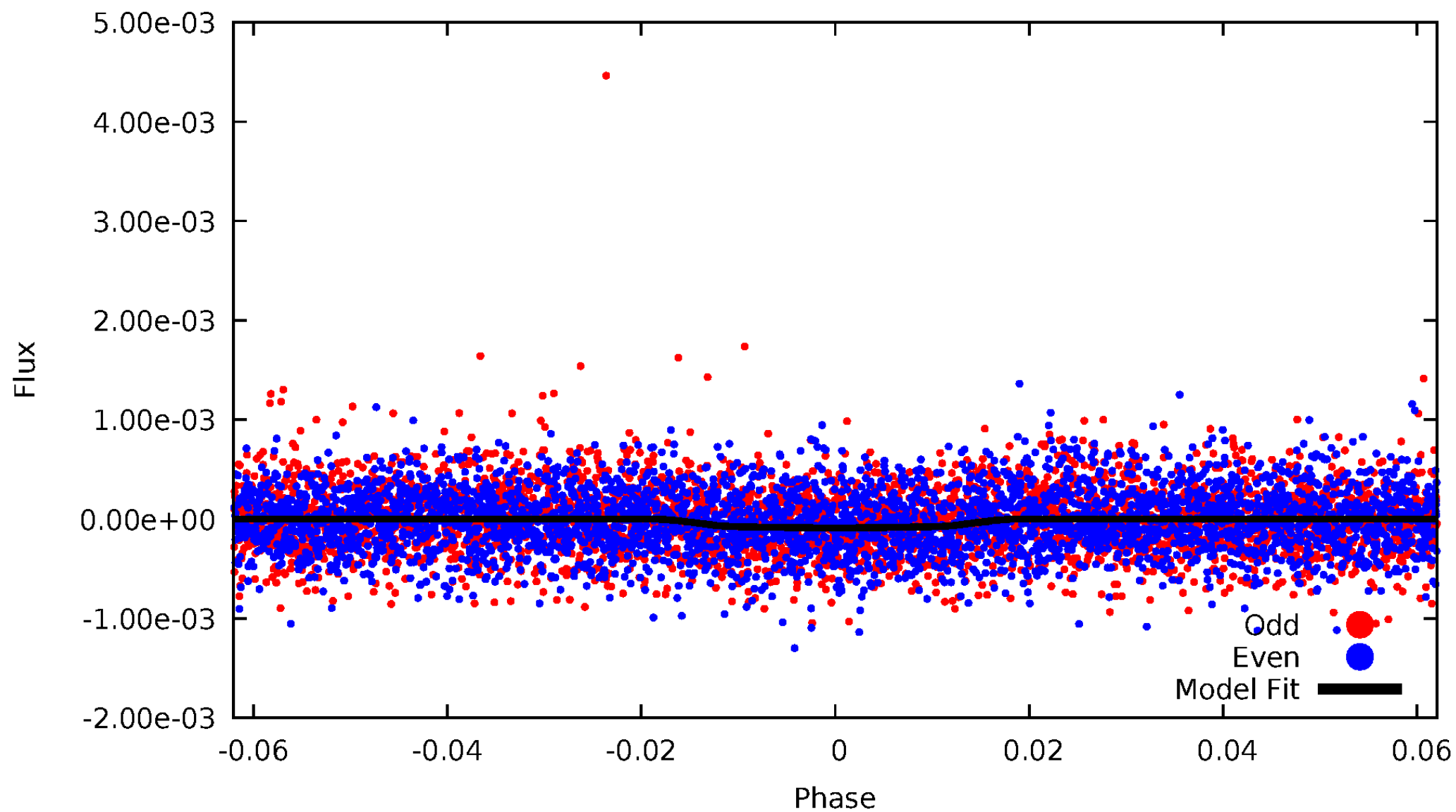


TCE 005003670-03



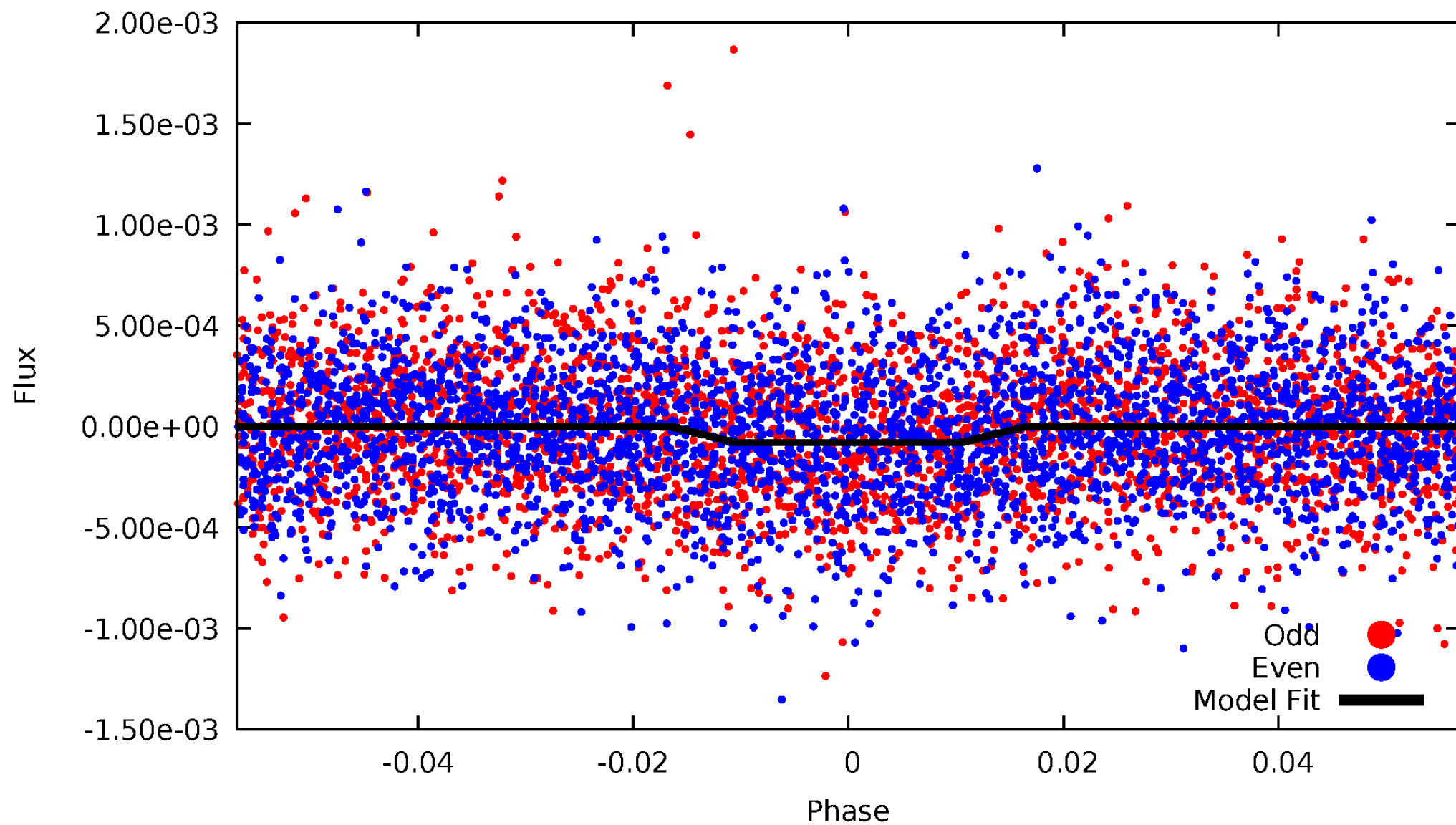
DV Odd/Even

TCE 005003670-03

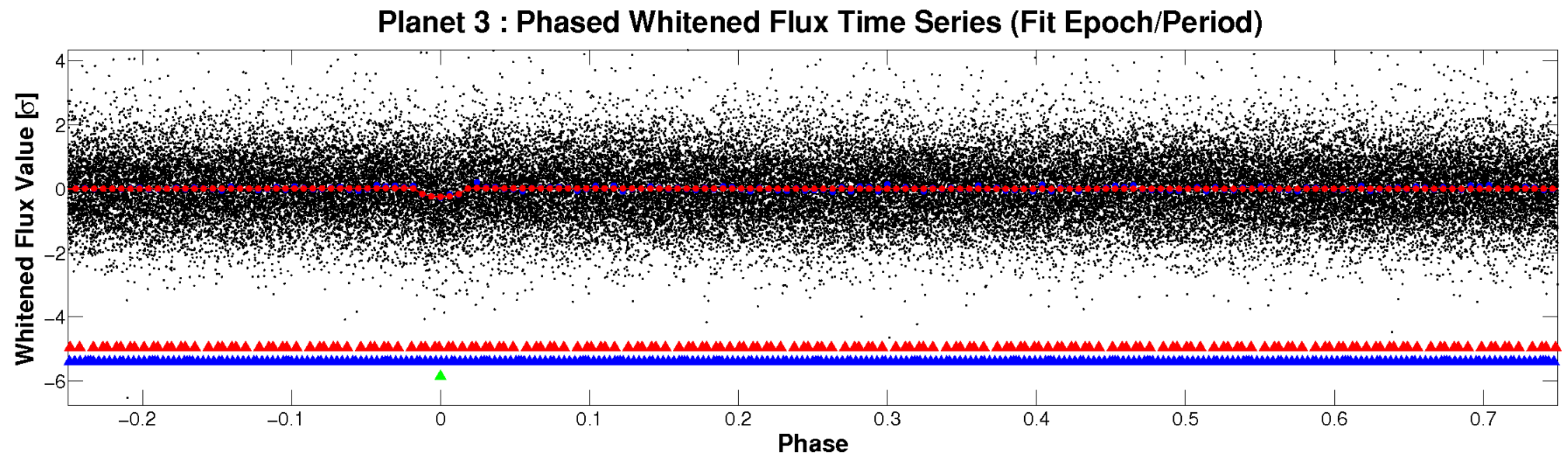
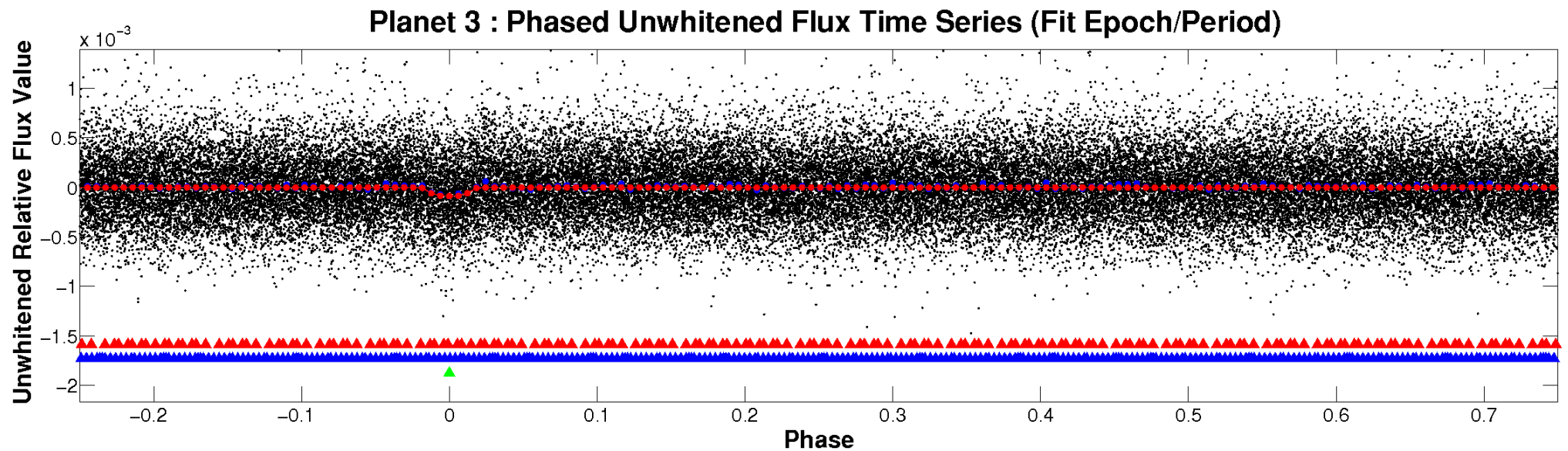


ALT Odd/Even

TCE 005003670-03

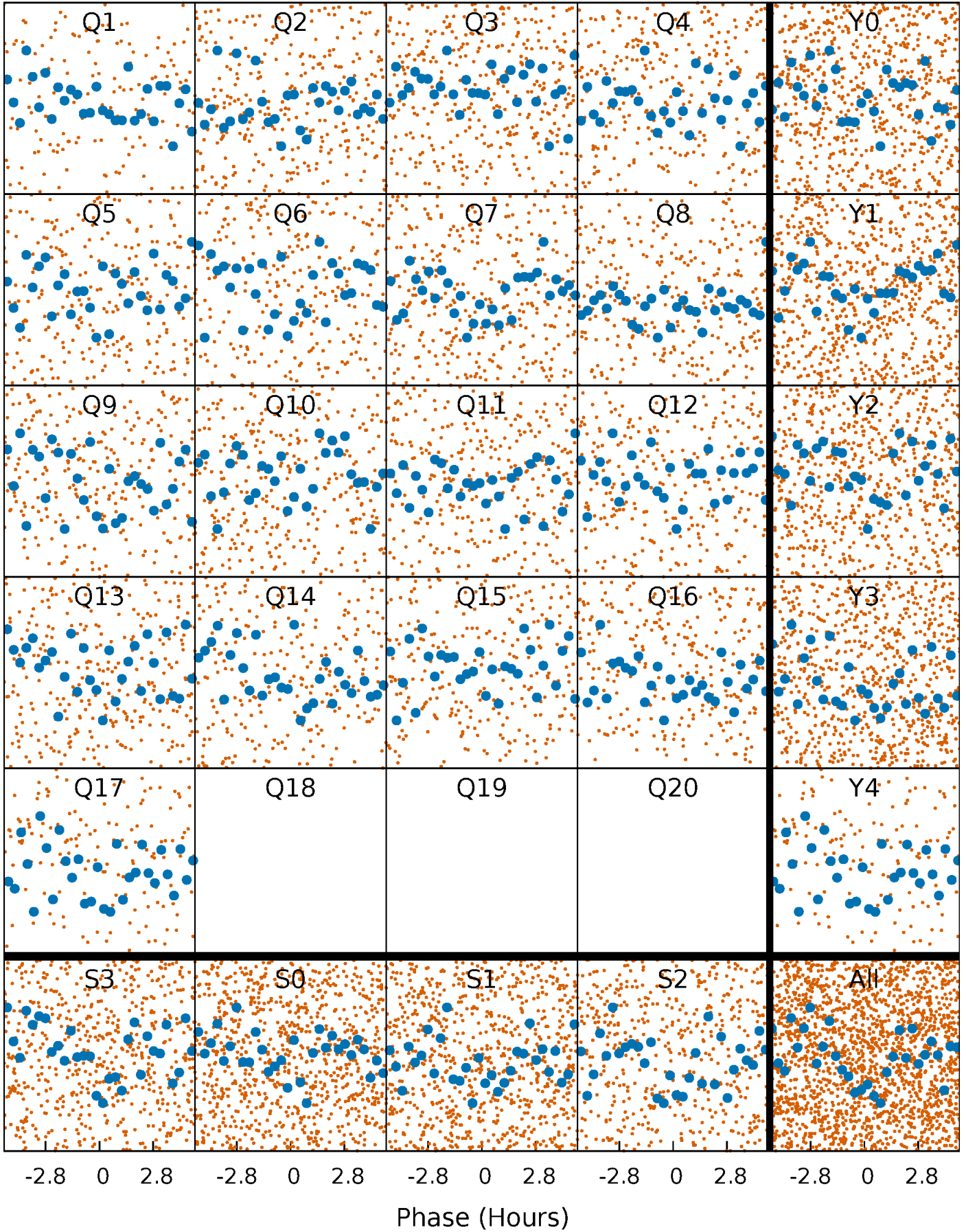


Non-Whitened Vs. Whitened Light Curve



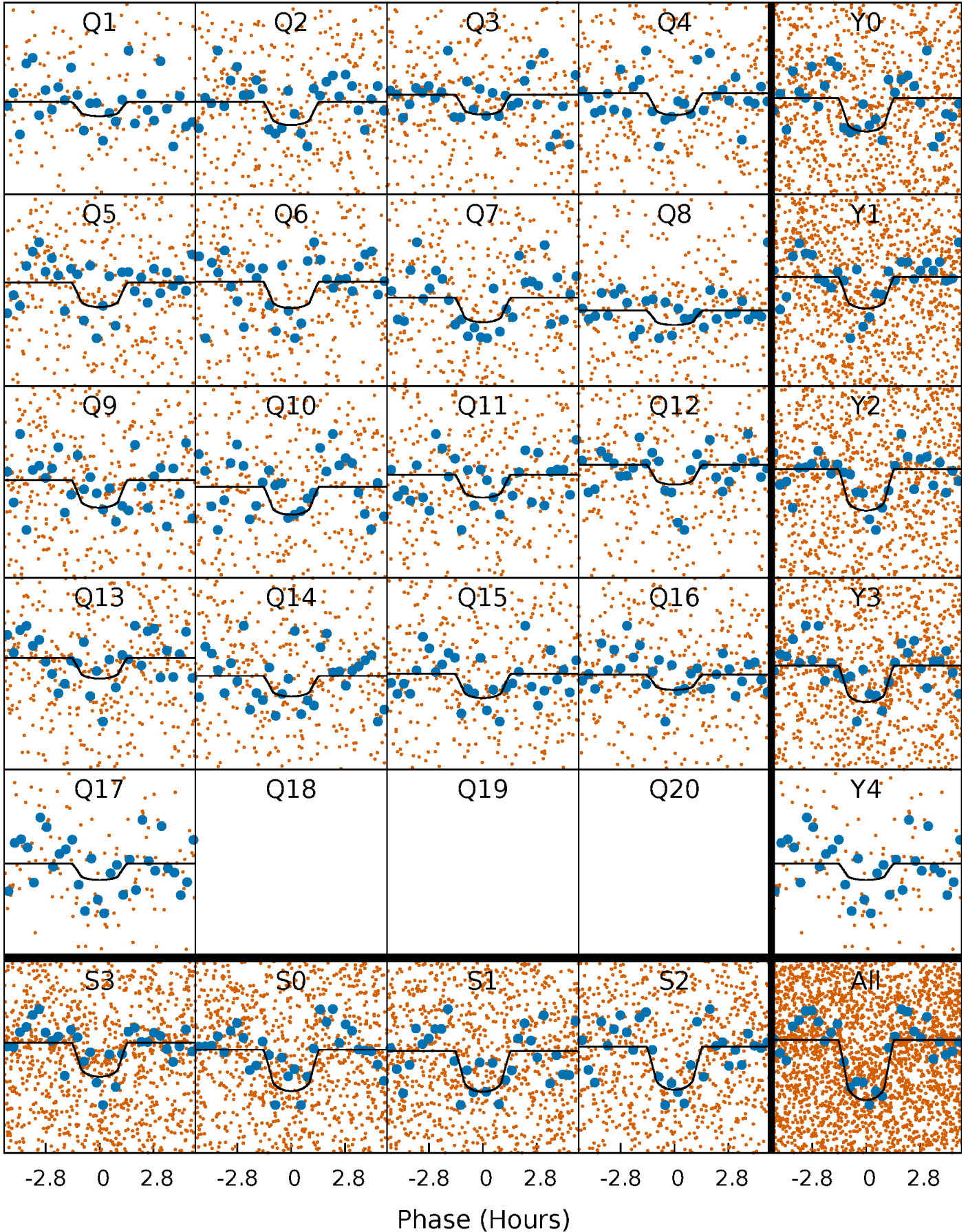
PDC Quarter-Phased Transit Curves

TCE 005003670-03 P= 3.339253 Days $T_0=134.156792$ (BKJD)



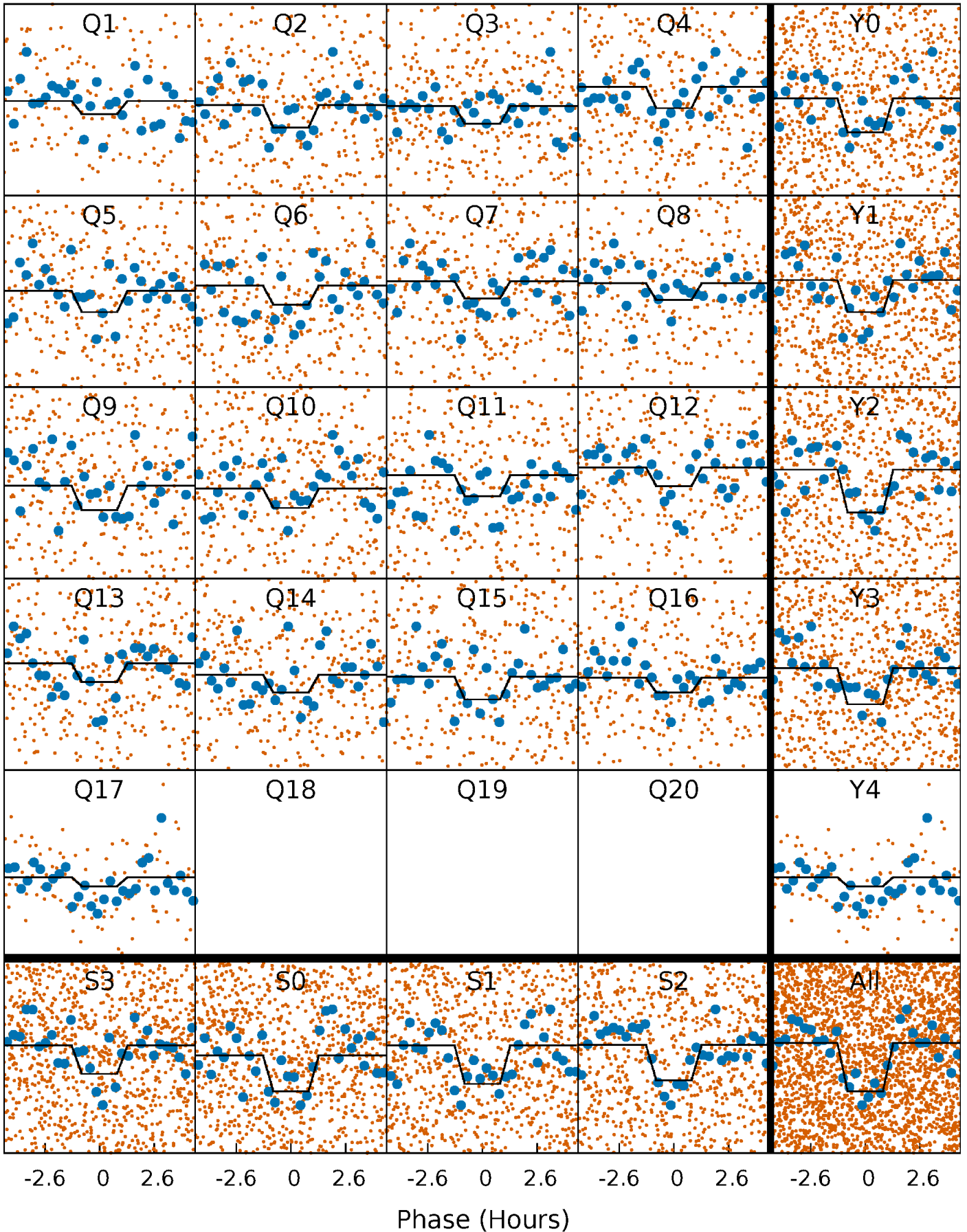
DV Quarter-Phased Transit Curves

TCE 005003670-03 P= 3.339253 Days $T_0=134.156792$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

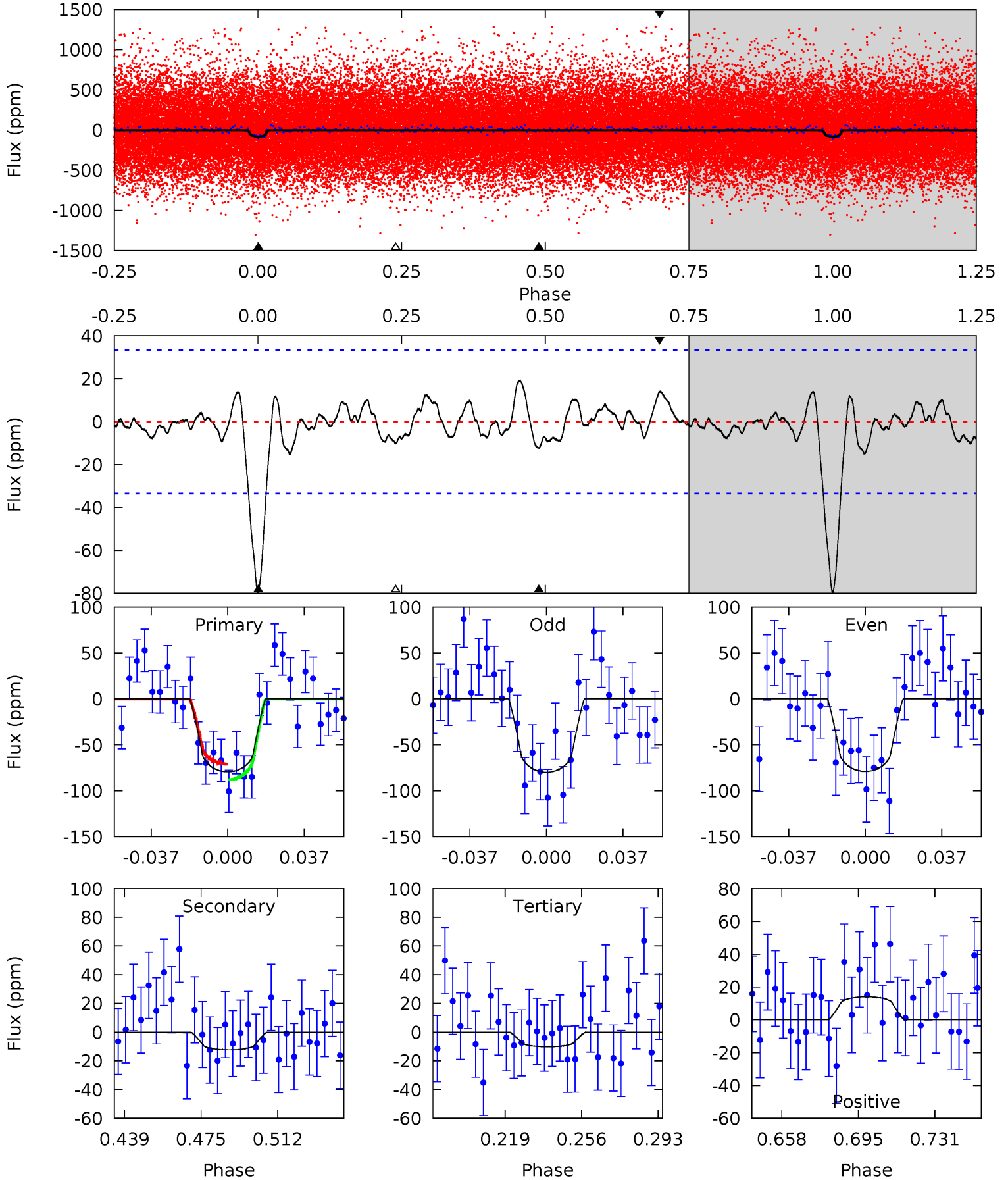
TCE 005003670-03 $P = 3.339277$ Days $T_0 = 134.153669$ (BKJD)



DV Model-Shift Uniqueness Test

005003670-03, P = 3.339253 Days, E = 130.817539 Days

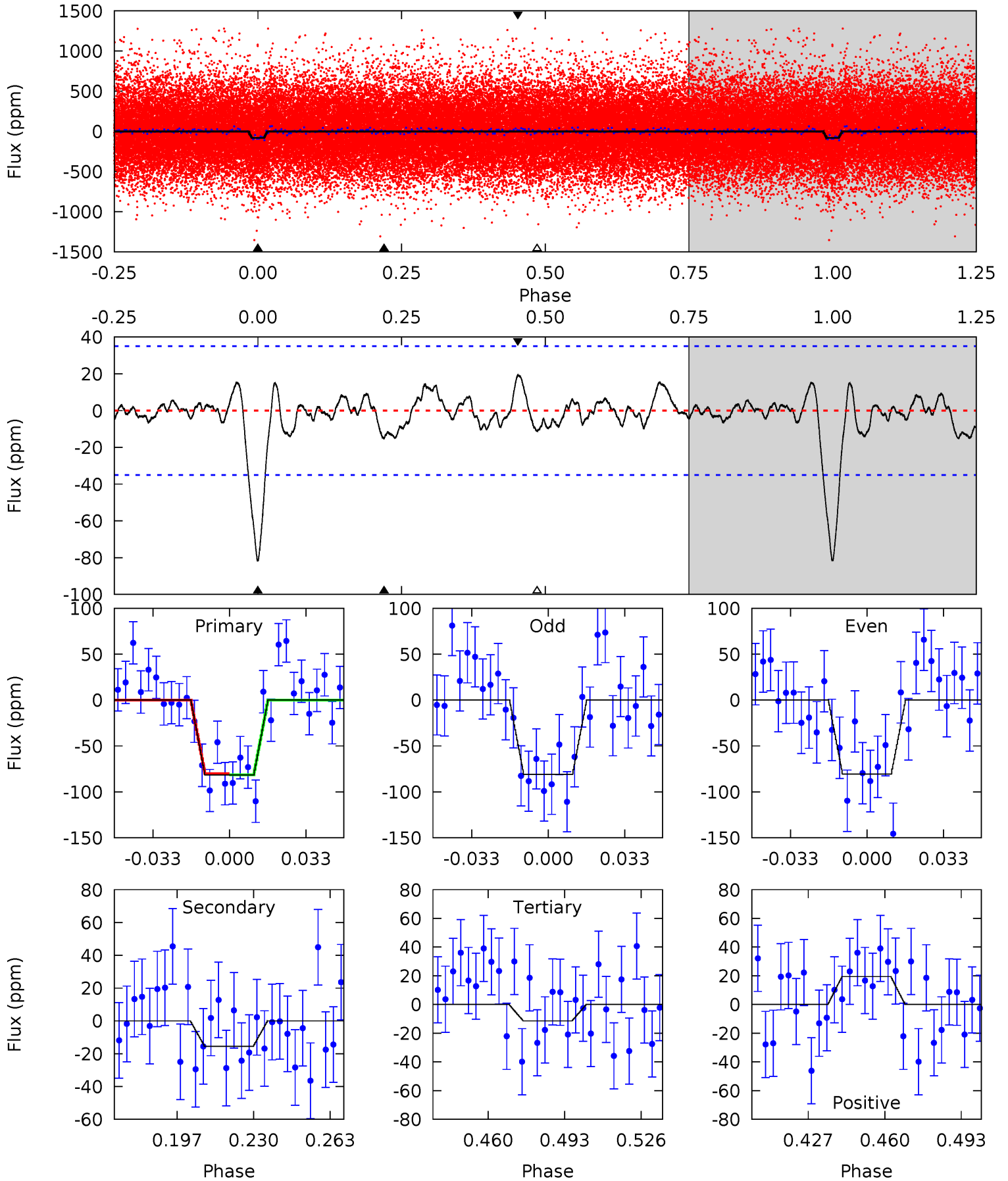
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	1.76	1.46	2.01	4.77	2.09	0.83	9.88	9.32	0.31	-0.25	0.06	0.86	0.19	1.22



Alt Model-Shift Uniqueness Test

005003670-03, P = 3.339277 Days, E = 130.814392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	2.11	1.56	2.67	4.79	2.13	0.86	9.62	8.51	0.55	-0.55	0.03	1.14	0.19	0.09



Stellar Parameters For KIC 005003670

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5700^{+77}_{-77}	$4.434^{+0.063}_{-0.117}$	$0.160^{+0.150}_{-0.150}$	$1.006^{+0.148}_{-0.079}$	$1.003^{+0.056}_{-0.062}$	$1.385^{+0.332}_{-0.454}$
	+1%/-1%	+1%/-3%	+94%/-94%	+15%/-8%	+6%/-6%	+24%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 005003670-03 / KOI 4524.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 7	$1.21^{+0.78}_{-0.63}$	1693^{+68}_{-54}	3570^{+1269}_{-671}	$8.116^{+31.883}_{-5.979}$
Alt.	-15 ± 7	$1.03^{+0.75}_{-0.61}$	1690^{+69}_{-52}	3958^{+1836}_{-789}	15^{+80}_{-11}

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 $A_{obs} \gg 1.0$

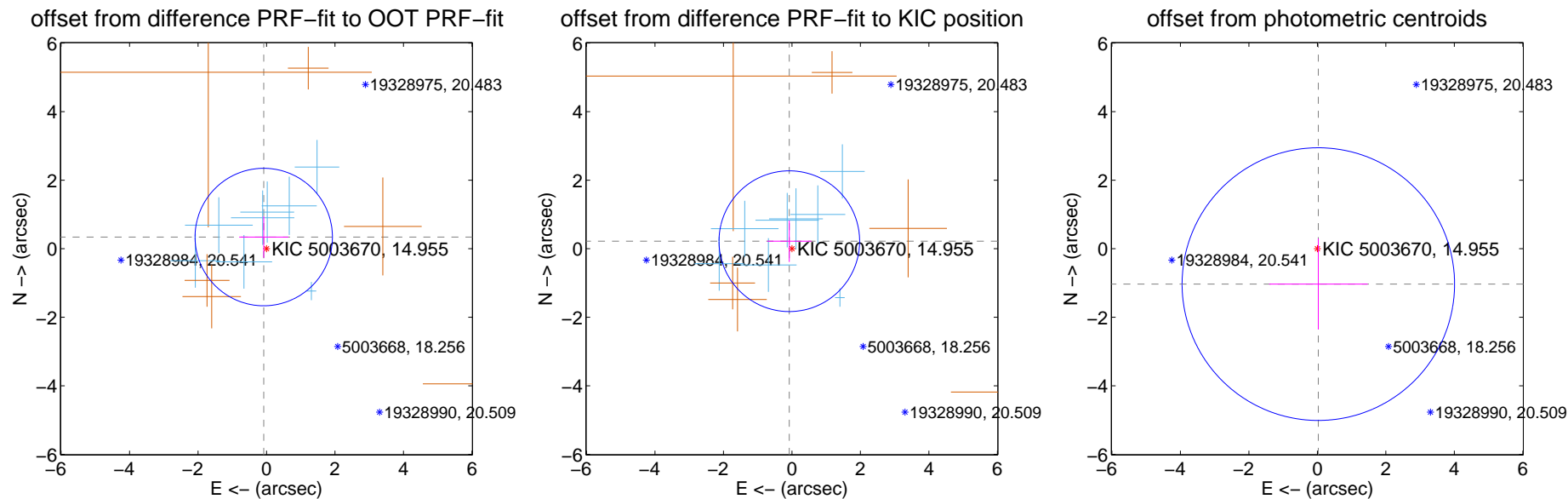
DV Centroid Data

Supplemental centroid analysis for 005003670-03. Kepler magnitude: 14.96. Transit SNR 8.65

There are 8 quarters with good PRF difference image offsets

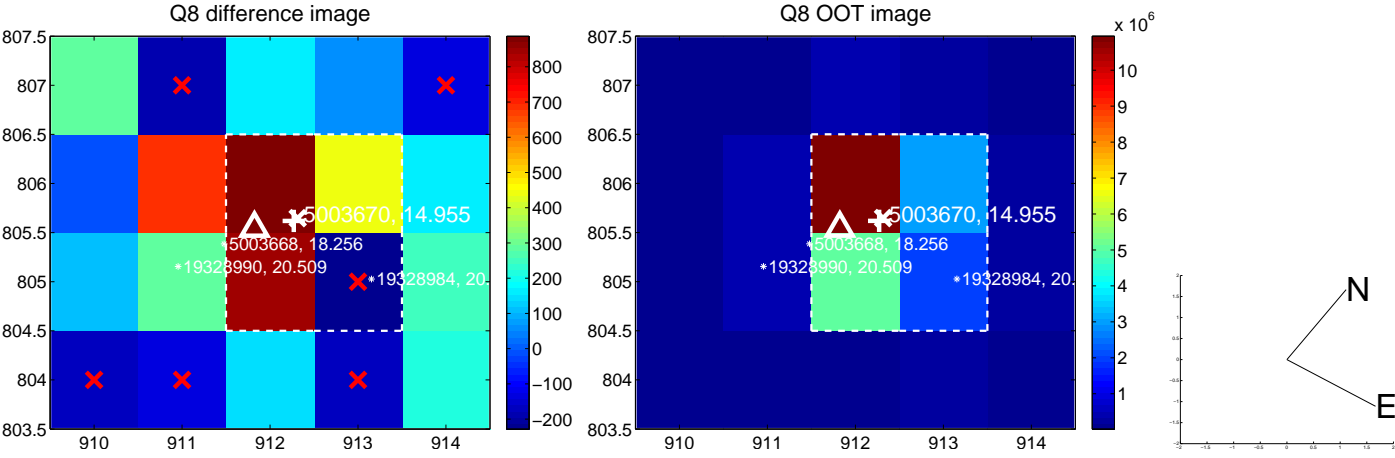
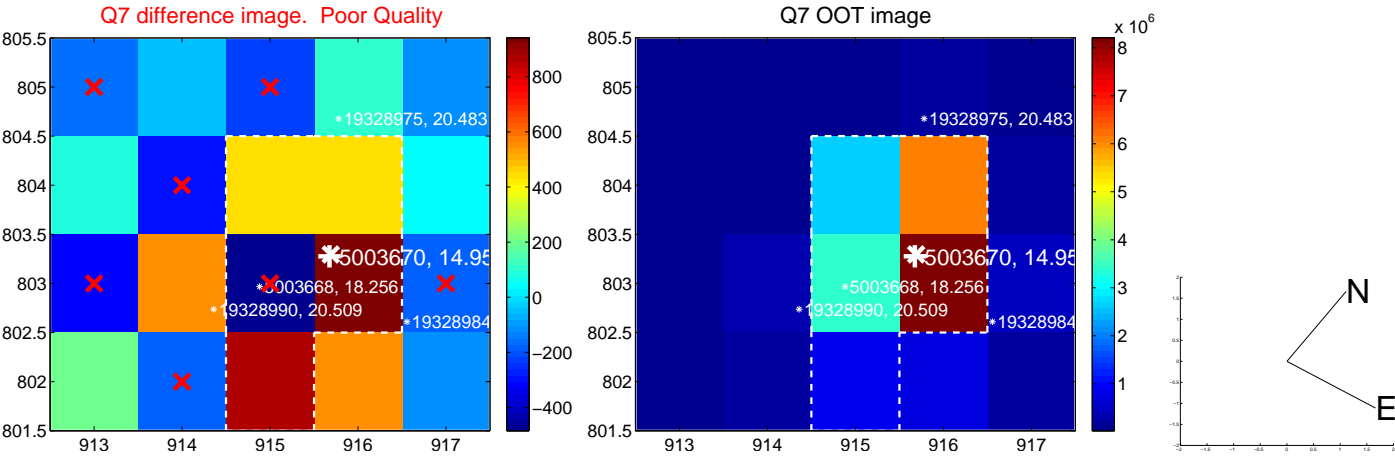
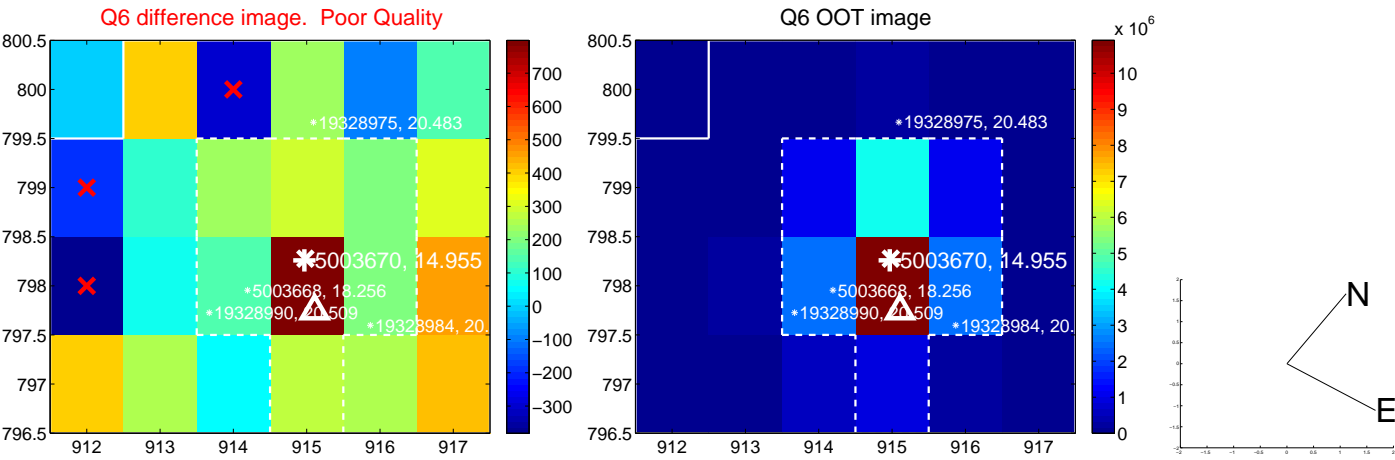
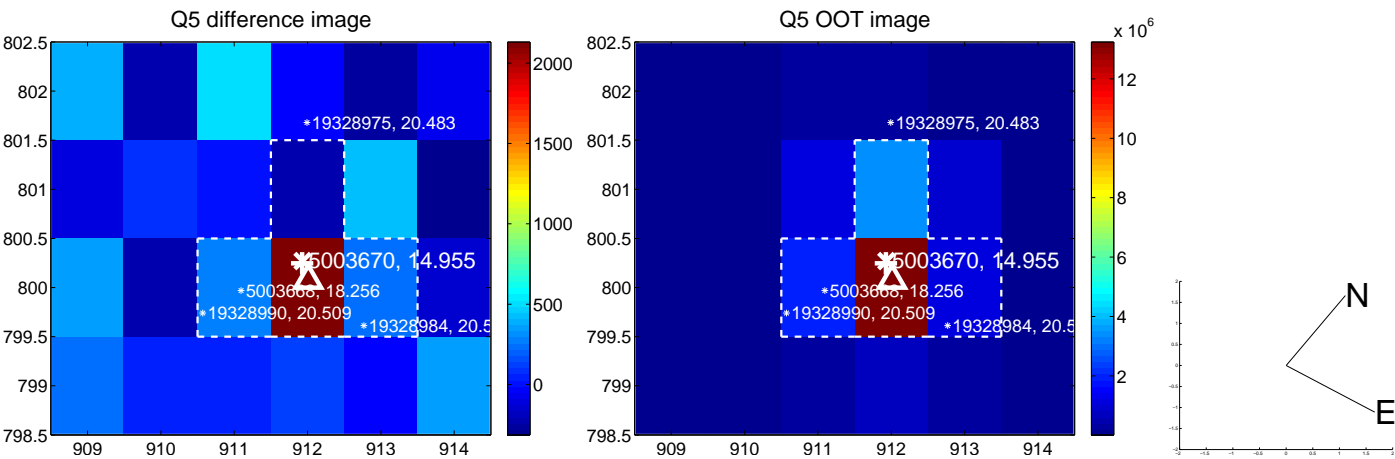
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.351 ± 0.668	0.52	0.081 ± 0.716	0.341 ± 0.606
PRF-fit source offset from KIC position	0.233 ± 0.684	0.34	0.077 ± 0.647	0.220 ± 0.604
photometric centroid source offset	1.03 ± 1.33	0.78	-0.03 ± 1.44	-1.03 ± 1.33

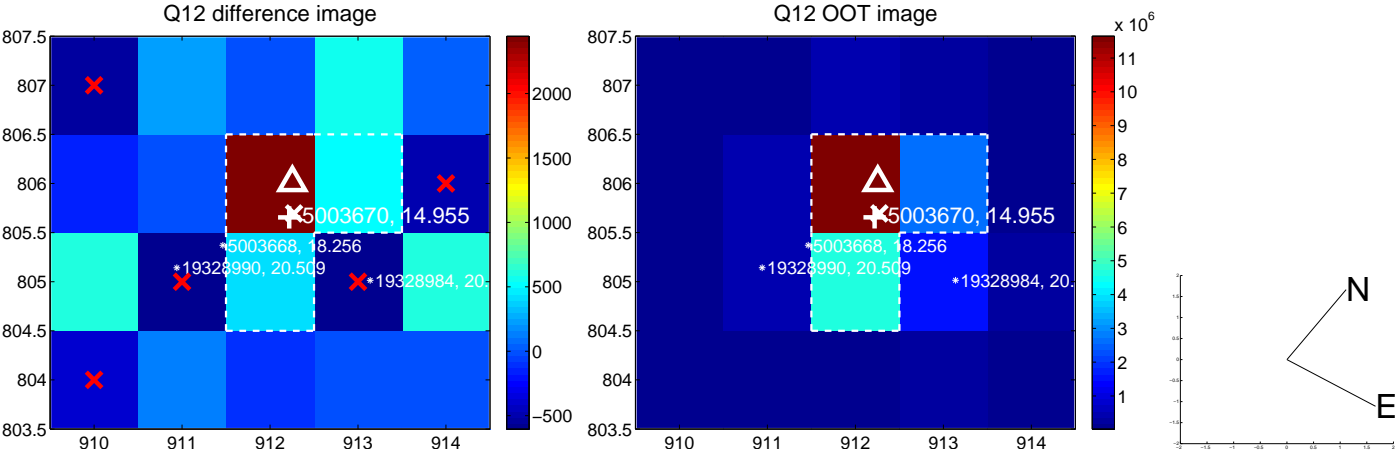
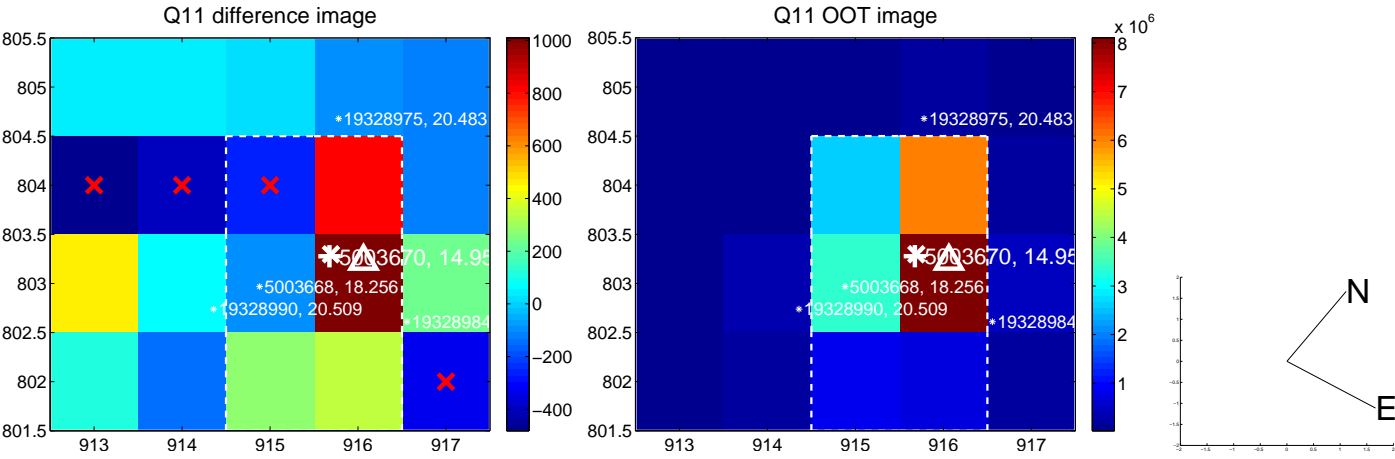
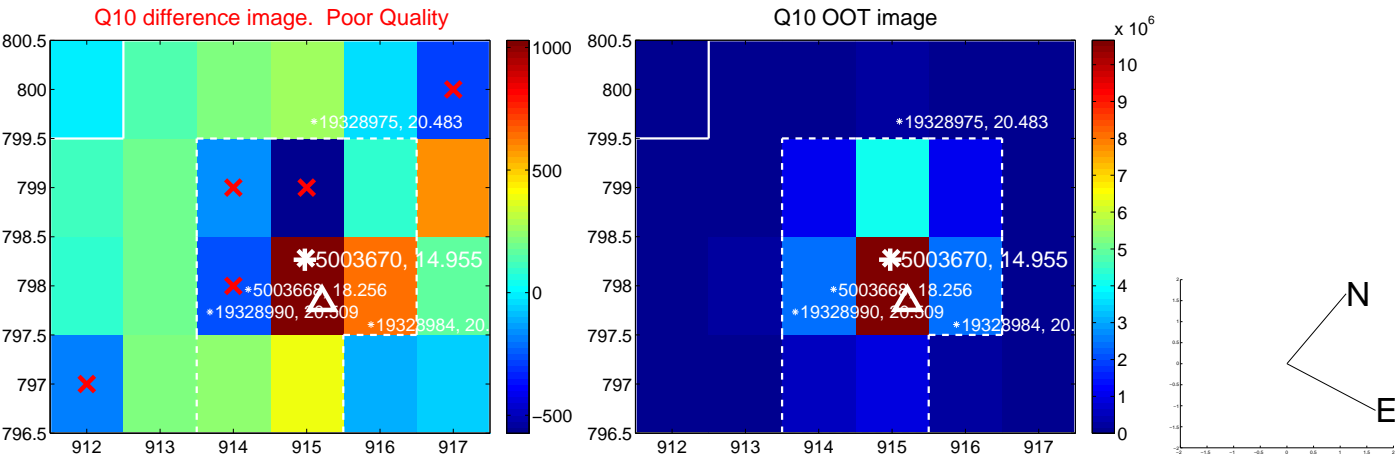
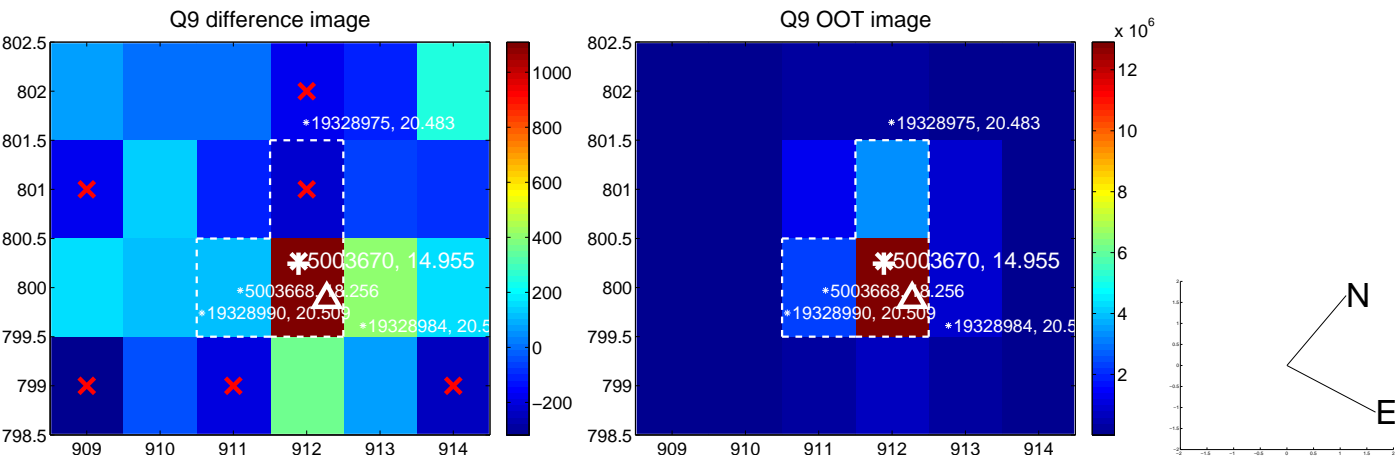


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

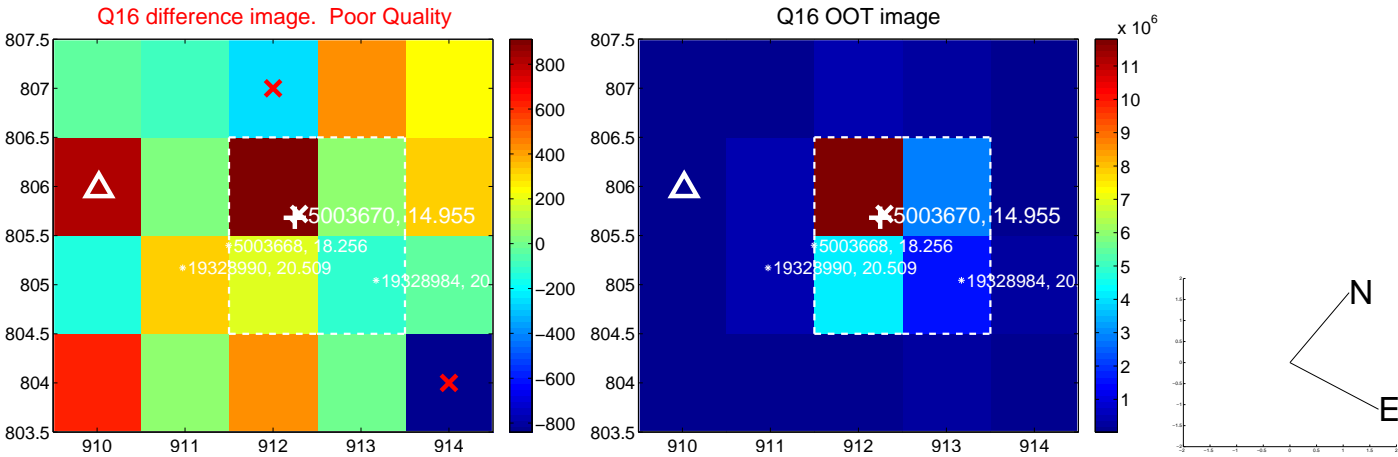
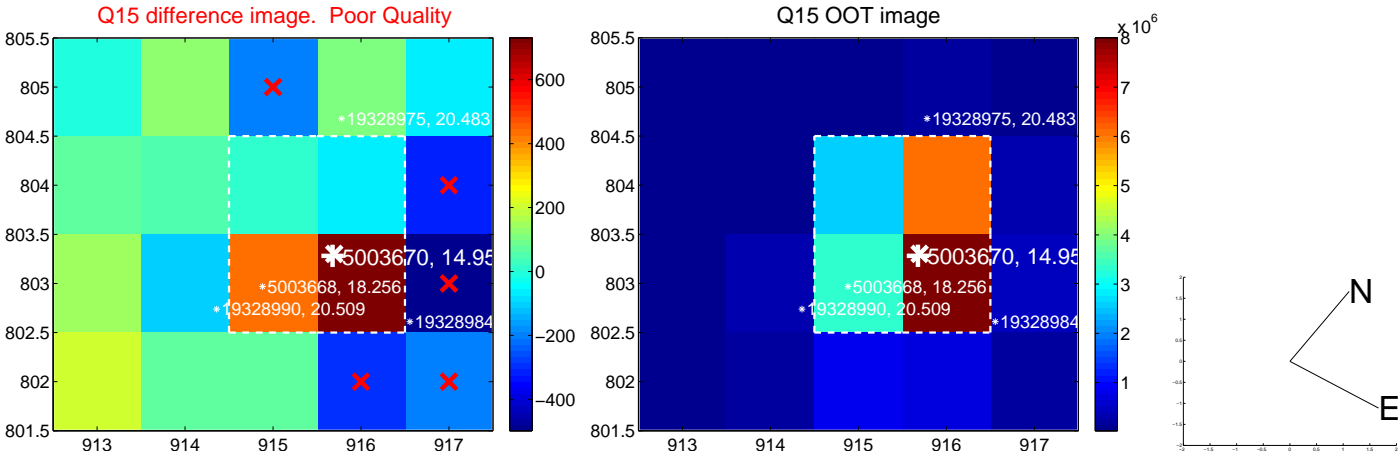
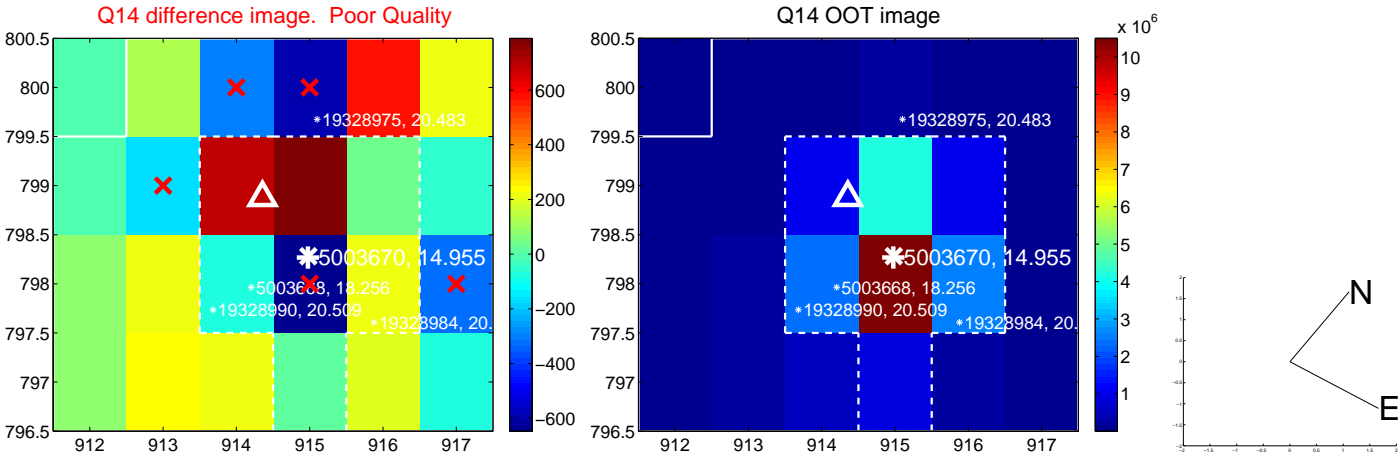
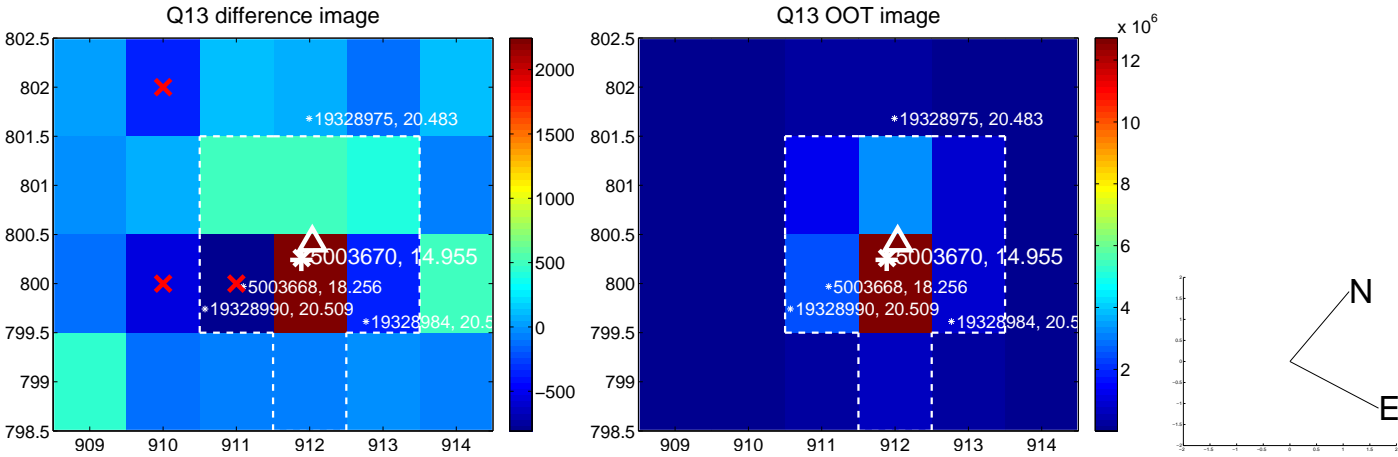
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



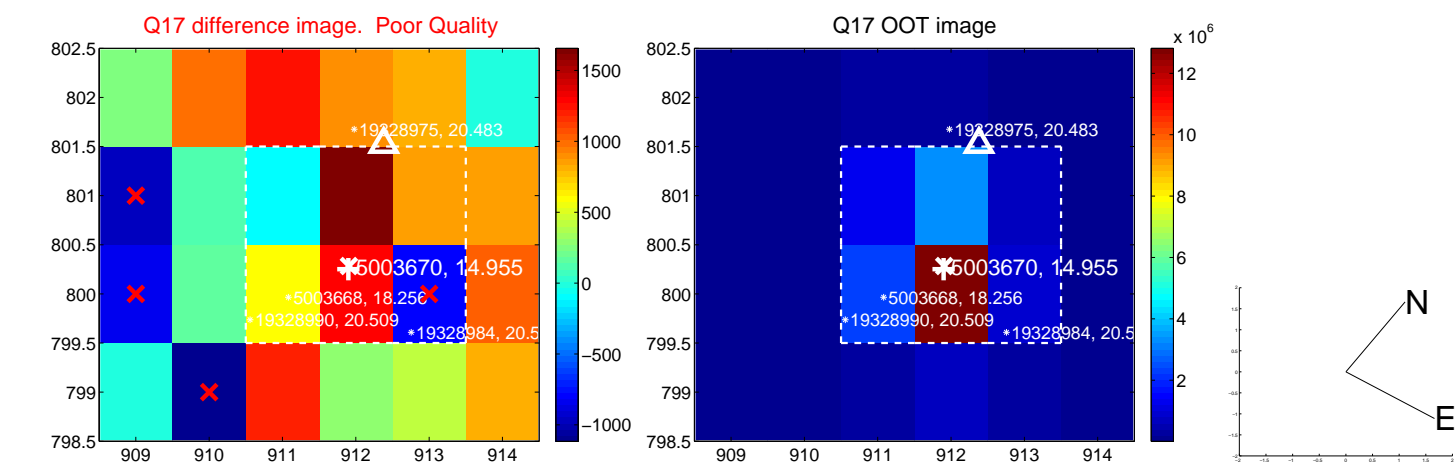
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



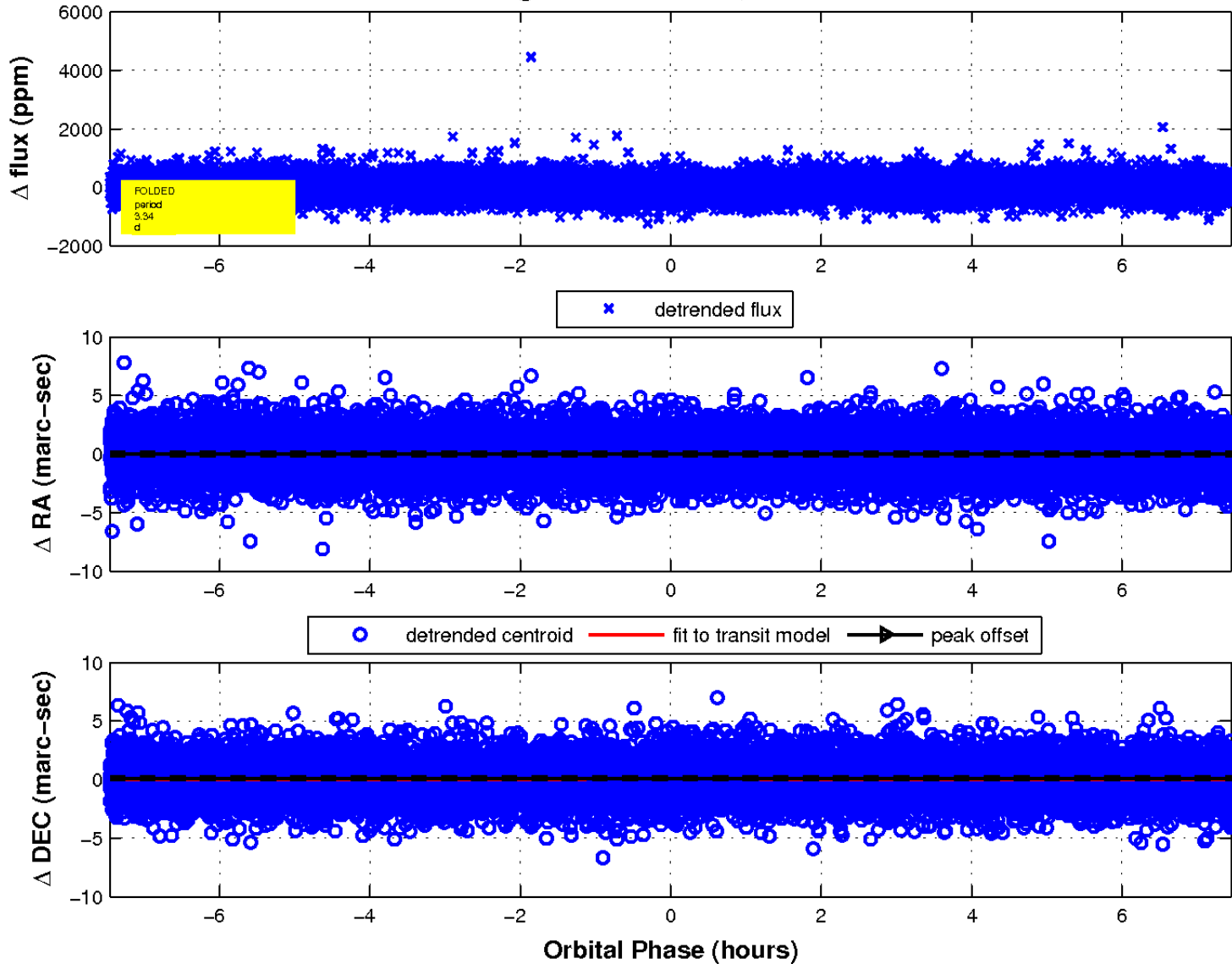
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

