

KIC 009466668

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})
009466668-01	OBS	0939.01	3.388032	133.262912	283.5	2.758	25.5	28.3	1.25	5553	2.53	707.43
009466668-02	OBS	0939.02	5.839067	132.095509	259.5	3.279	19.0	20.4	1.25	5553	2.36	342.36
009466668-03	OBS	0939.03	1.620472	132.065435	166.9	2.400	17.3	20.9	1.25	5553	2.07	1891.28
009466668-04	OBS	0939.04	10.681649	131.554770	314.9	3.732	14.8	17.3	1.25	5553	2.54	153.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009466668-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-04	OBS	PC	1.00	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.

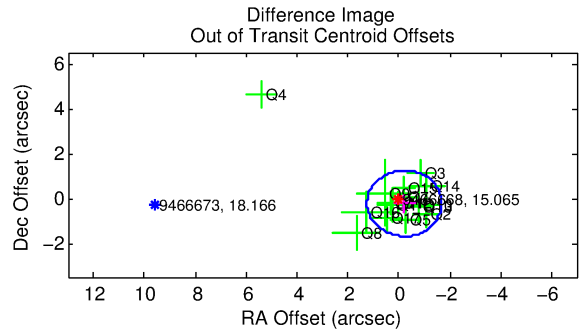
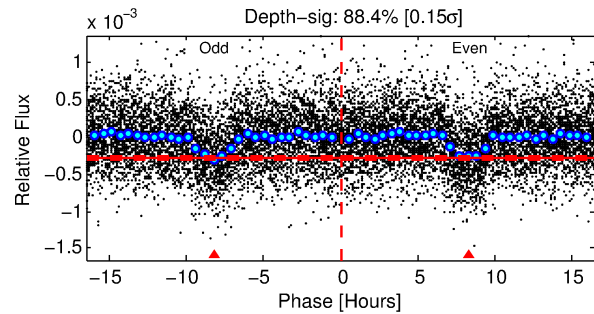
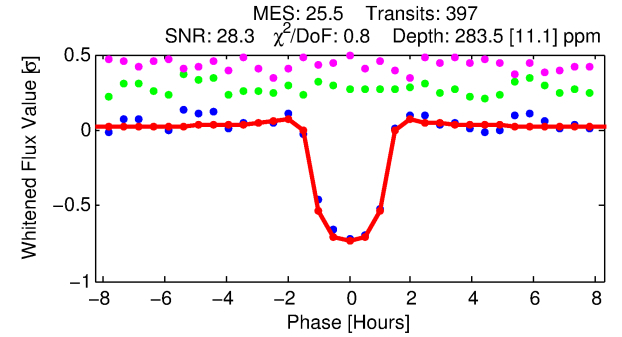
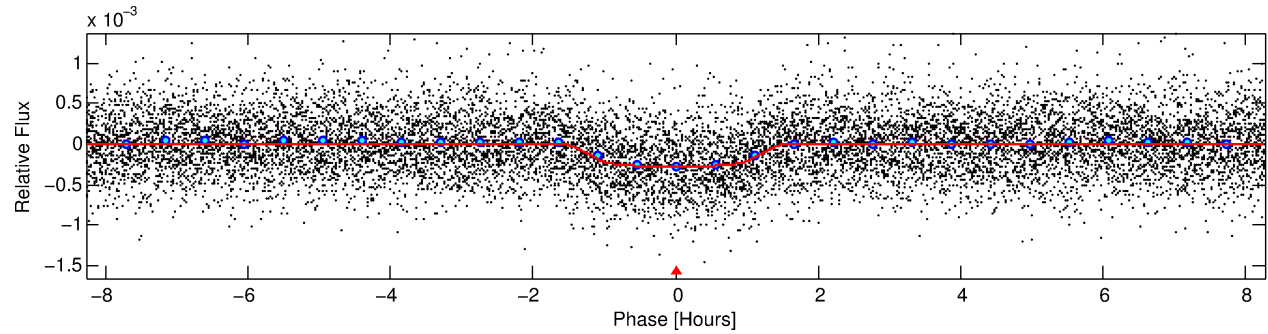
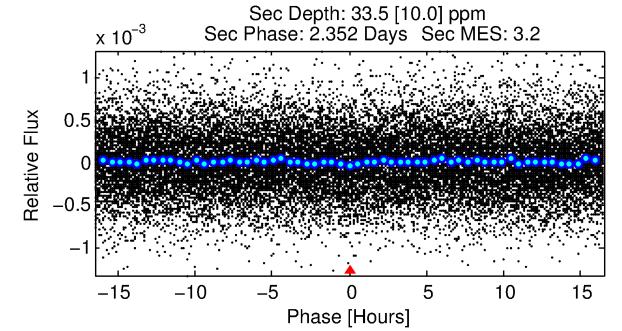
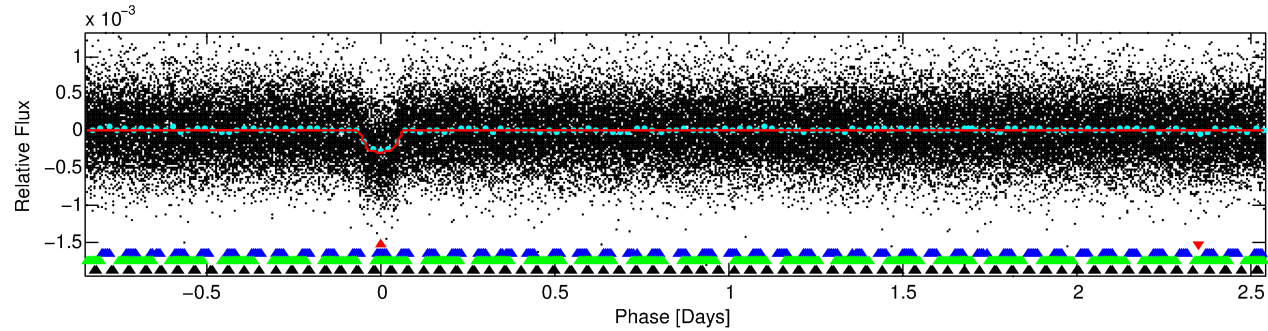
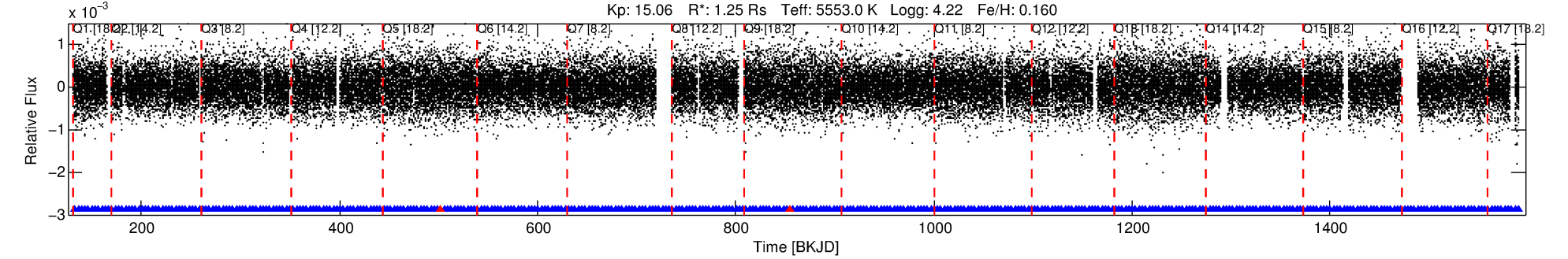
Ephemeris Match Information For 009466668-01

No Significant Match Found

DV One-Page Summary

KIC: 9466668 Candidate: 1 of 4 Period: 3.388 d
KOI: K00939.01 Name: Kepler-256c Corr: 0.969

Kp: 15.06 R*: 1.25 Rs T_{eff}: 5553.0 K Logg: 4.22 Fe/H: 0.160



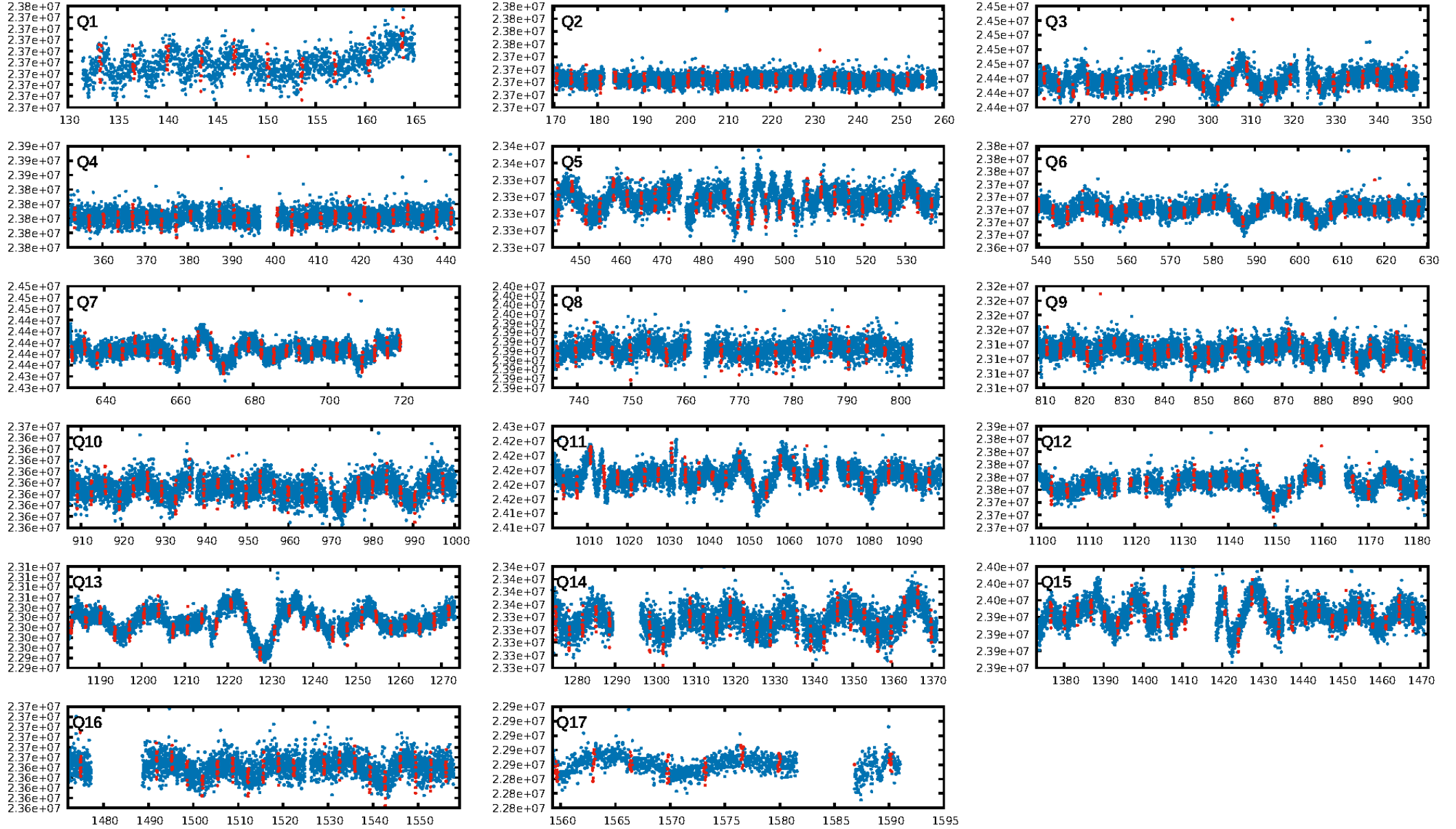
DV Fit Results:

Period = 3.38803 [0.00001] d
Epoch = 133.2629 [0.0015] BKJD
Rp/R* = 0.0186 [0.0033]
a/R* = 4.53 [3.40]
b = 0.90 [0.17]
Seff = 707.43 [230.39]
Teq = 1315 [107] K
Rp = 2.53 [0.66] Re
a = 0.0434 [0.0084] AU
Ag = 5.40 [3.04] [1.45σ]
Teffp = 3100 [366] K [4.68σ]

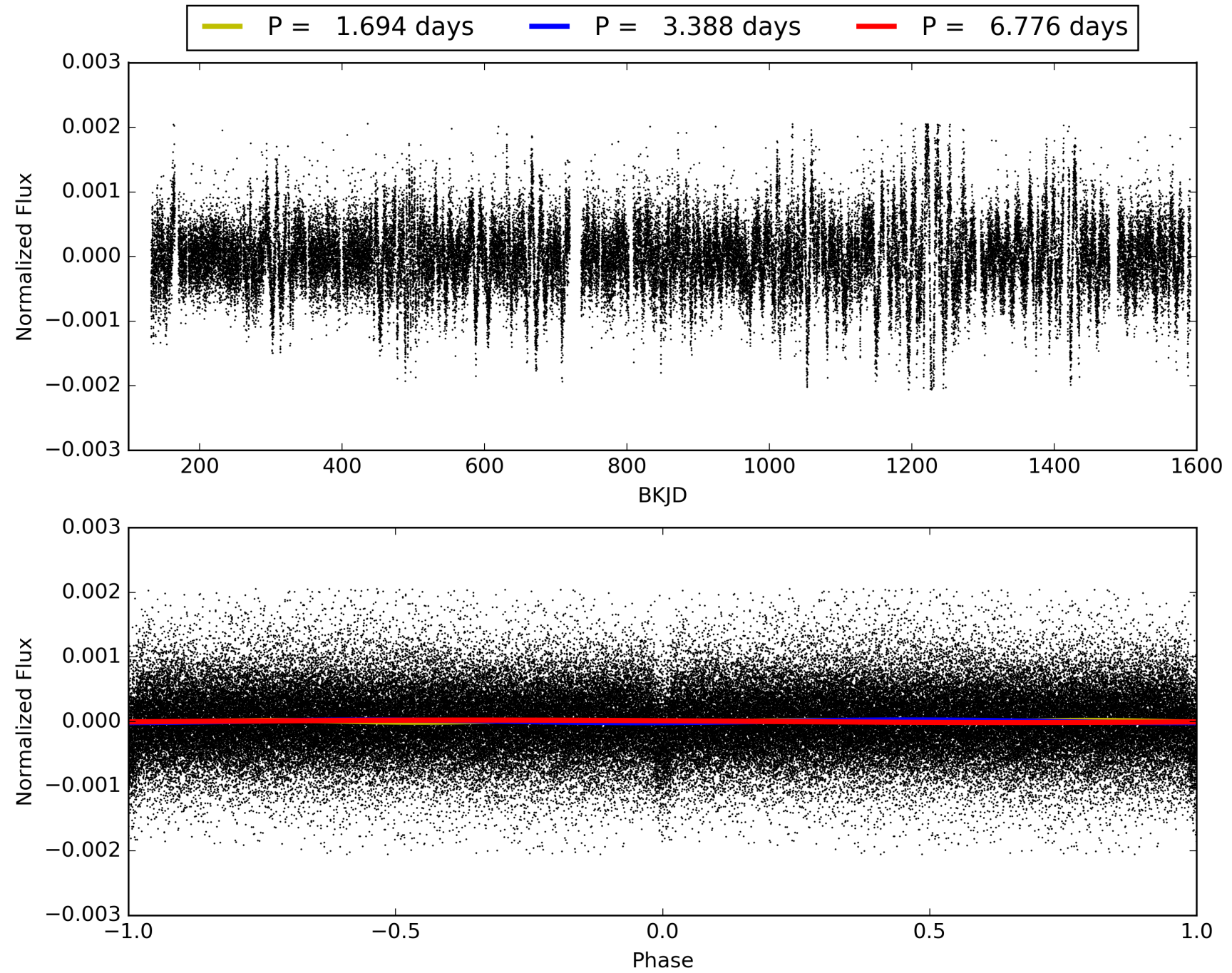
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.60σ]
LongPeriod-sig: 100.0% [13.73σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.76e-135
RollingBand-fgt: 0.99 [377/379]
GhostDiagnostic-chr: 9.996
Centroid-sig: 24.8%
Centroid-so: 0.545 arcsec [1.10σ]
OotOffset-rm: 0.312 arcsec [0.64σ]
KicOffset-rm: 0.352 arcsec [0.75σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009466668-01, PDC Light Curves

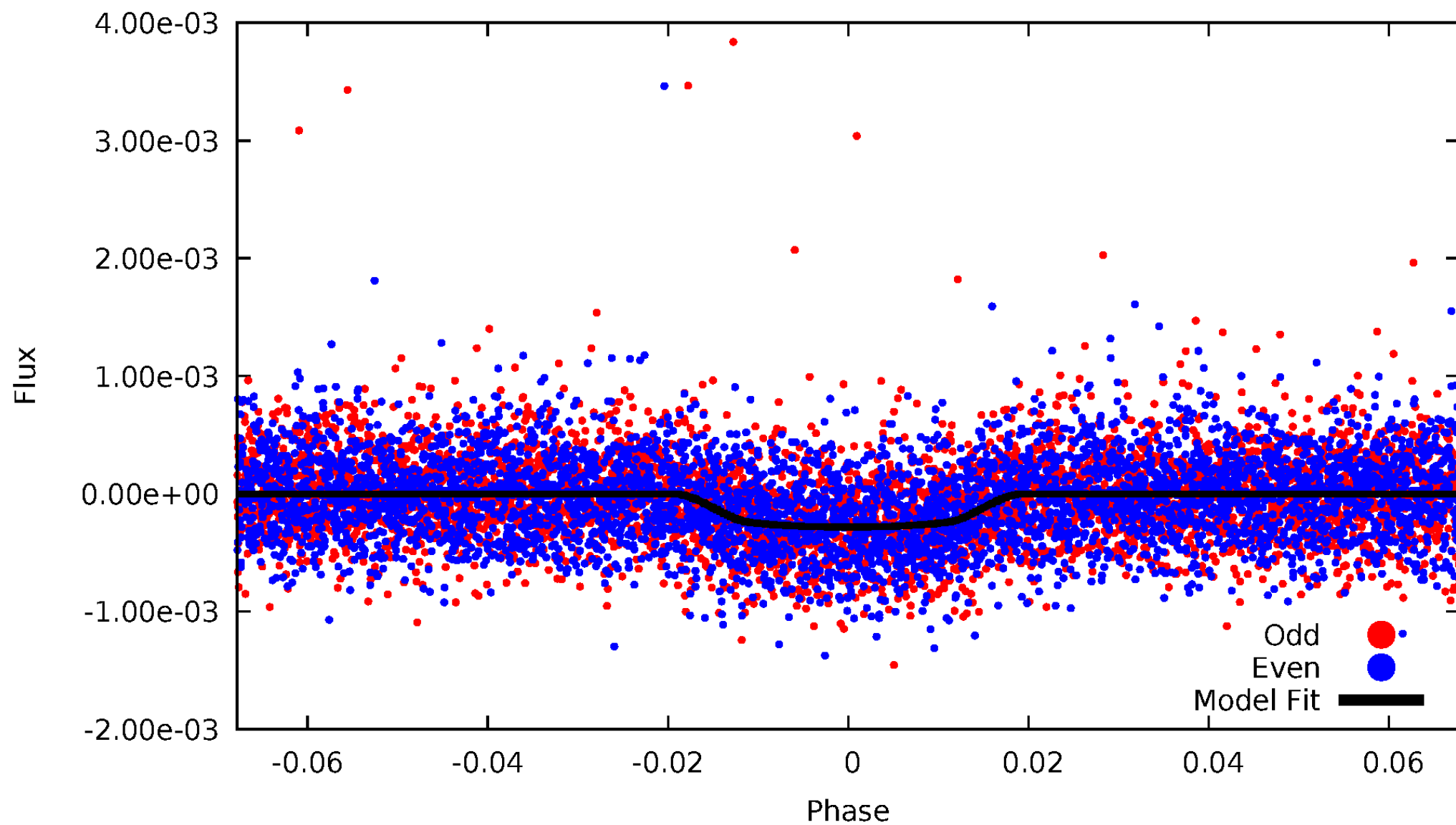


TCE 009466668-01



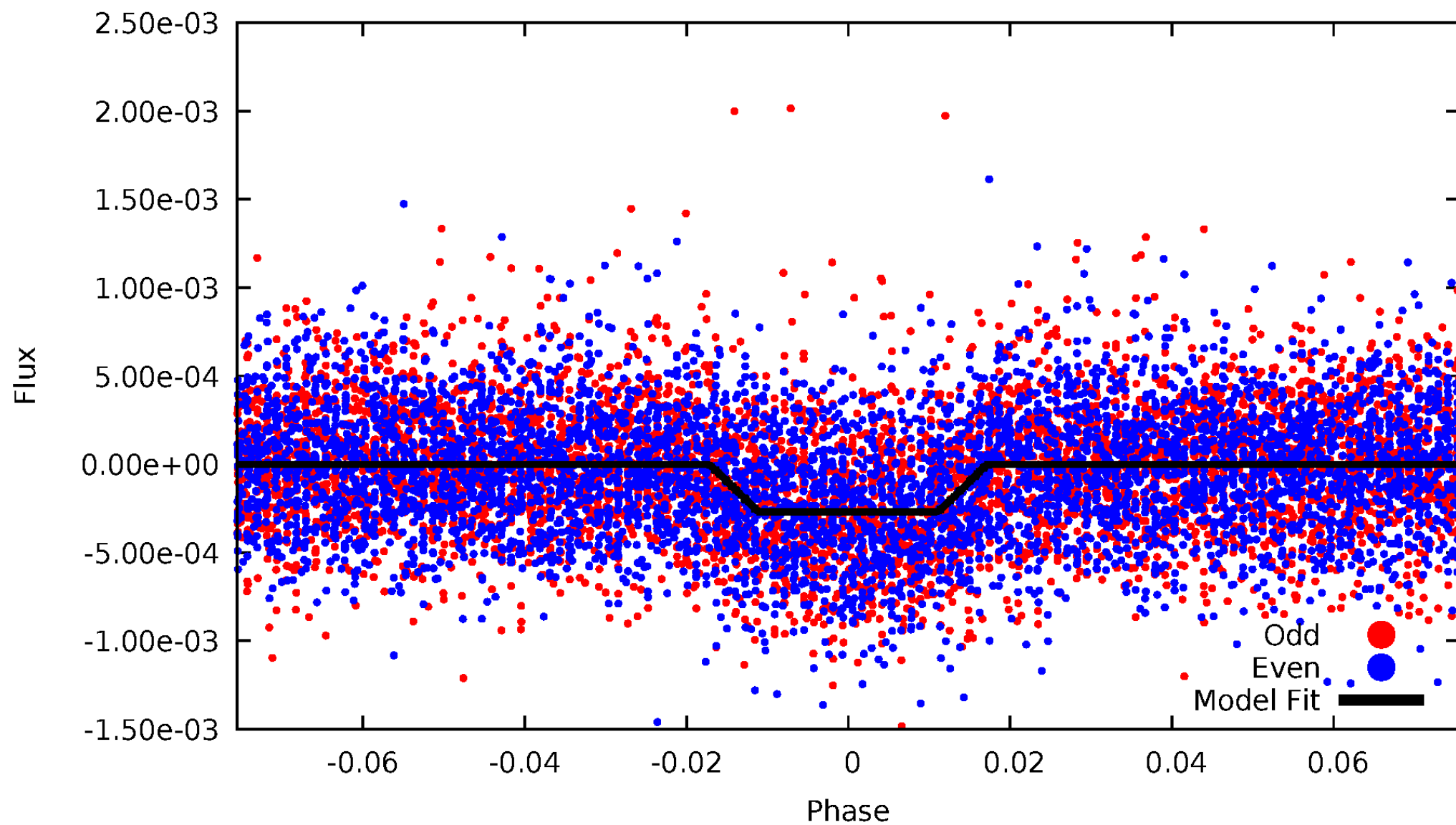
DV Odd/Even

TCE 009466668-01

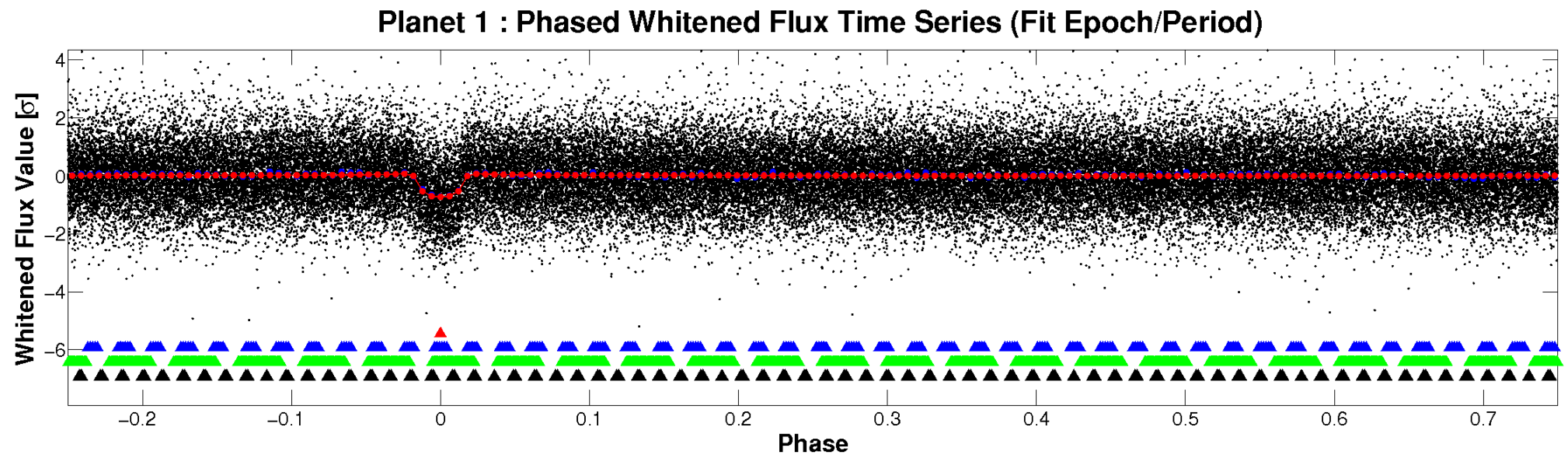
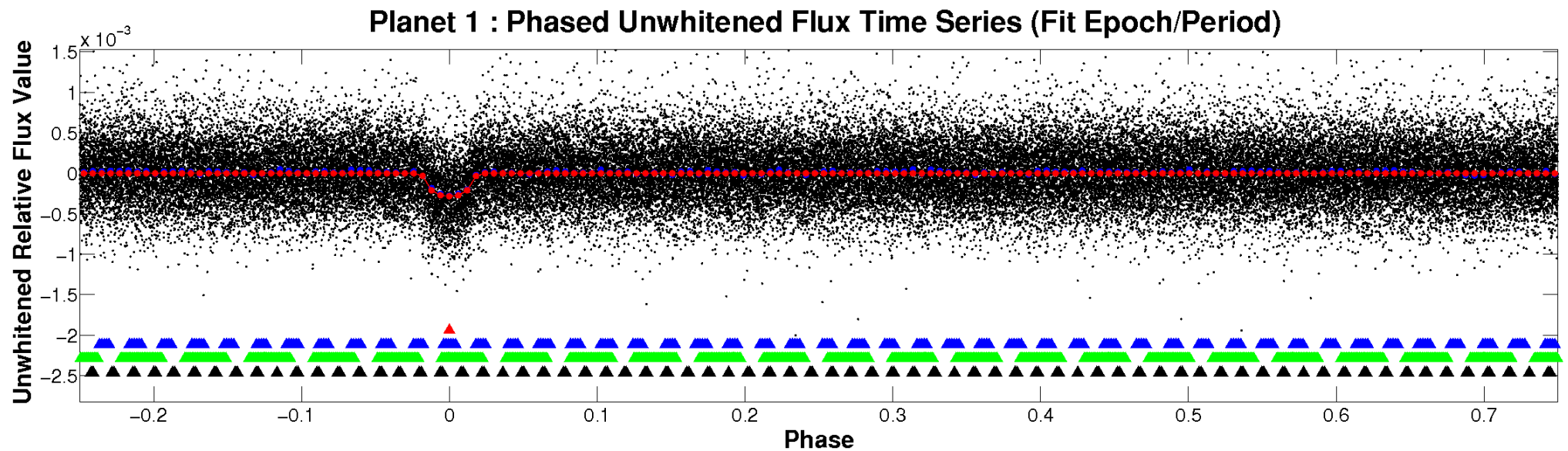


ALT Odd/Even

TCE 009466668-01

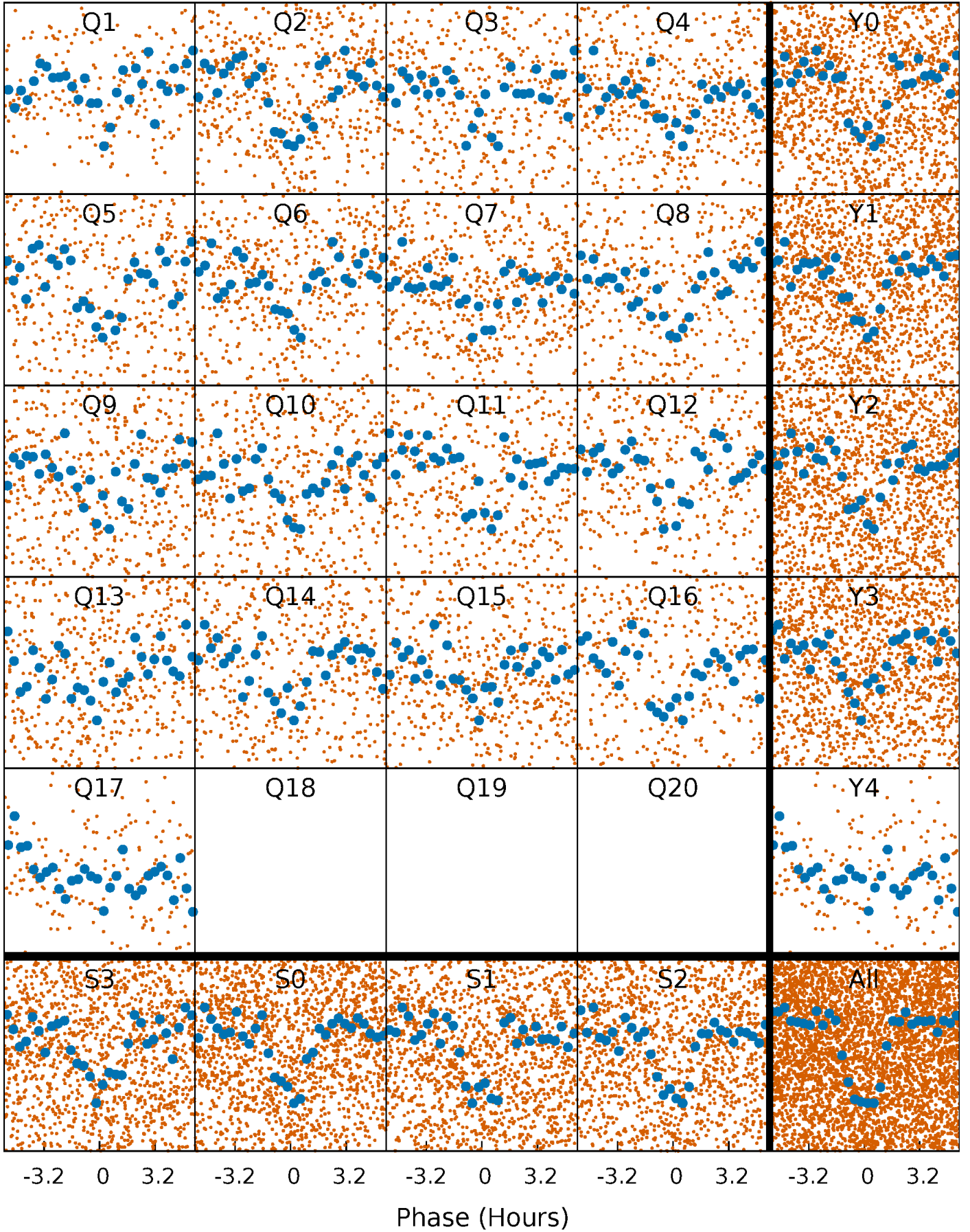


Non-Whitened Vs. Whitened Light Curve



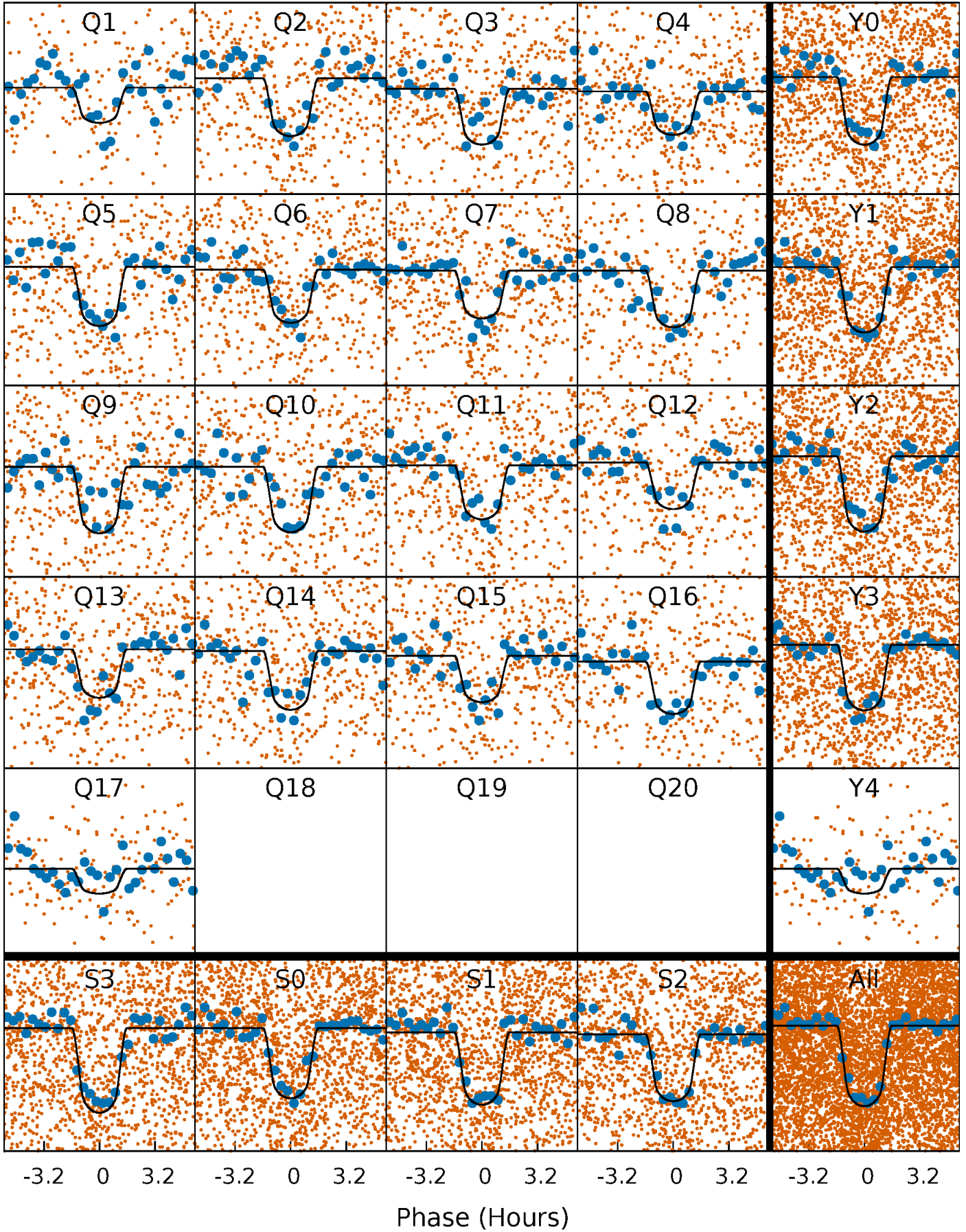
PDC Quarter-Phased Transit Curves

TCE 009466668-01 P= 3.388032 Days $T_0=133.262912$ (BKJD)



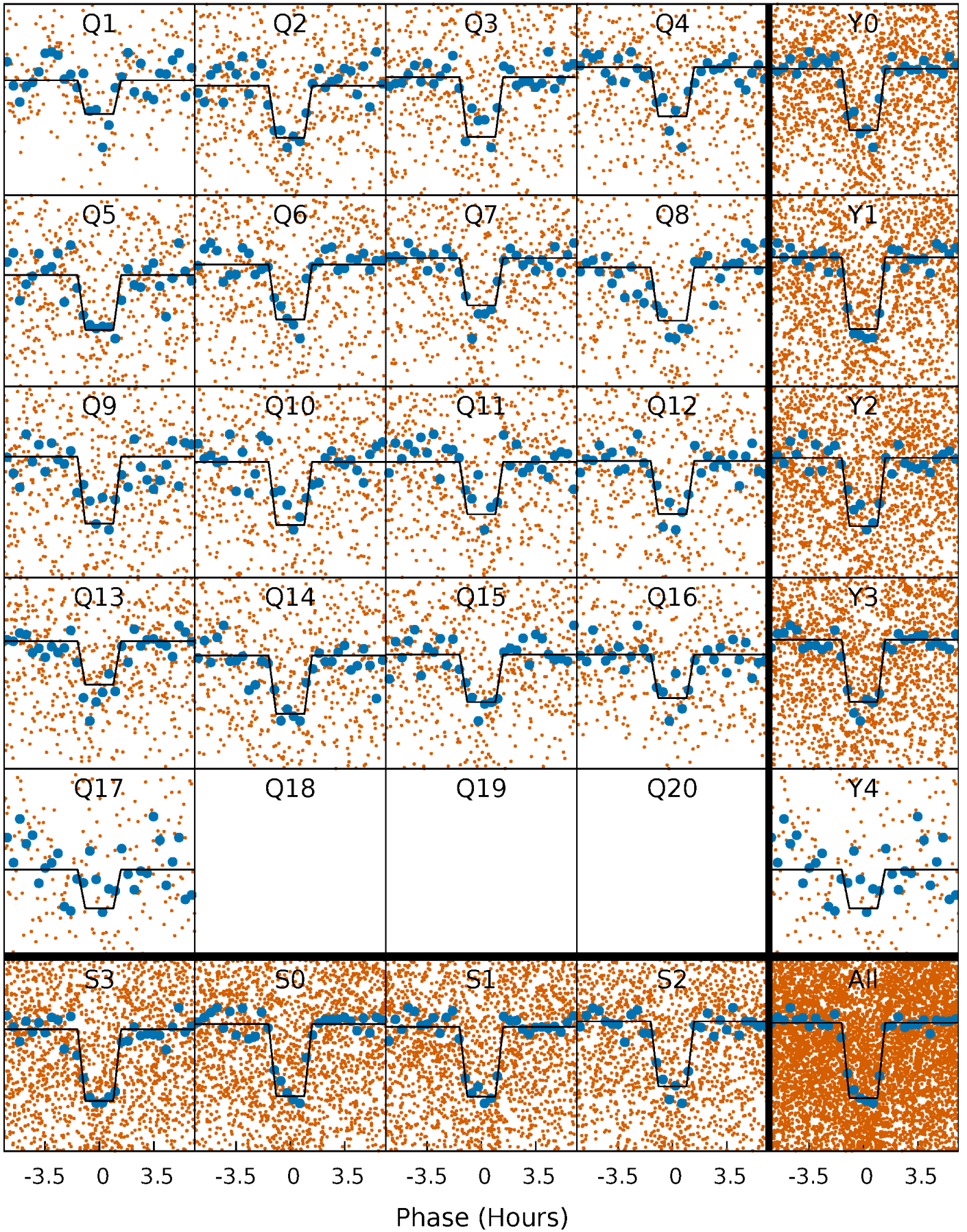
DV Quarter-Phased Transit Curves

TCE 009466668-01 P= 3.388032 Days $T_0=133.262912$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

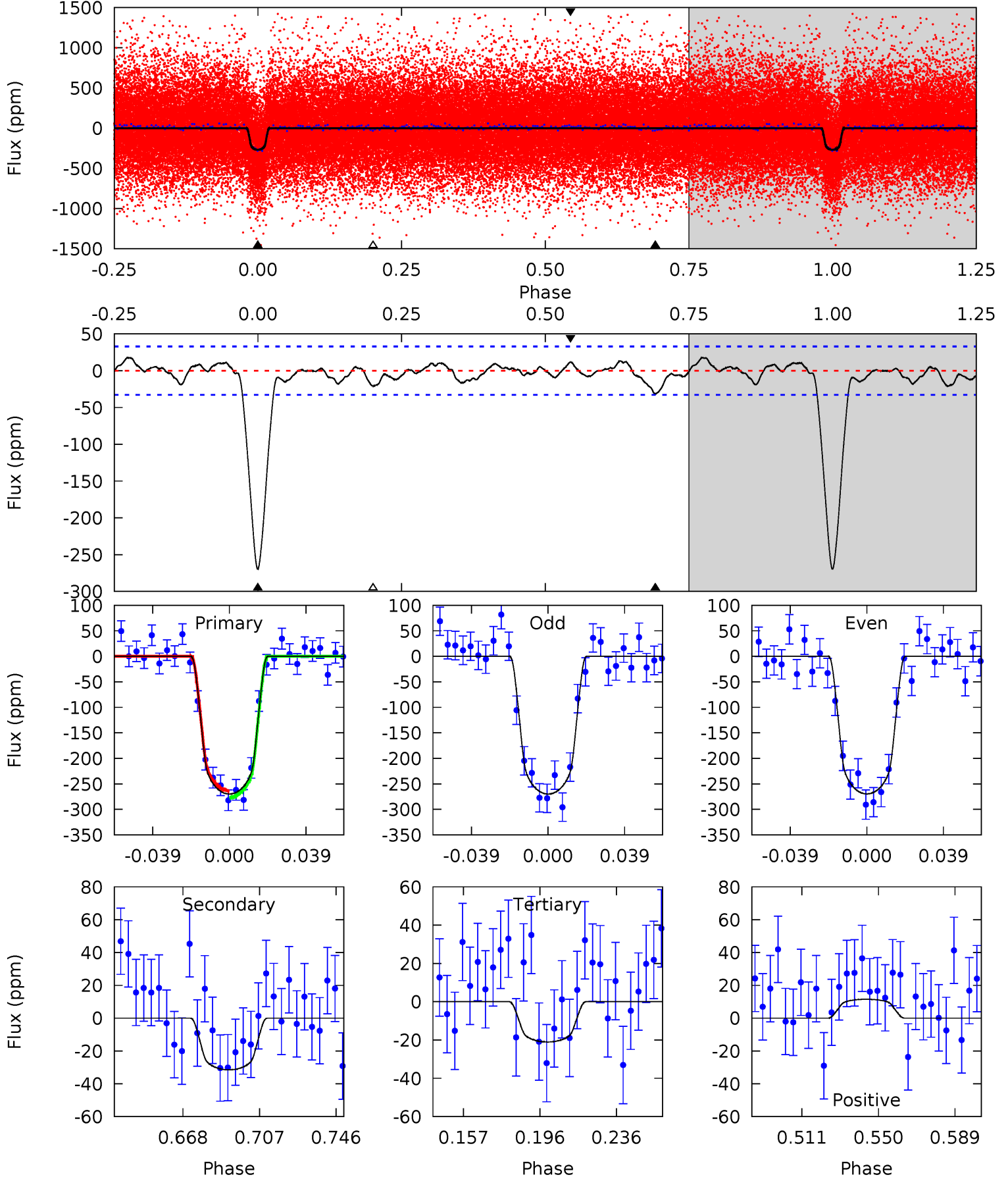
TCE 009466668-01 P= 3.388002 Days $T_0=133.267794$ (BKJD)



DV Model-Shift Uniqueness Test

009466668-01, P = 3.388032 Days, E = 129.874880 Days

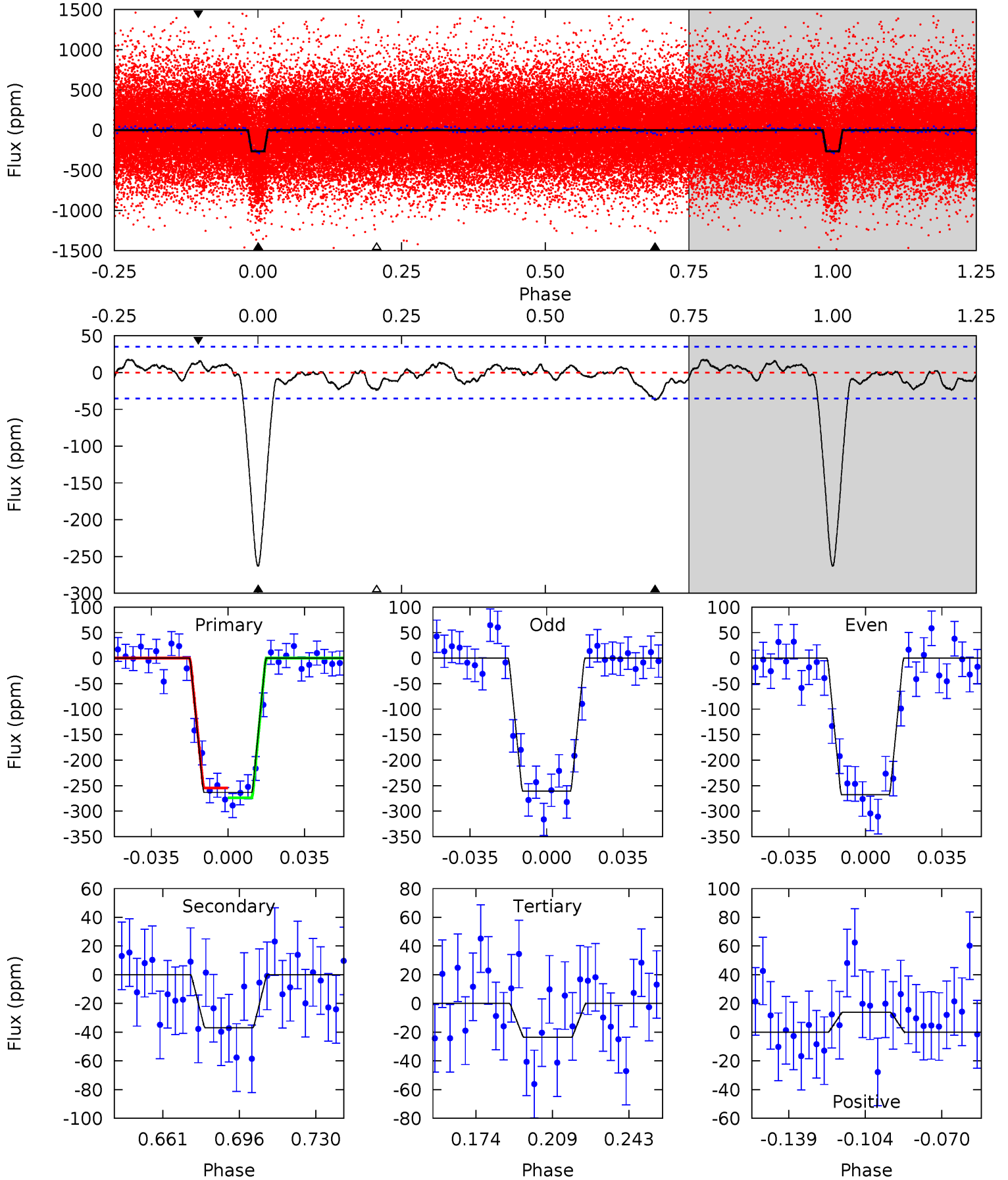
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.0	4.56	3.04	1.67	4.76	2.06	1.17	36.0	37.4	1.52	2.90	0.01	1.03	0.06	0.92



Alt Model-Shift Uniqueness Test

009466668-01, P = 3.388002 Days, E = 129.879792 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.8	5.02	3.19	1.88	4.78	2.11	1.21	32.6	33.9	1.82	3.14	0.46	0.98	0.06	1.30



Stellar Parameters For KIC 009466668

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5553^{+111}_{-1}	$4.221^{+0.188}_{-0.101}$	$0.160^{+0.150}_{-0.150}$	$1.250^{+0.196}_{-0.240}$	$0.949^{+0.080}_{-0.046}$	$0.685^{+0.647}_{-0.229}$
	+2%/-0%	+4%/-2%	+94%/-94%	+16%/-19%	+8%/-5%	+95%/-33%
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 009466668-01 / KOI 0939.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 7	$2.49^{+0.57}_{-0.52}$	1819^{+86}_{-110}	3465^{+286}_{-239}	$5.190^{+3.577}_{-1.890}$
Alt.	-37 ± 7	$2.17^{+0.58}_{-0.45}$	1816^{+92}_{-123}	3714^{+346}_{-279}	$8.104^{+5.491}_{-3.268}$

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

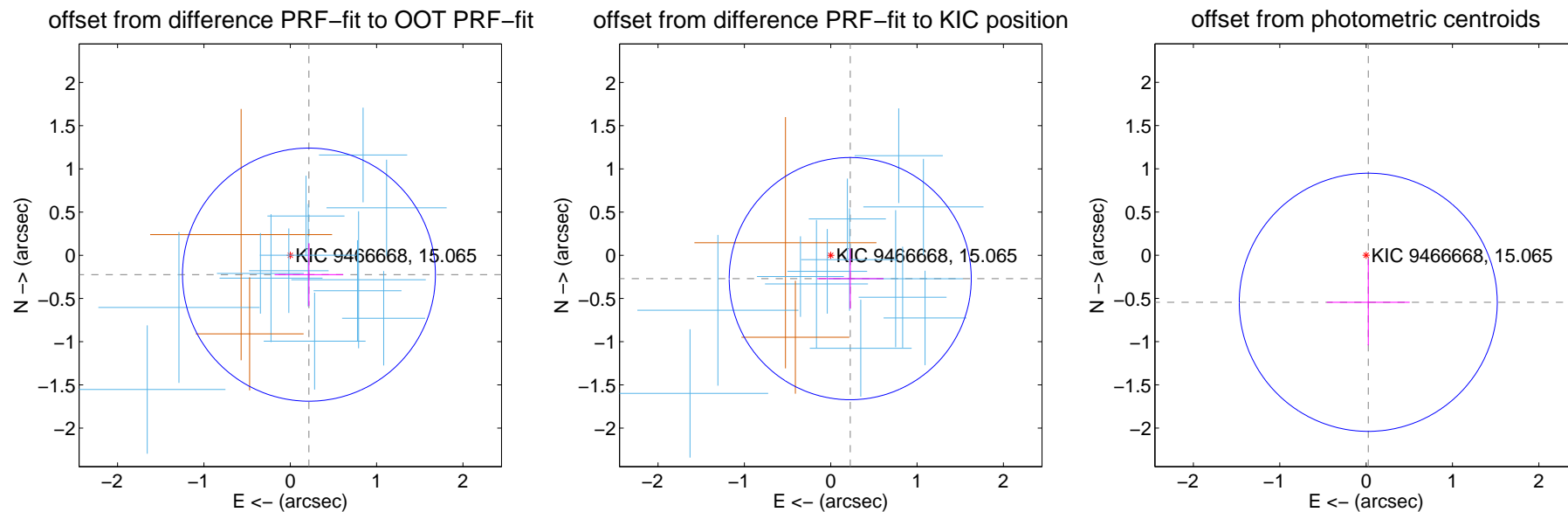
DV Centroid Data

Supplemental centroid analysis for 009466668-01. Kepler magnitude: 15.06. Transit SNR 28.26

There are 13 quarters with good PRF difference image offsets

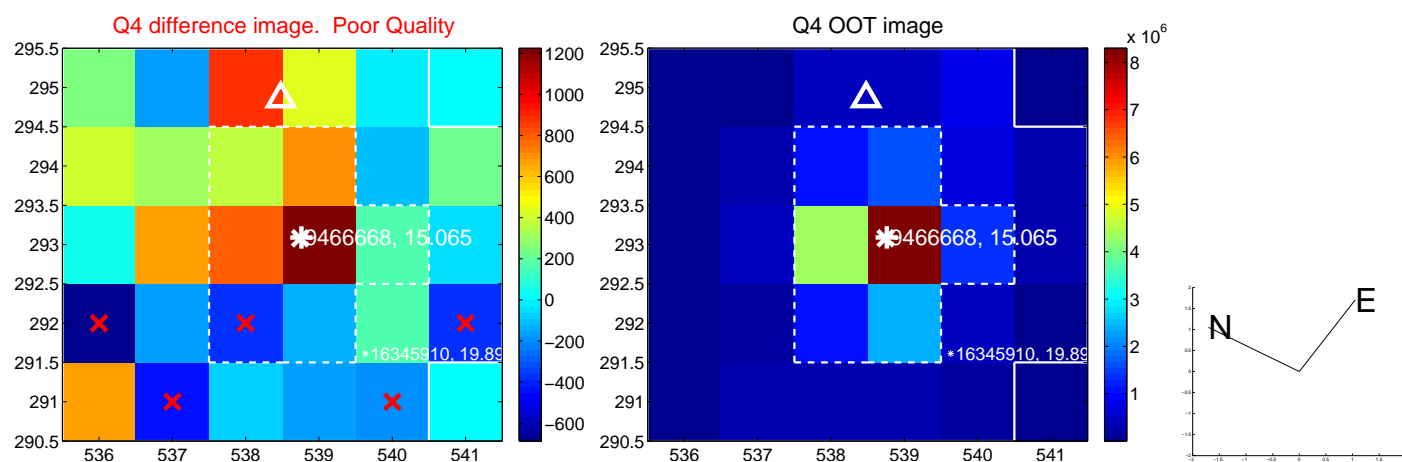
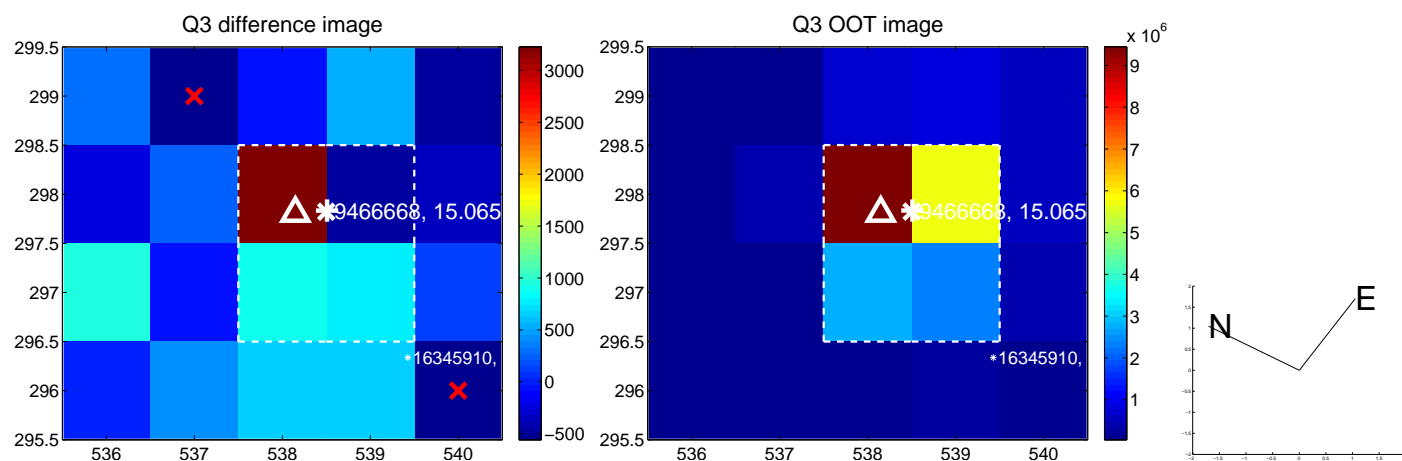
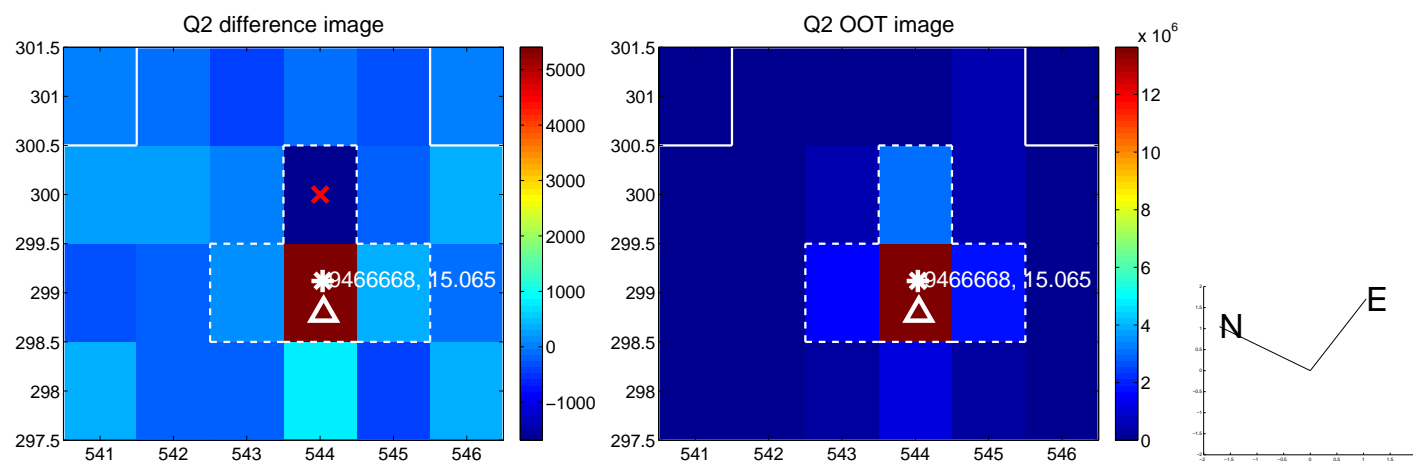
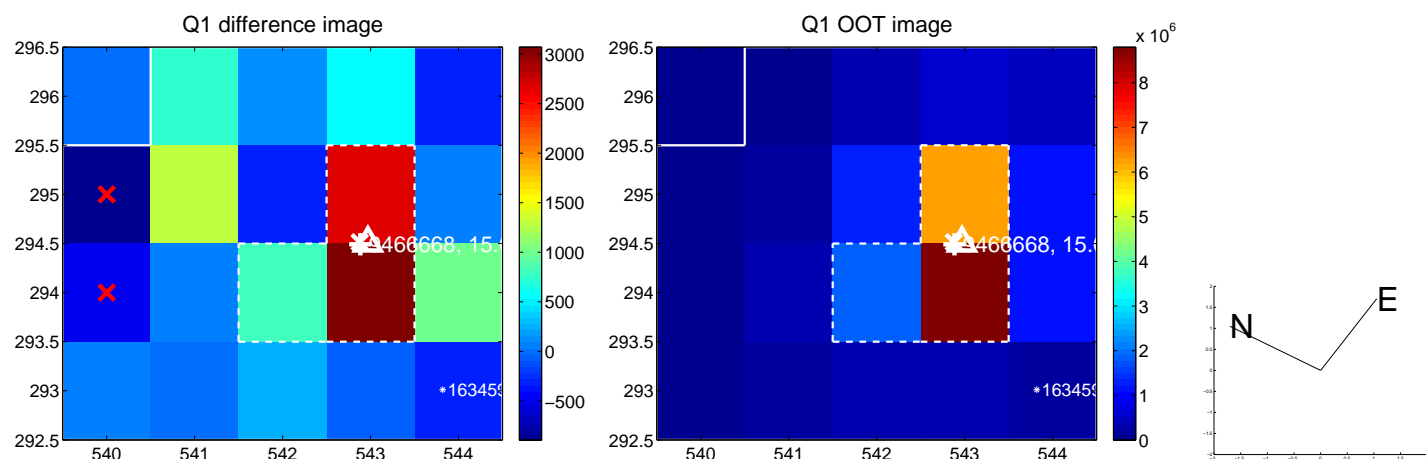
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.312 ± 0.488	0.64	-0.216 ± 0.397	-0.224 ± 0.363
PRF-fit source offset from KIC position	0.352 ± 0.467	0.75	-0.226 ± 0.384	-0.270 ± 0.349
photometric centroid source offset	0.55 ± 0.50	1.10	-0.02 ± 0.48	-0.54 ± 0.50

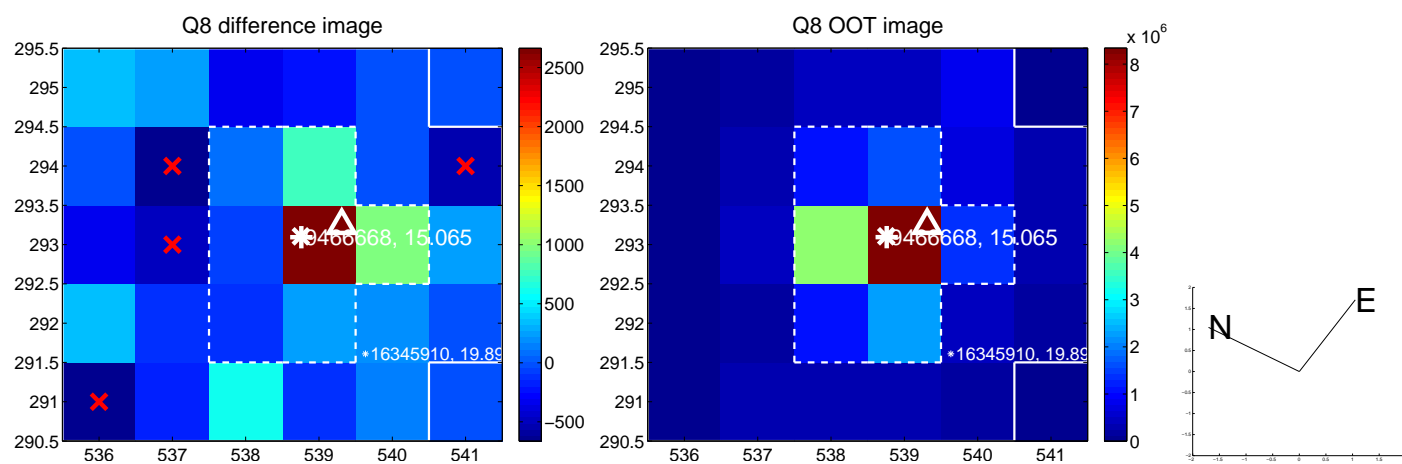
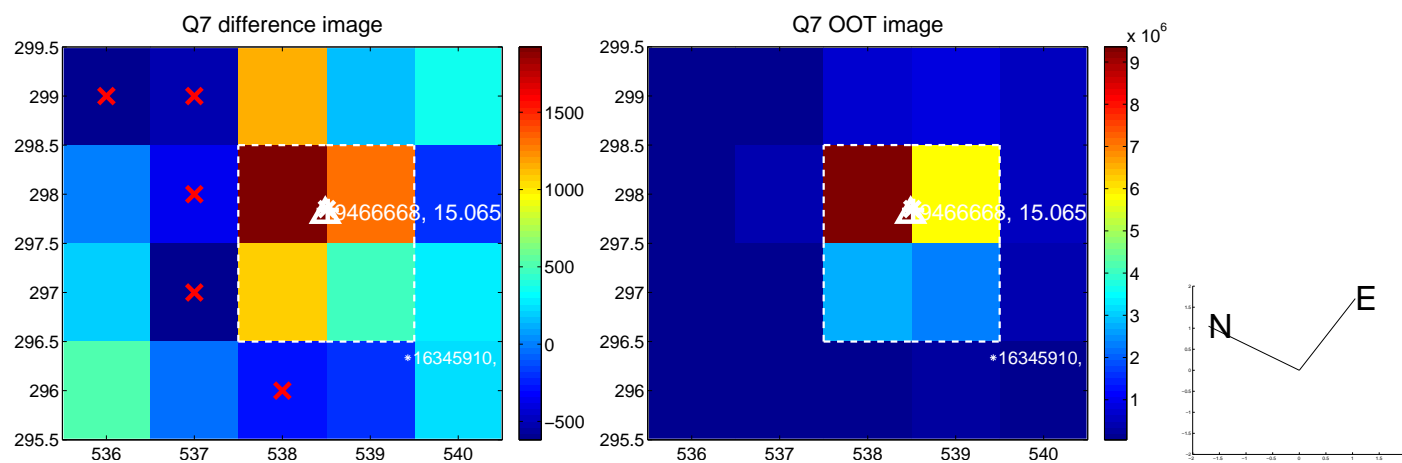
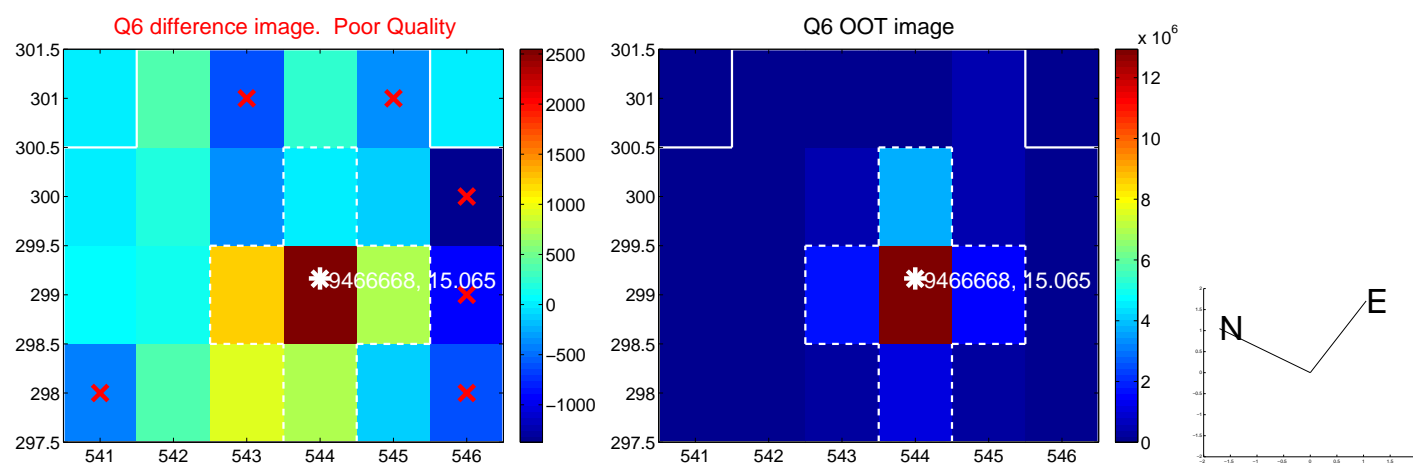
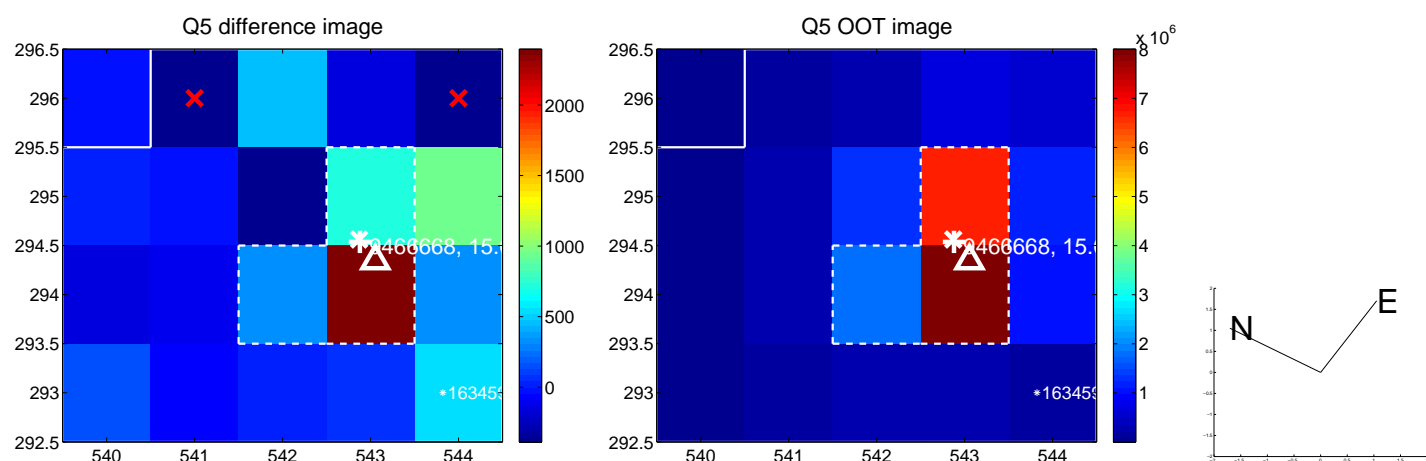


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

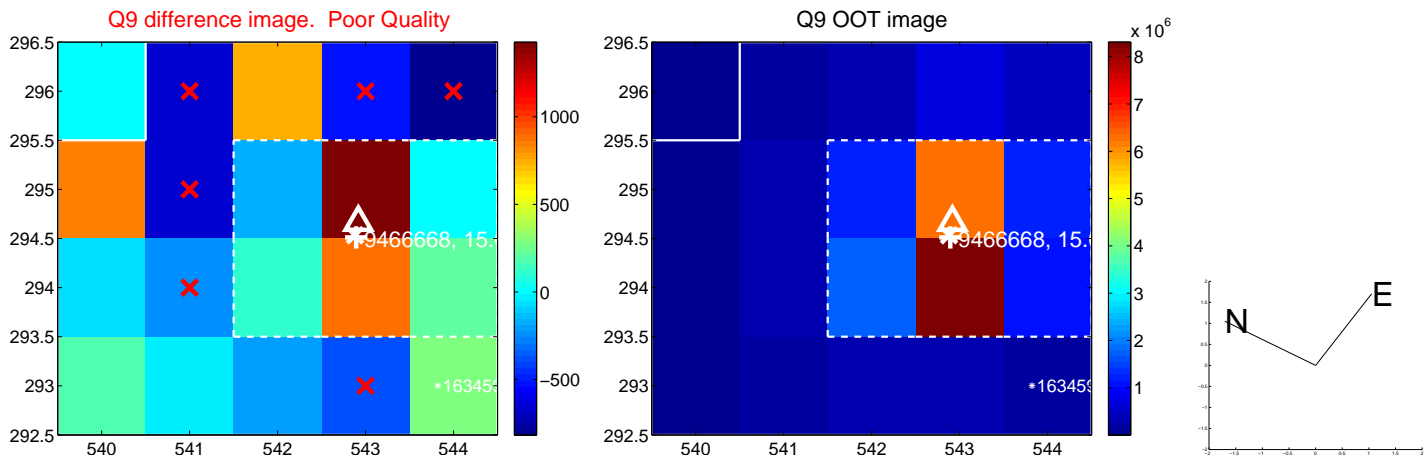
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



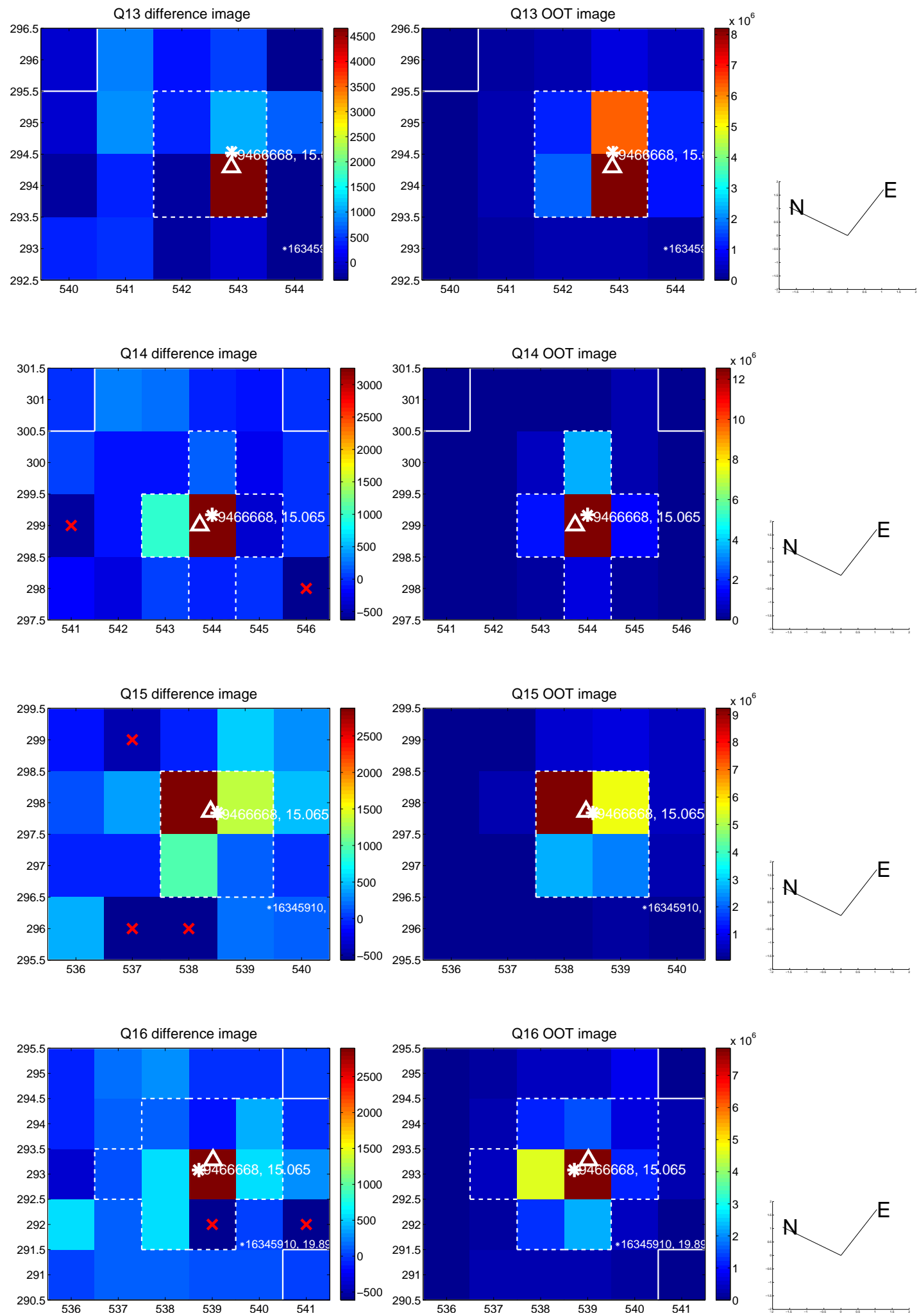
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



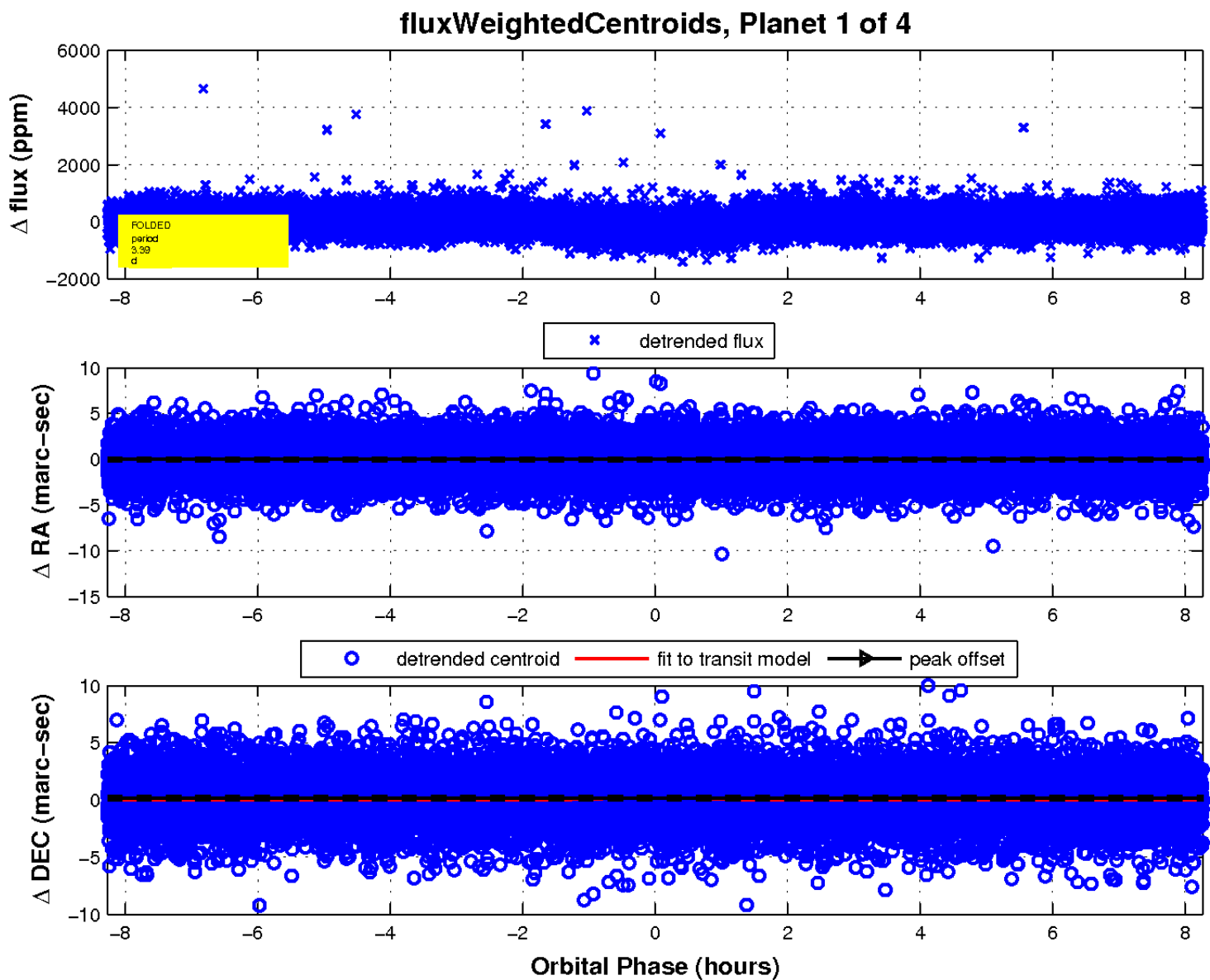
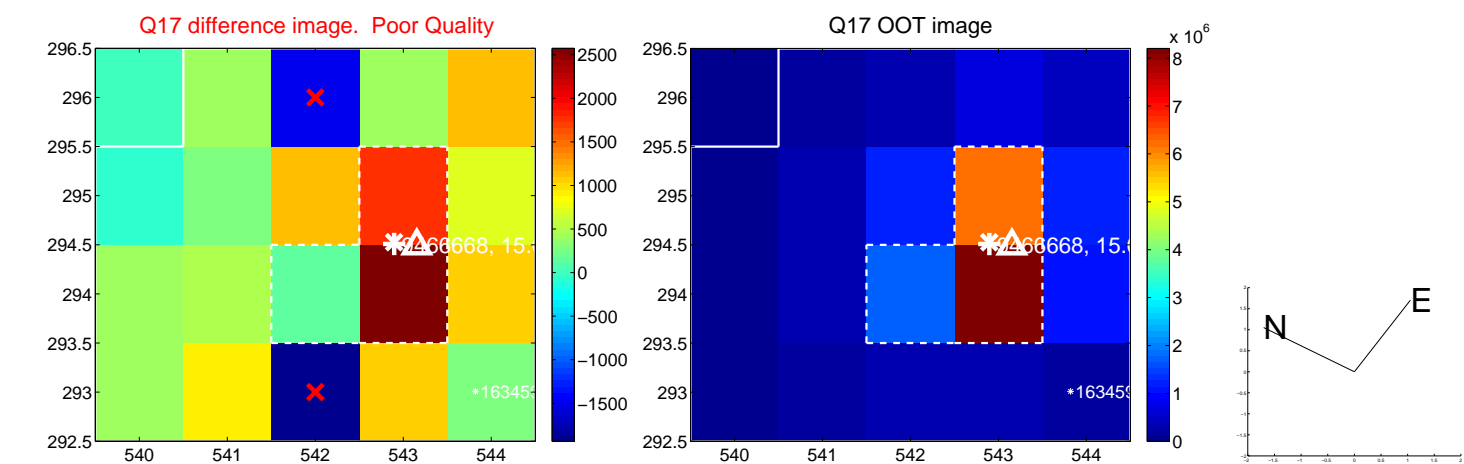
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

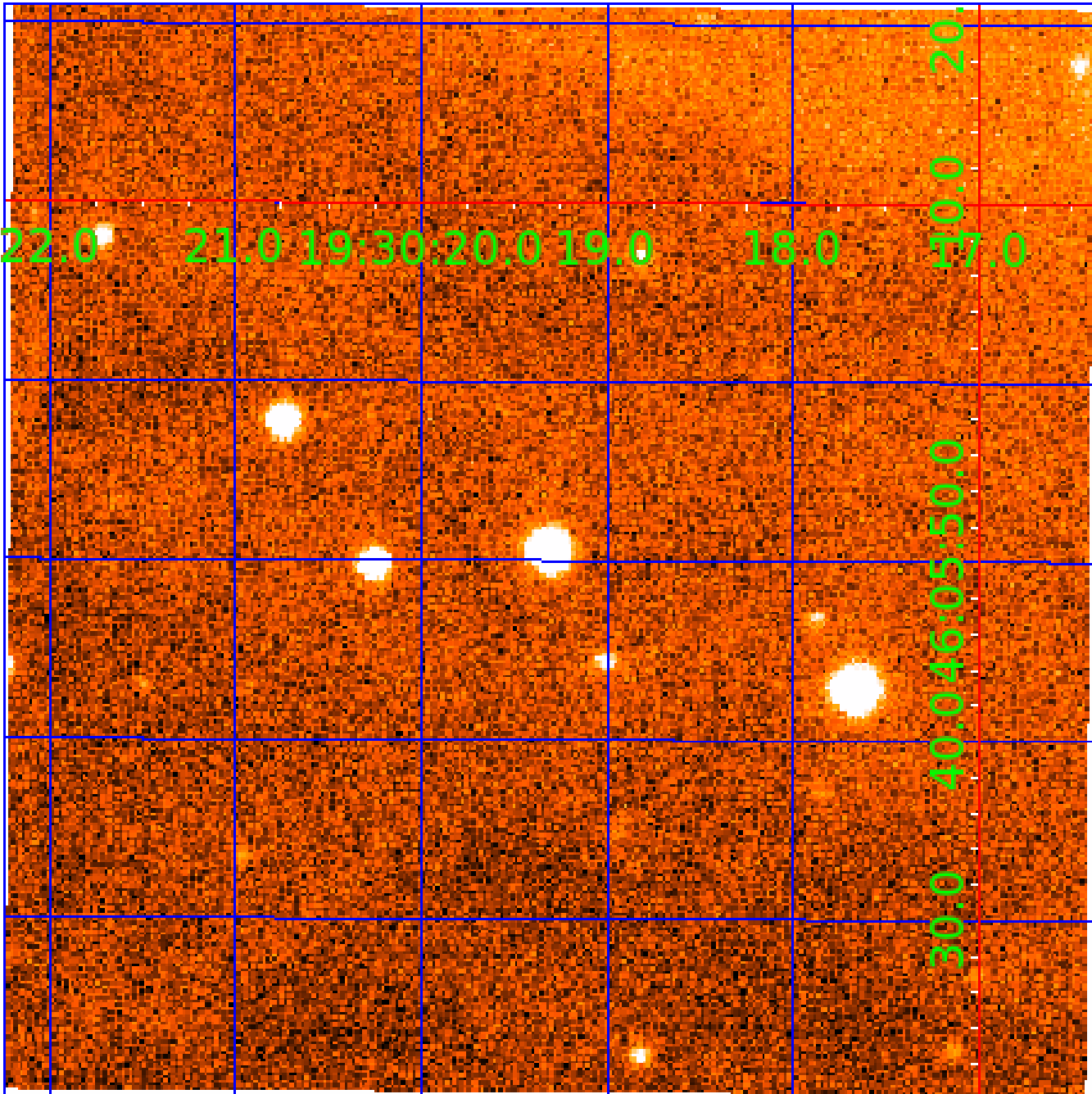


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009466668

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})
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009466668-02	OBS	0939.02	5.839067	132.095509	259.5	3.279	19.0	20.4	1.25	5553	2.36	342.36
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009466668-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-04	OBS	PC	1.00	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.

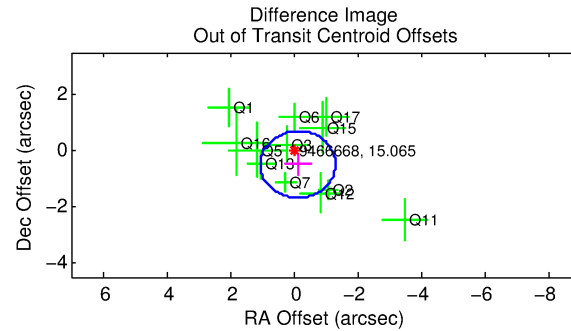
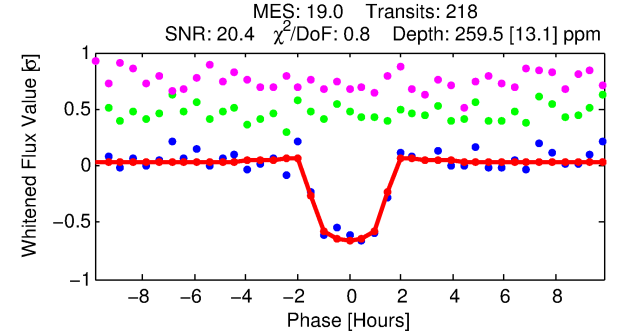
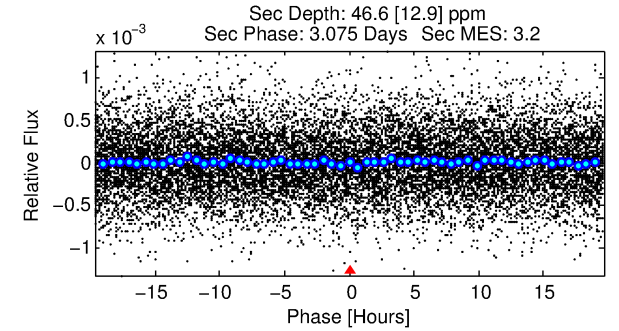
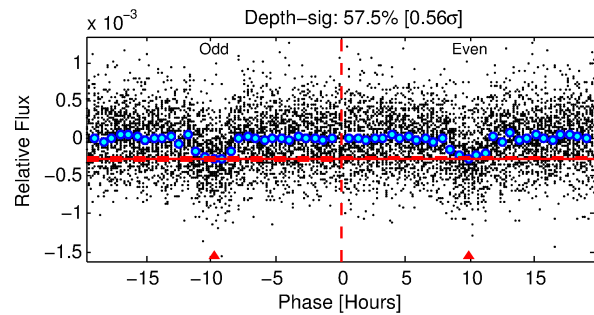
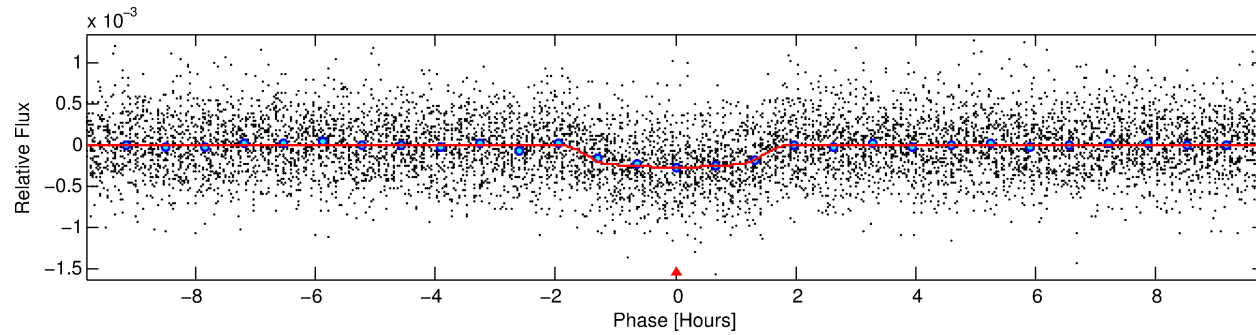
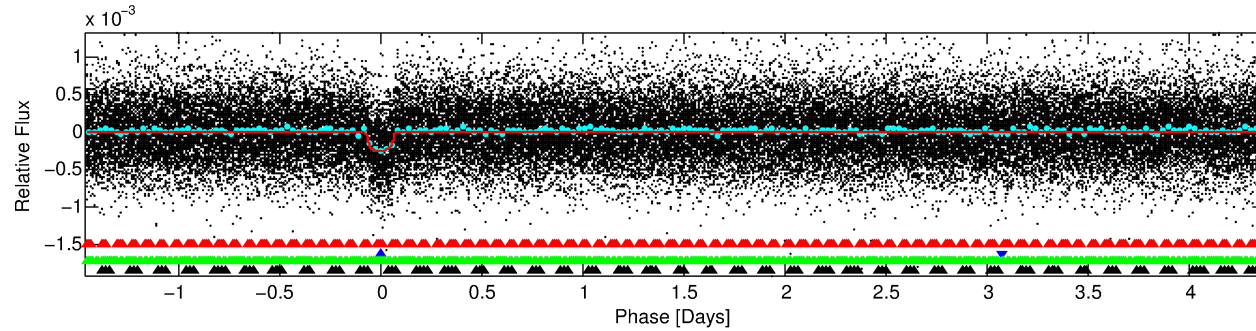
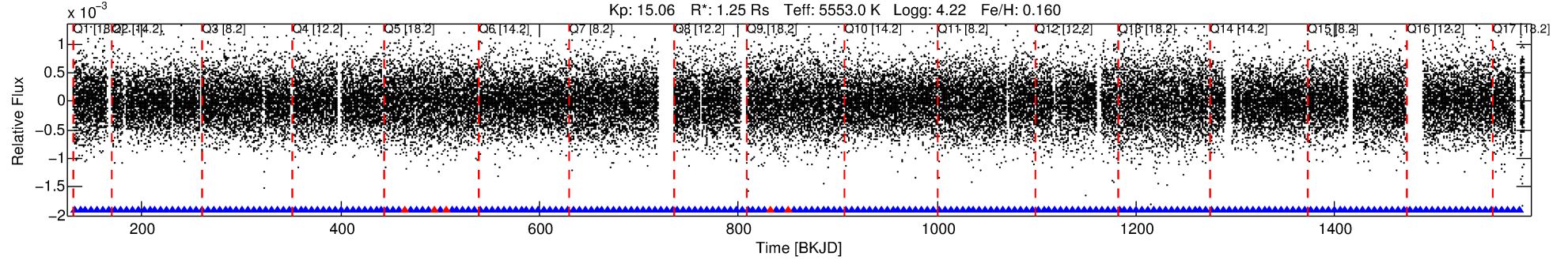
Ephemeris Match Information For 009466668-02

No Significant Match Found

DV One-Page Summary

KIC: 9466668 Candidate: 2 of 4 Period: 5.839 d
KOI: K00939.02 Name: Kepler-256d Corr: 0.979

Kp: 15.06 R*: 1.25 Rs Teff: 5553.0 K Logg: 4.22 Fe/H: 0.160



DV Fit Results:

Period = 5.83907 [0.00002] d
Epoch = 132.0955 [0.0027] BKJD
Rp/R* = 0.0173 [0.0051]
a/R* = 7.08 [8.94]
b = 0.88 [0.35]
Seff = 342.36 [111.50]
Teff = 1097 [89] K
Rp = 2.36 [0.83] Re
a = 0.0624 [0.0120] AU
Ag = 17.88 [12.97] [1.30σ]
Teffp = 3487 [574] K [4.11σ]

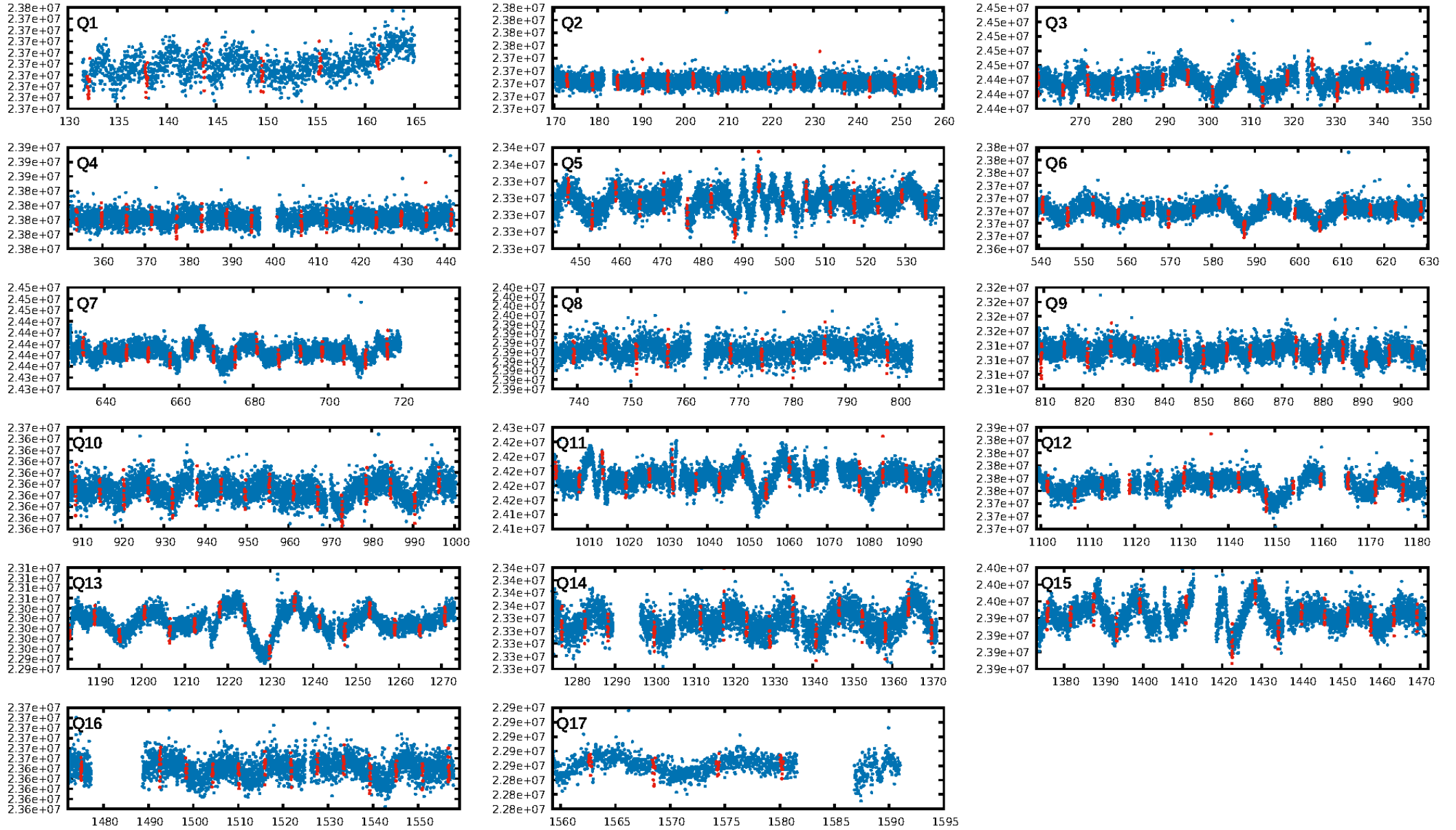
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.73σ]
LongPeriod-sig: 100.0% [23.40σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.56e-75
RollingBand-fgt: 0.98 [203/208]
GhostDiagnostic-chr: -12.43
Centroid-sig: 2.1%
Centroid-so: 1.088 arcsec [1.67σ]
OotOffset-rm: 0.510 arcsec [1.29σ]
KicOffset-rm: 0.543 arcsec [1.32σ]
OotOffset-st: 2/4/2/4 [12]
KicOffset-st: 2/4/2/4 [12]
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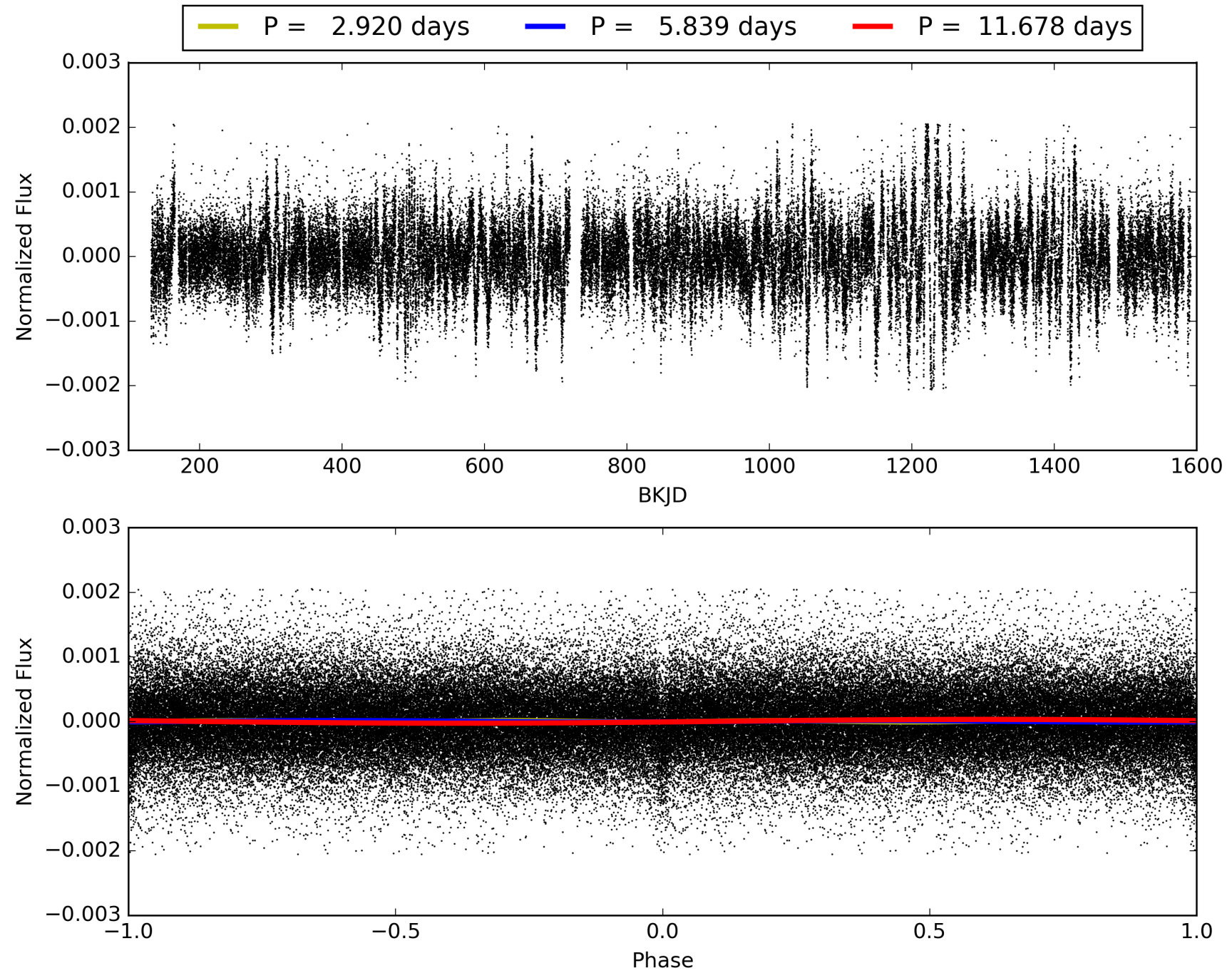
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:57:52 Z

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

TCE 00946668-02, PDC Light Curves

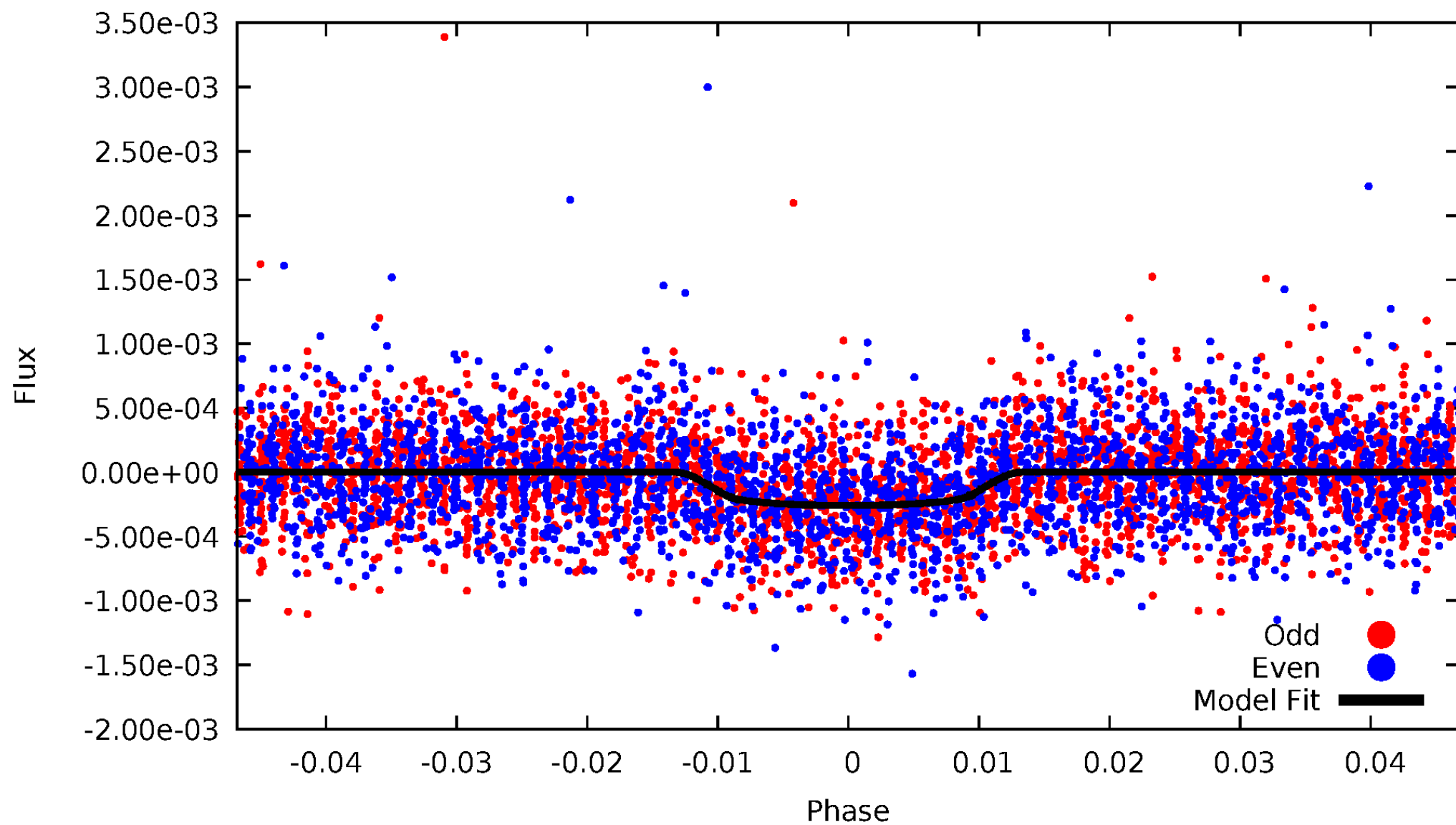


TCE 009466668-02



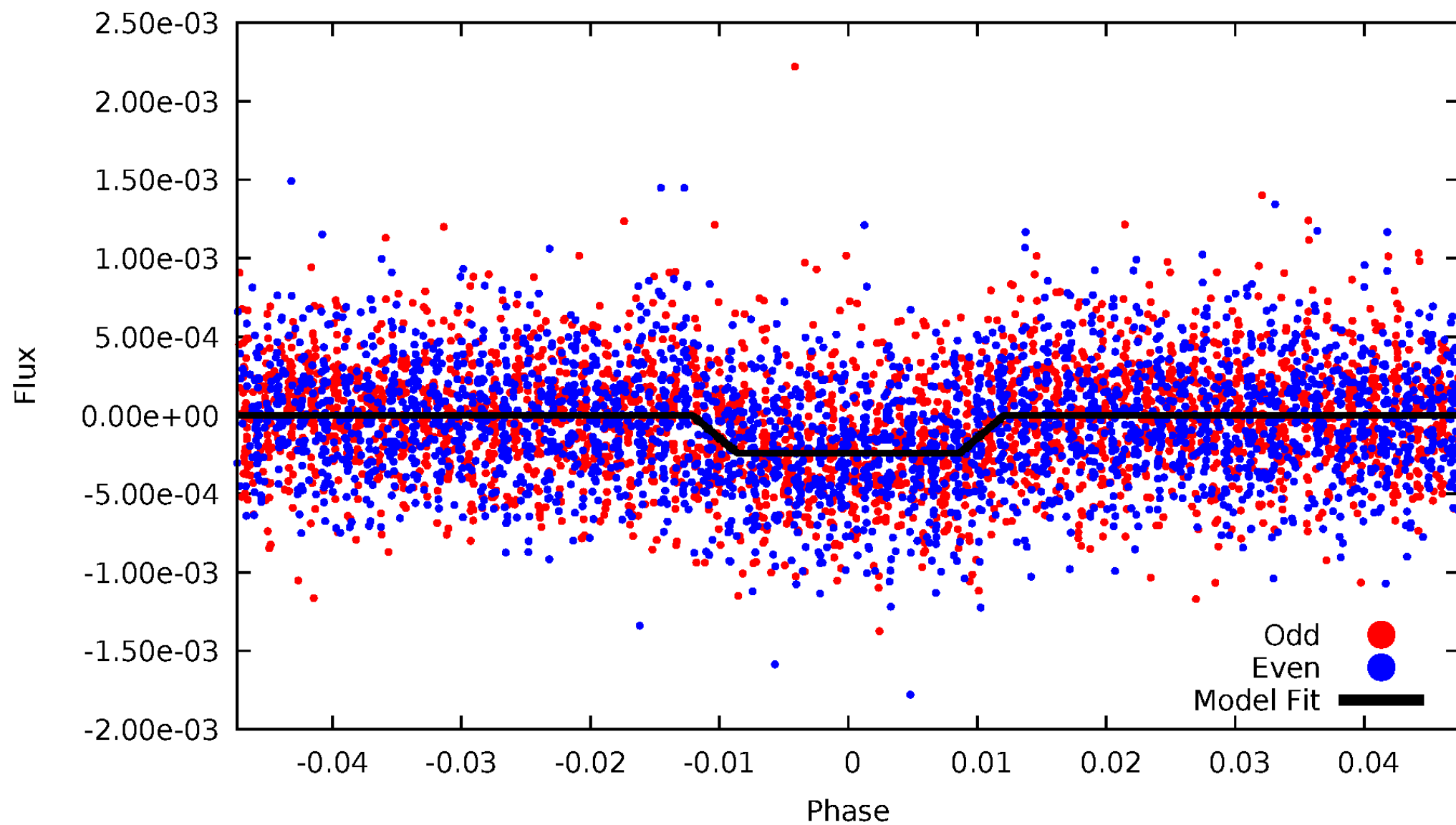
DV Odd/Even

TCE 009466668-02



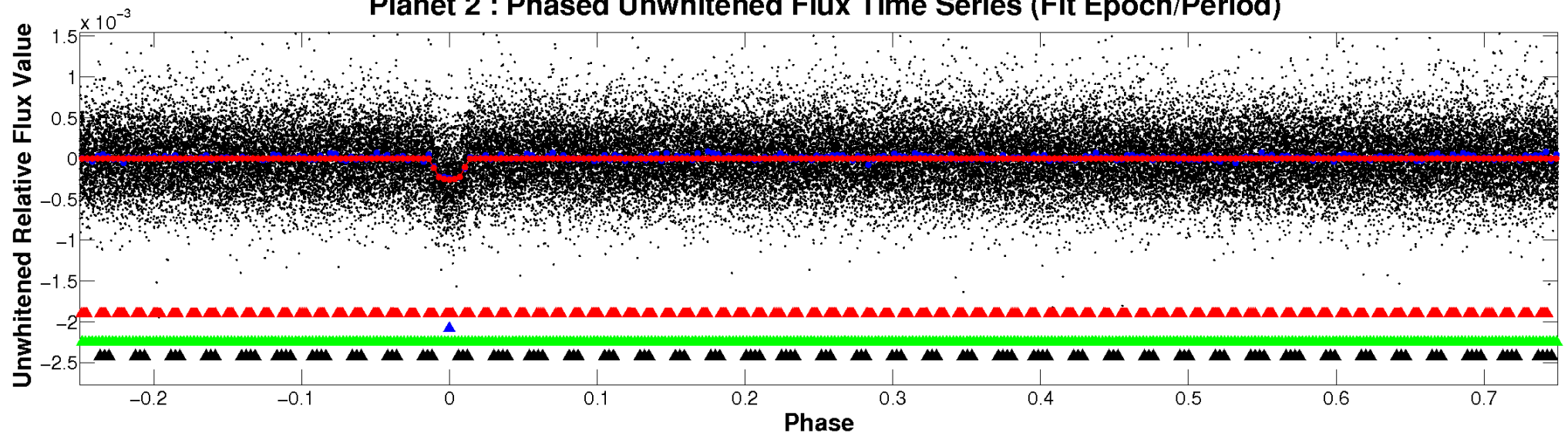
ALT Odd/Even

TCE 009466668-02

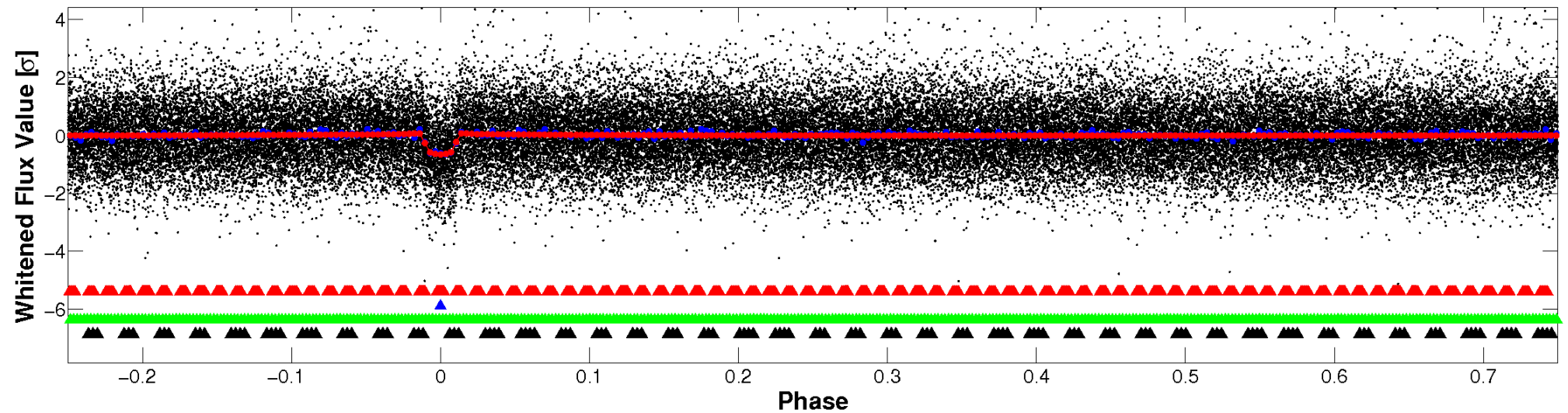


Non-Whitened Vs. Whitened Light Curve

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

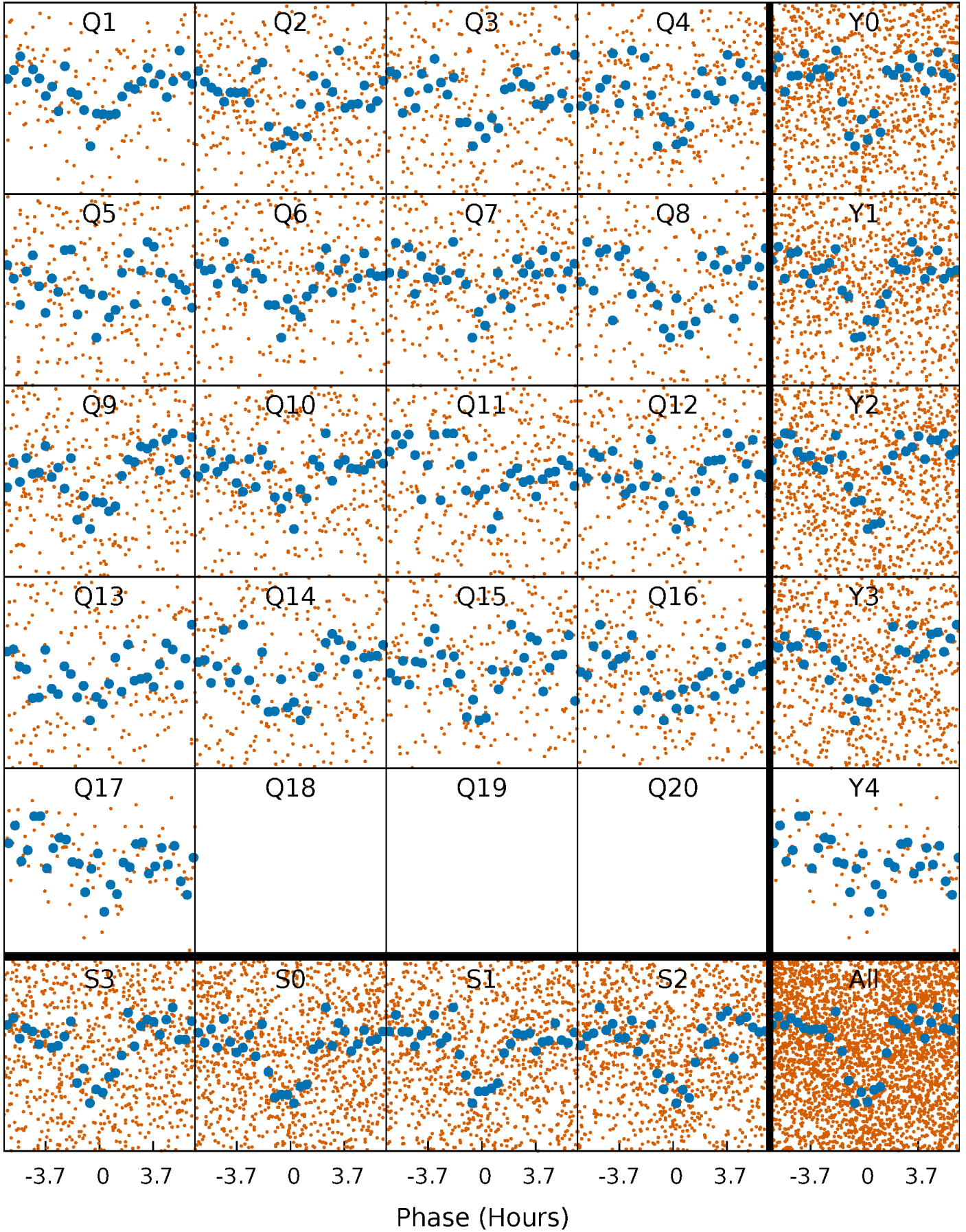


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



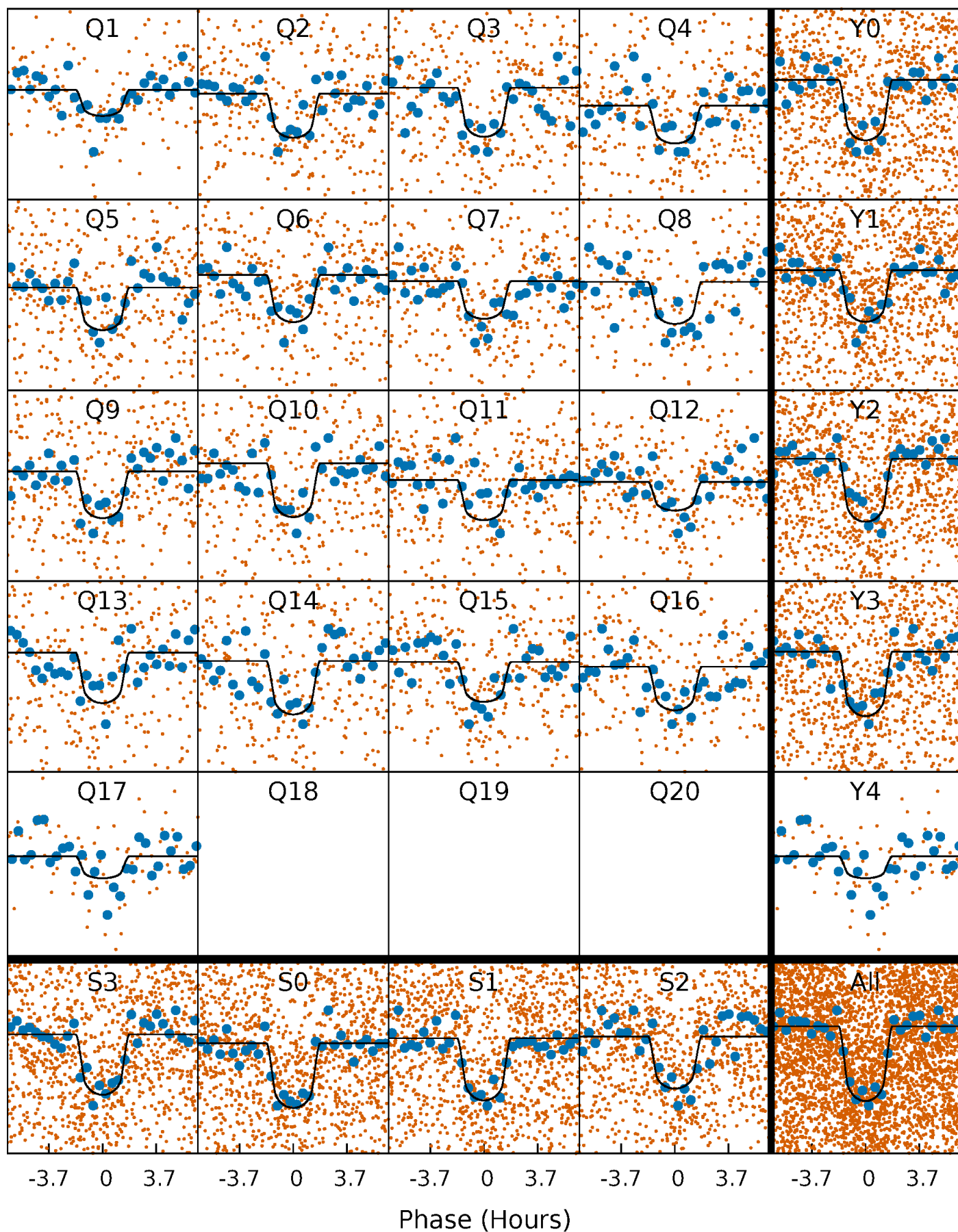
PDC Quarter-Phased Transit Curves

TCE 009466668-02 P= 5.839067 Days $T_0=132.095509$ (BKJD)



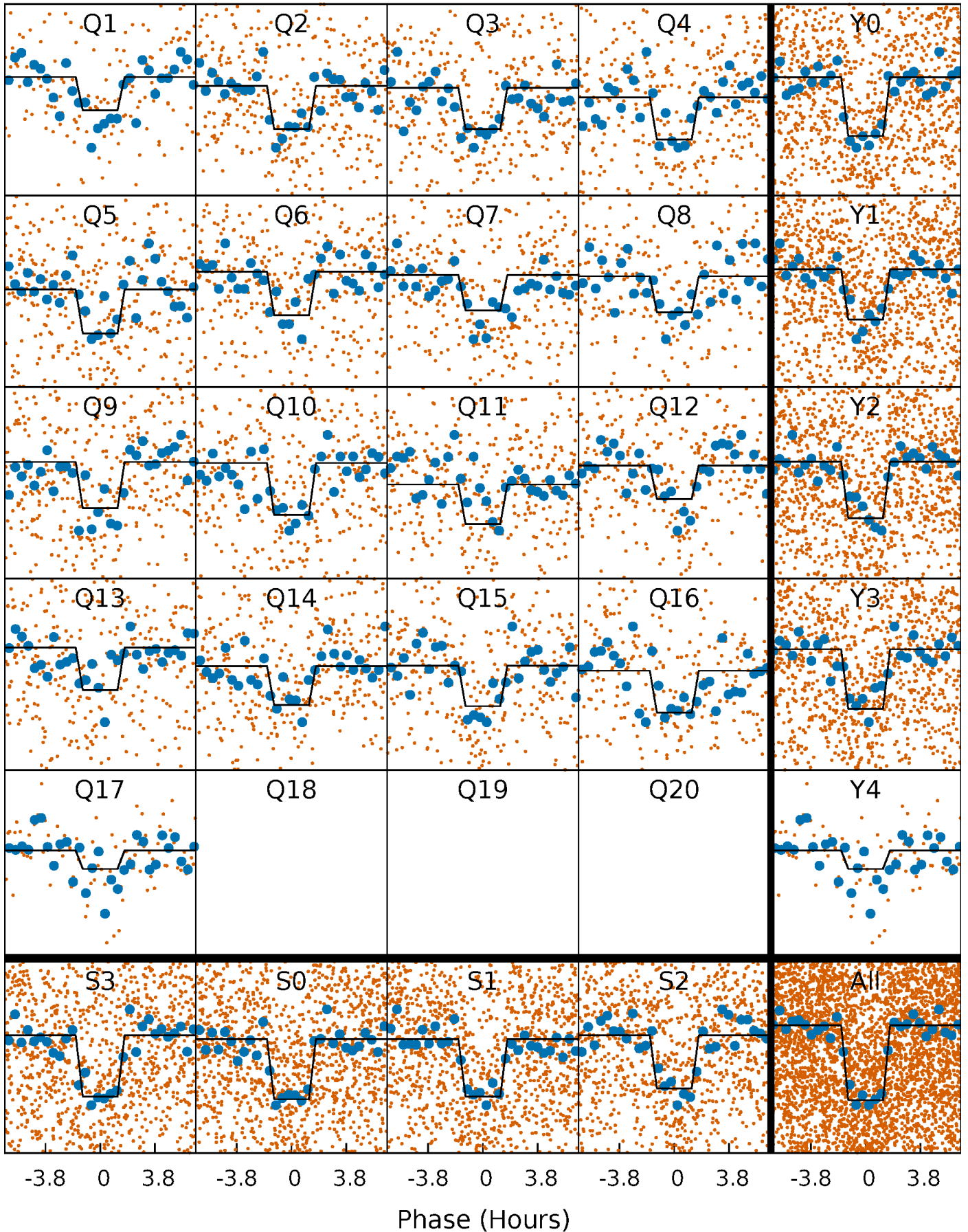
DV Quarter-Phased Transit Curves

TCE 009466668-02 P= 5.839067 Days $T_0=132.095509$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

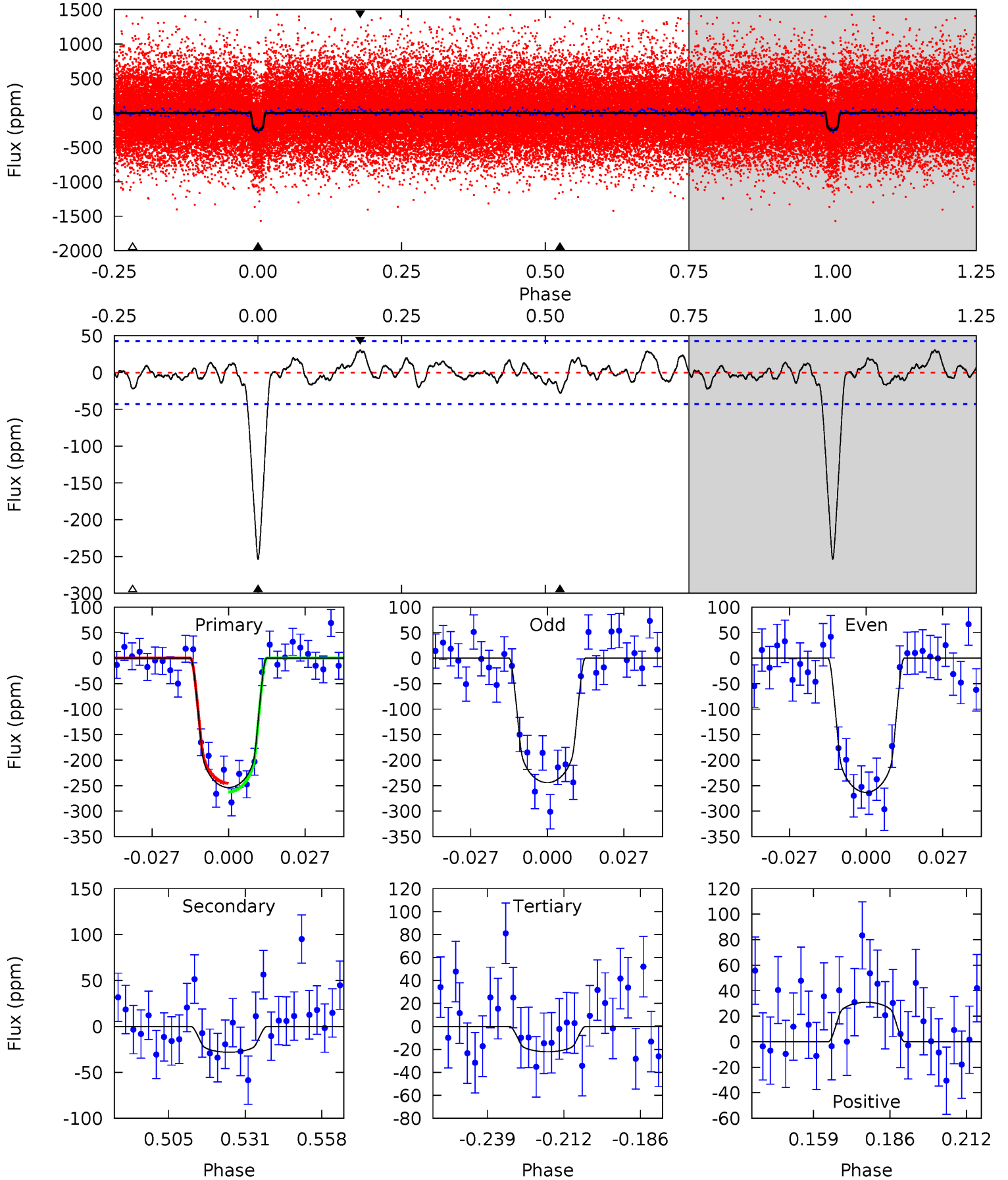
TCE 009466668-02 P= 5.839051 Days $T_0=132.097844$ (BKJD)



DV Model-Shift Uniqueness Test

009466668-02, P = 5.839067 Days, E = 126.256442 Days

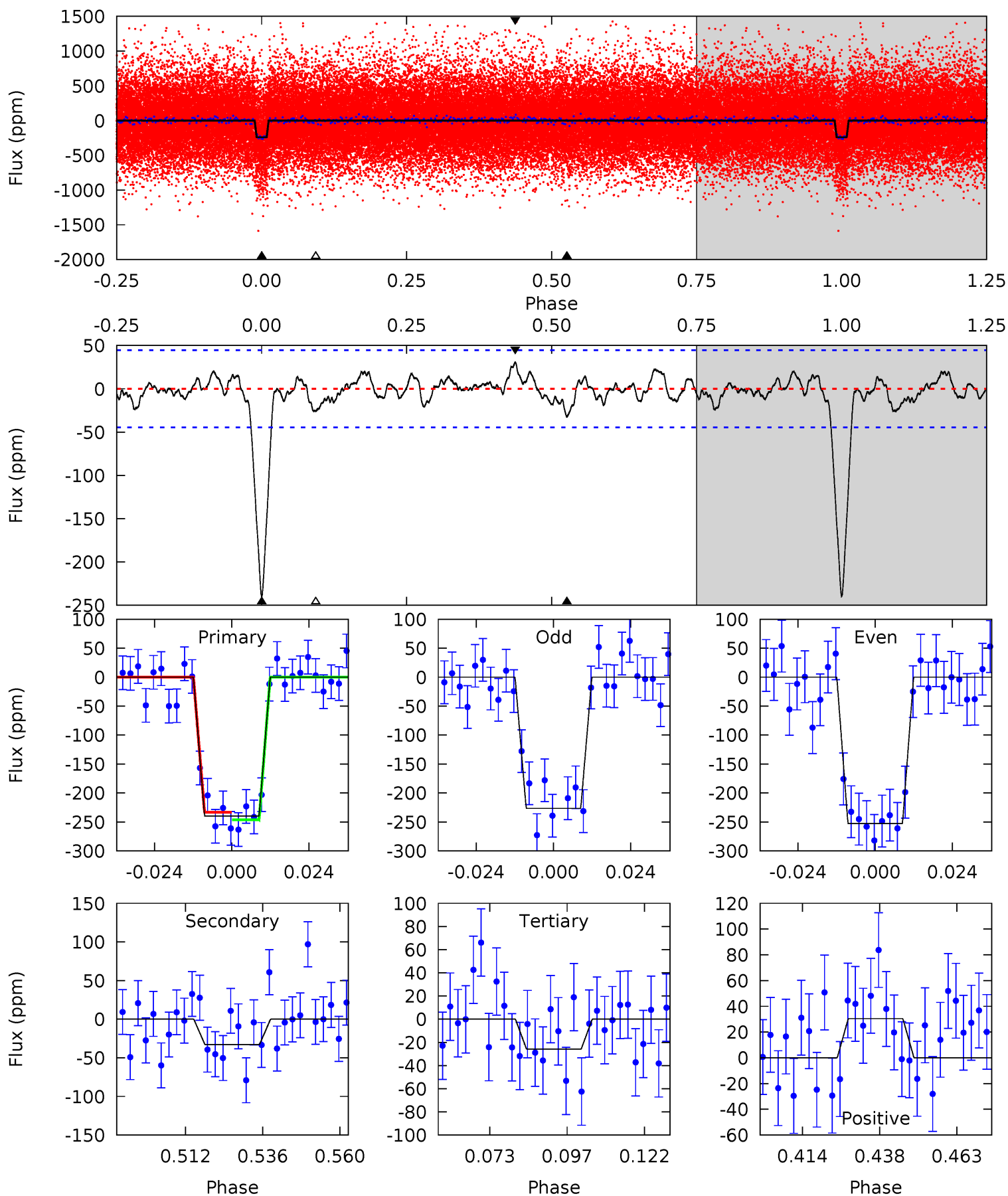
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	3.18	2.49	3.50	4.84	2.22	1.16	26.2	25.2	0.68	-0.32	1.08	1.01	0.11	0.96



Alt Model-Shift Uniqueness Test

009466668-02, P = 5.839051 Days, E = 126.258793 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	3.58	2.83	3.32	4.85	2.25	1.14	23.3	22.8	0.75	0.26	1.43	1.01	0.11	0.69



Stellar Parameters For KIC 009466668

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5553^{+111}_{-1}	$4.221^{+0.188}_{-0.101}$	$0.160^{+0.150}_{-0.150}$	$1.250^{+0.196}_{-0.240}$	$0.949^{+0.080}_{-0.046}$	$0.685^{+0.647}_{-0.229}$
	+2%/-0%	+4%/-2%	+94%/-94%	+16%/-19%	+8%/-5%	+95%/-33%
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 009466668-02 / KOI 0939.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 9	$2.33^{+0.80}_{-0.76}$	1515^{+80}_{-99}	3471^{+523}_{-337}	11^{+14}_{-6}
Alt.	-33 ± 9	$2.06^{+0.77}_{-0.70}$	1515^{+79}_{-94}	3715^{+646}_{-396}	16^{+23}_{-8}

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

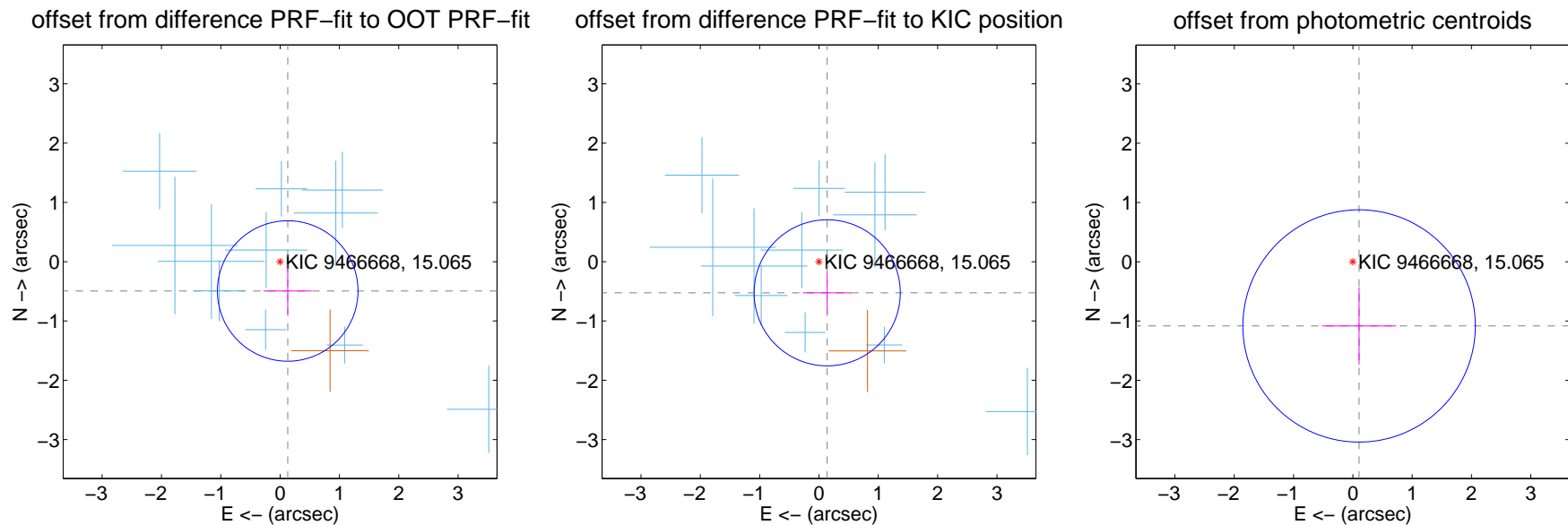
DV Centroid Data

Supplemental centroid analysis for 009466668-02. Kepler magnitude: 15.06. Transit SNR 20.45

There are 11 quarters with good PRF difference image offsets

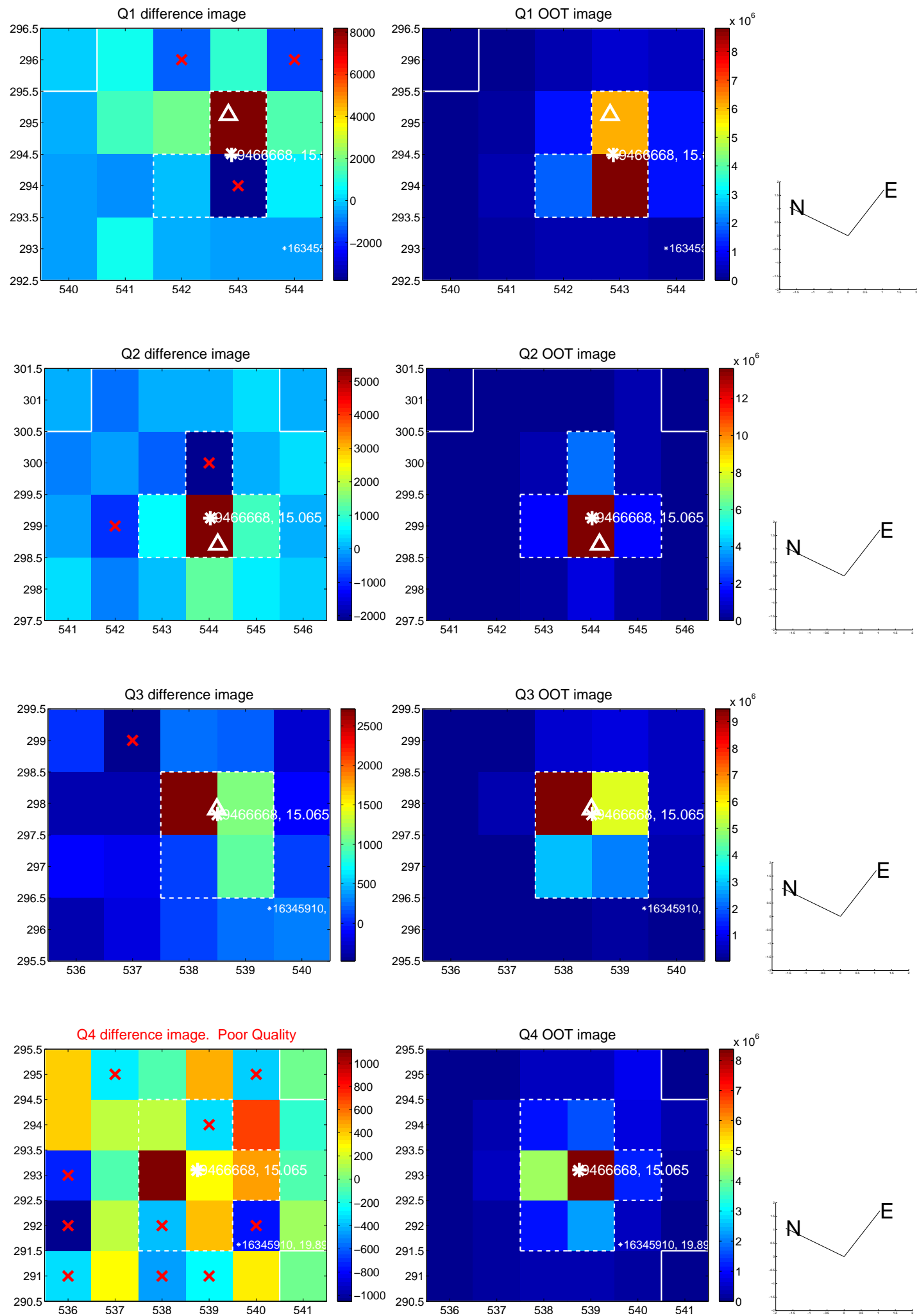
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.510 ± 0.395	1.29	-0.128 ± 0.406	-0.494 ± 0.394
PRF-fit source offset from KIC position	0.543 ± 0.411	1.32	-0.138 ± 0.411	-0.525 ± 0.354
photometric centroid source offset	1.09 ± 0.65	1.67	-0.11 ± 0.63	-1.08 ± 0.65

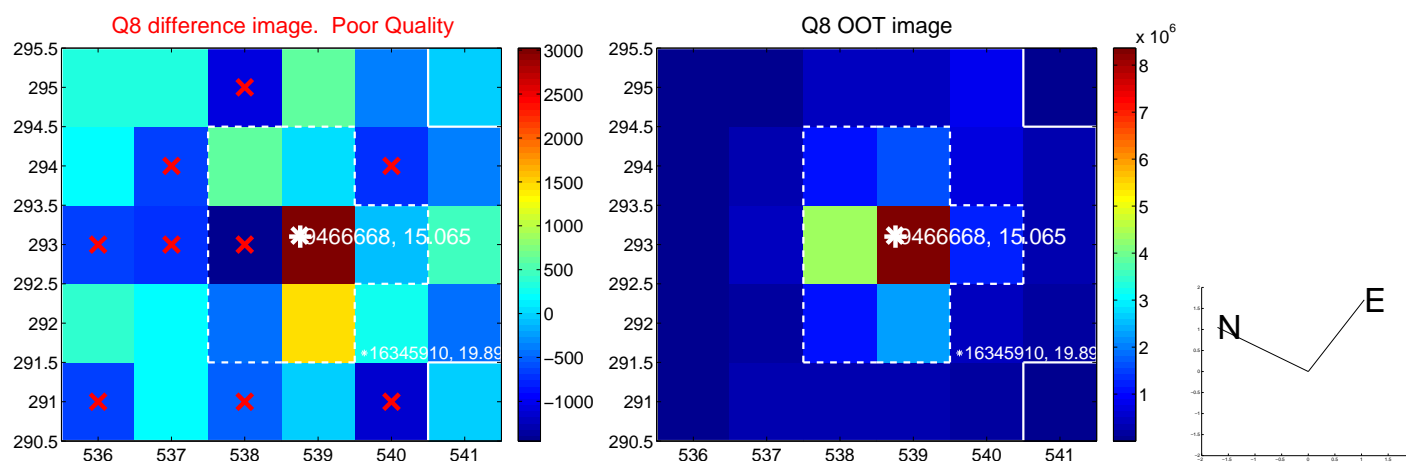
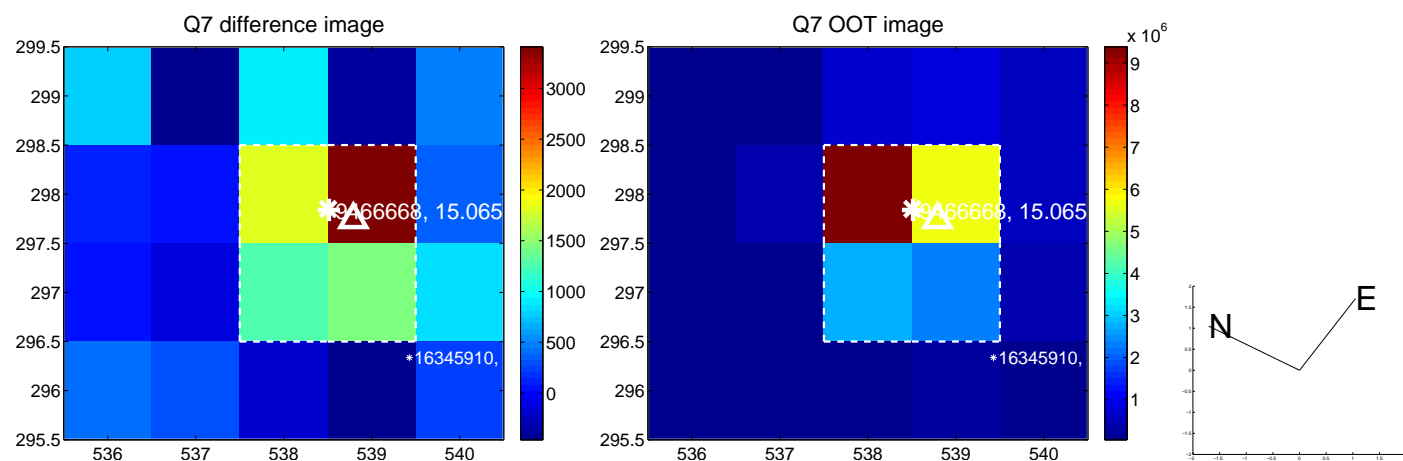
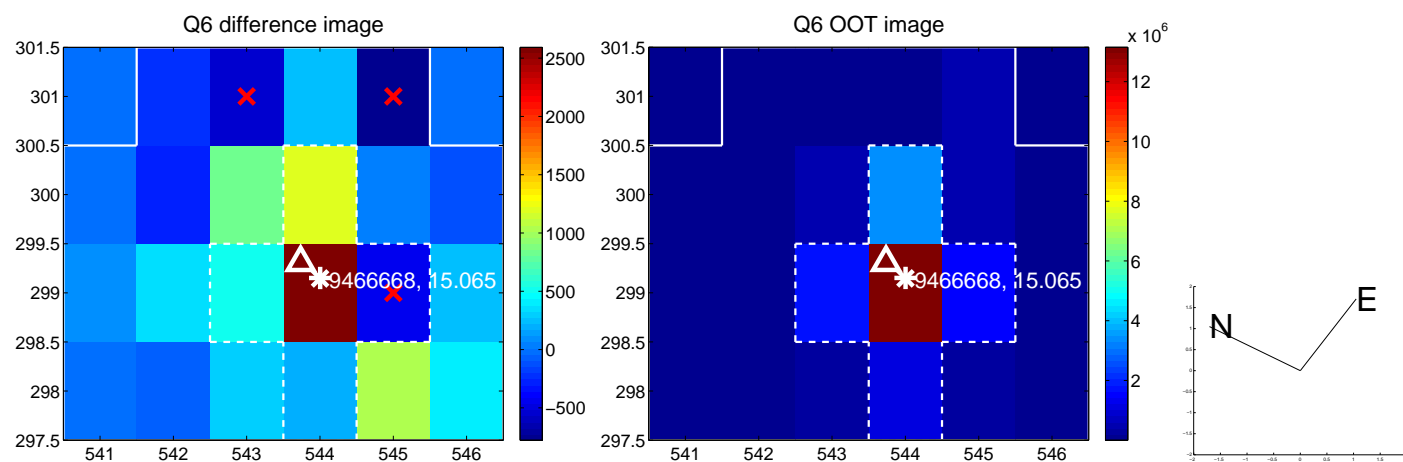
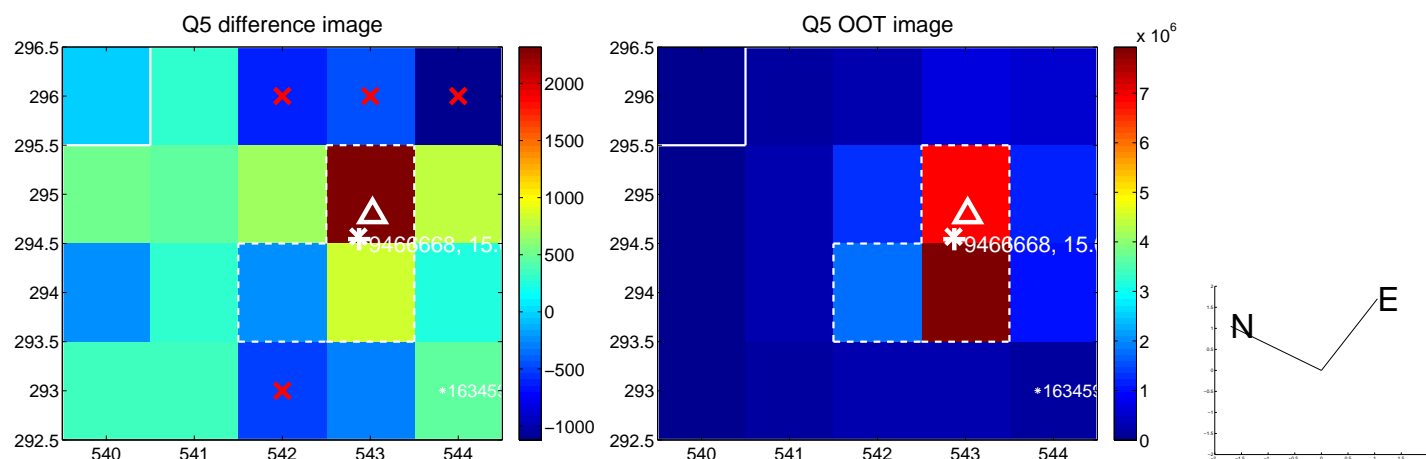


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

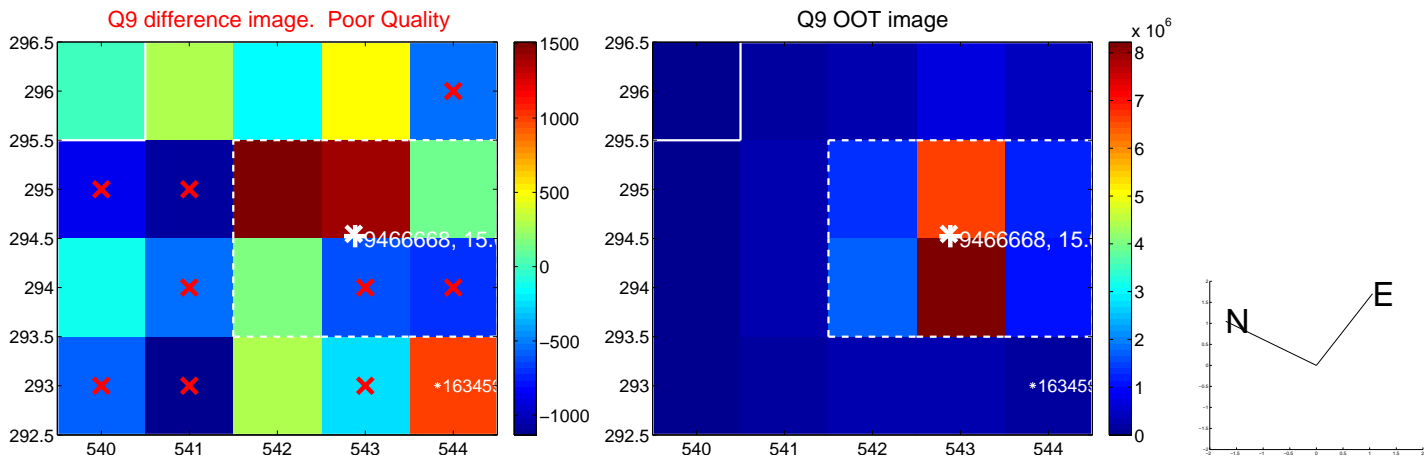
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



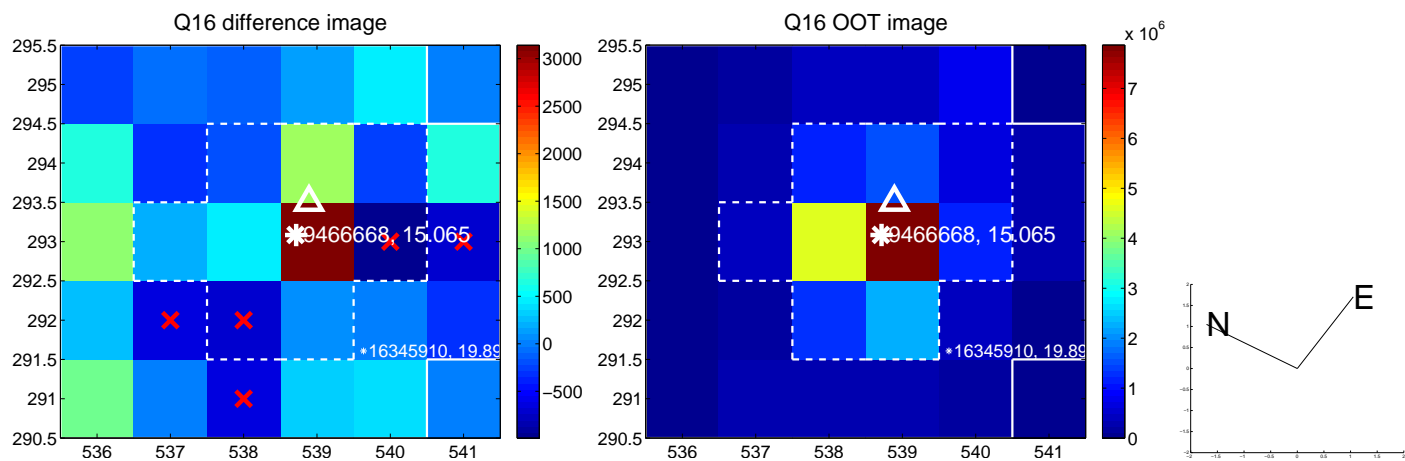
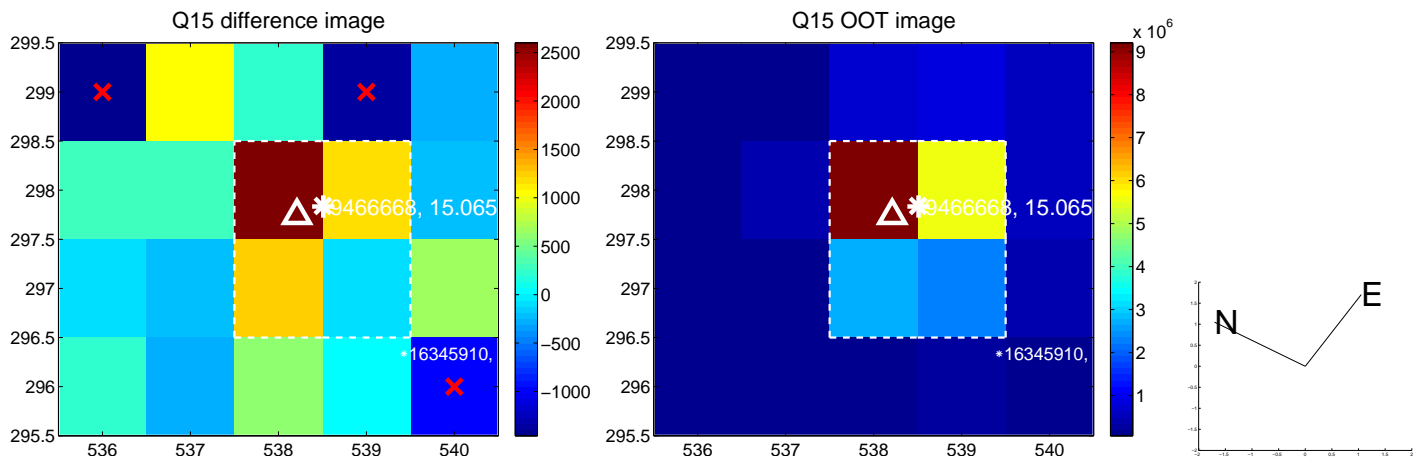
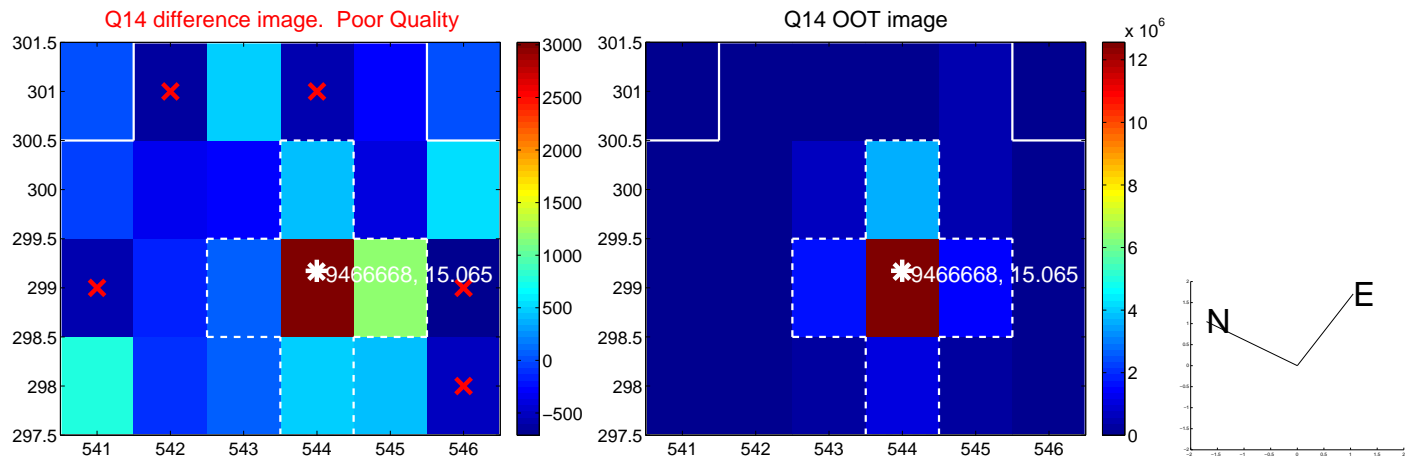
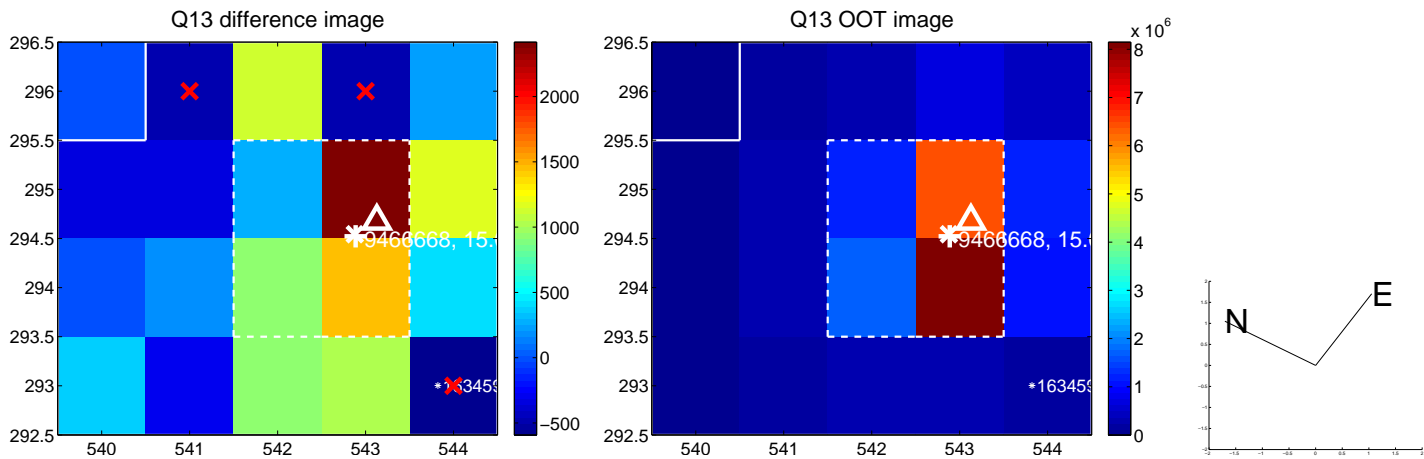
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



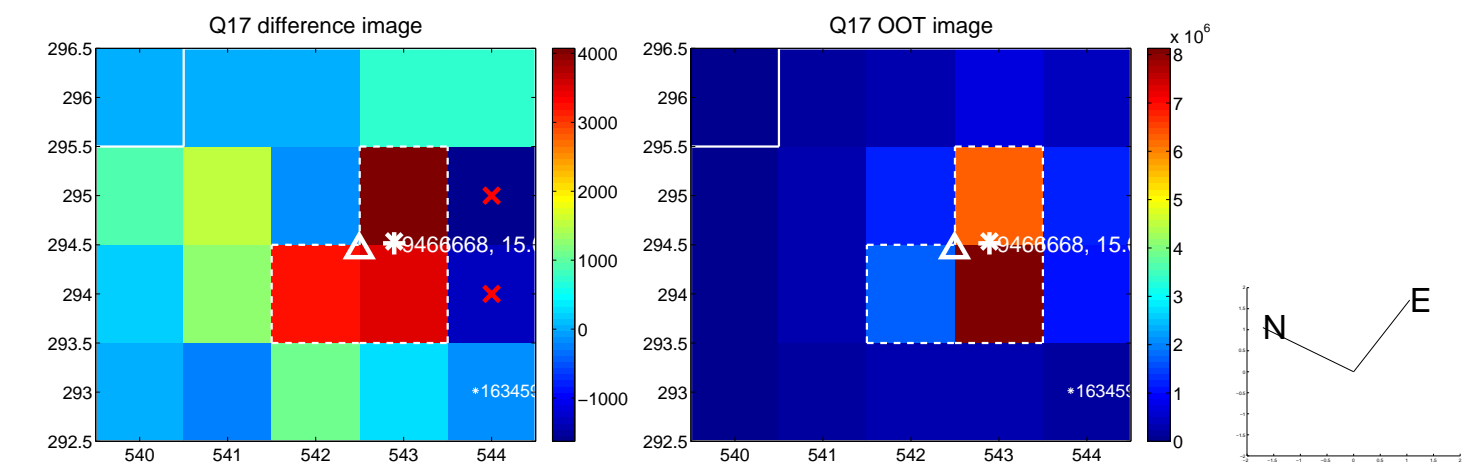
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



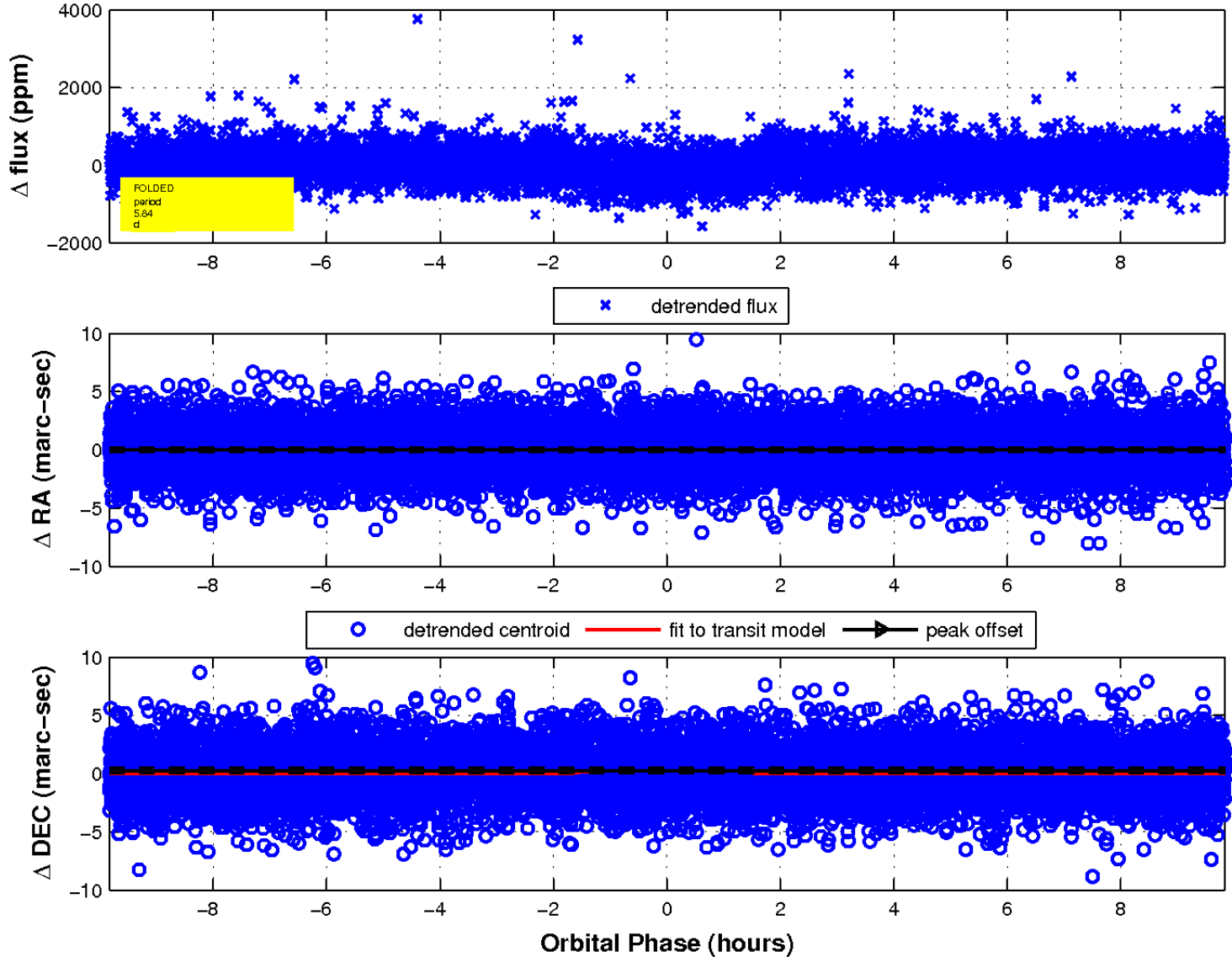
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

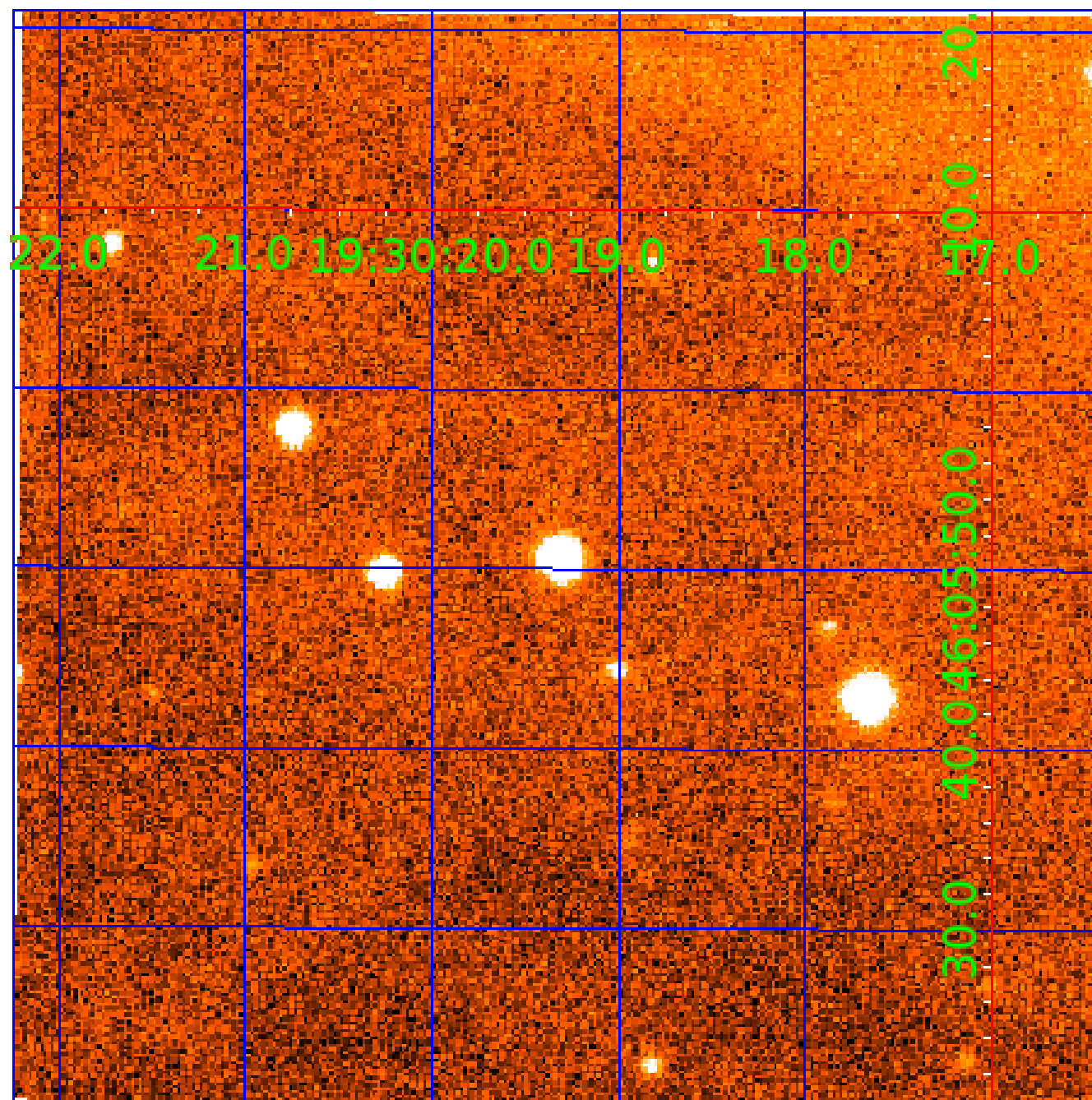


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 009466668

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})
009466668-01	OBS	0939.01	3.388032	133.262912	283.5	2.758	25.5	28.3	1.25	5553	2.53	707.43
009466668-02	OBS	0939.02	5.839067	132.095509	259.5	3.279	19.0	20.4	1.25	5553	2.36	342.36
009466668-03	OBS	0939.03	1.620472	132.065435	166.9	2.400	17.3	20.9	1.25	5553	2.07	1891.28
009466668-04	OBS	0939.04	10.681649	131.554770	314.9	3.732	14.8	17.3	1.25	5553	2.54	153.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009466668-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-04	OBS	PC	1.00	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.

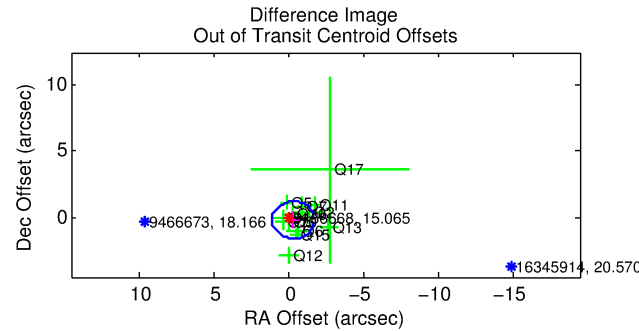
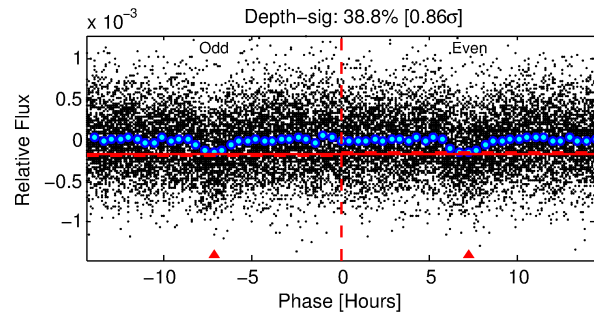
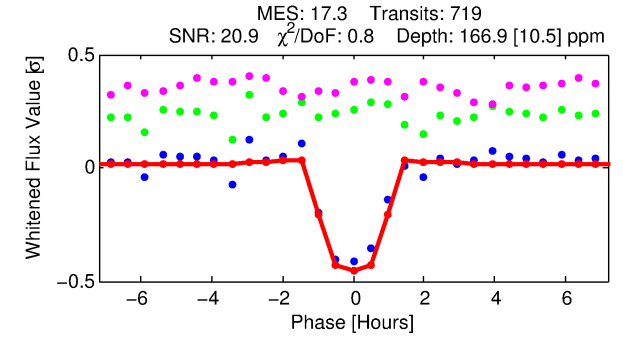
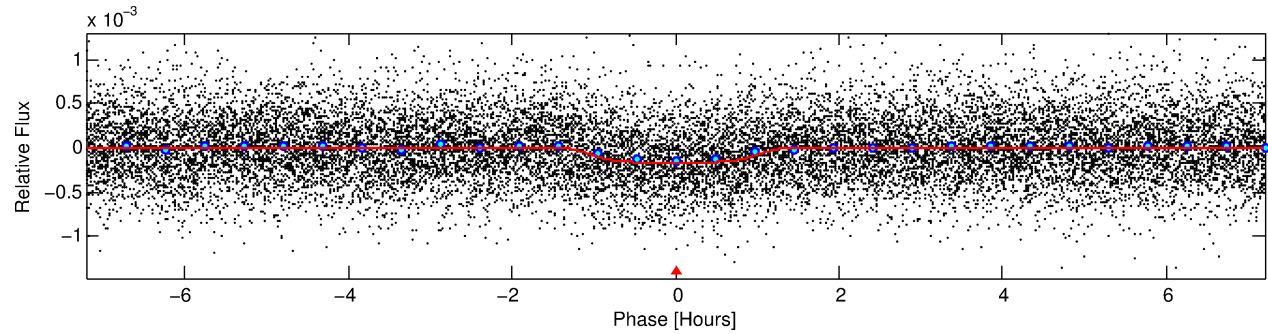
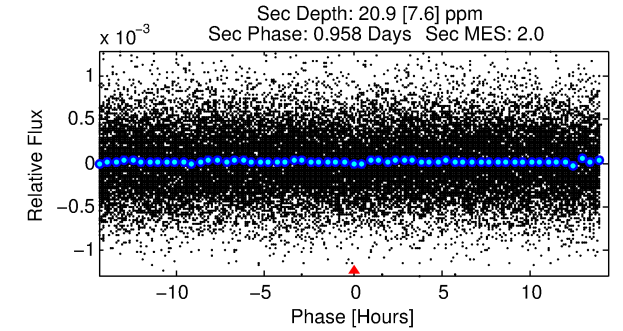
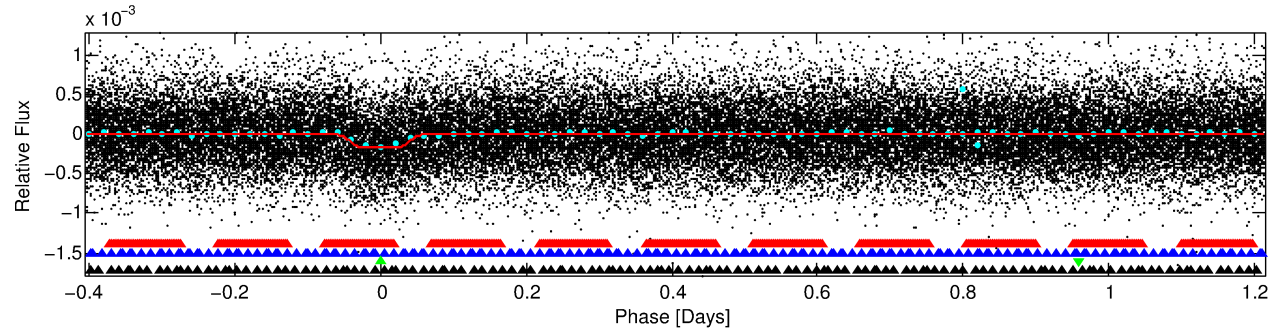
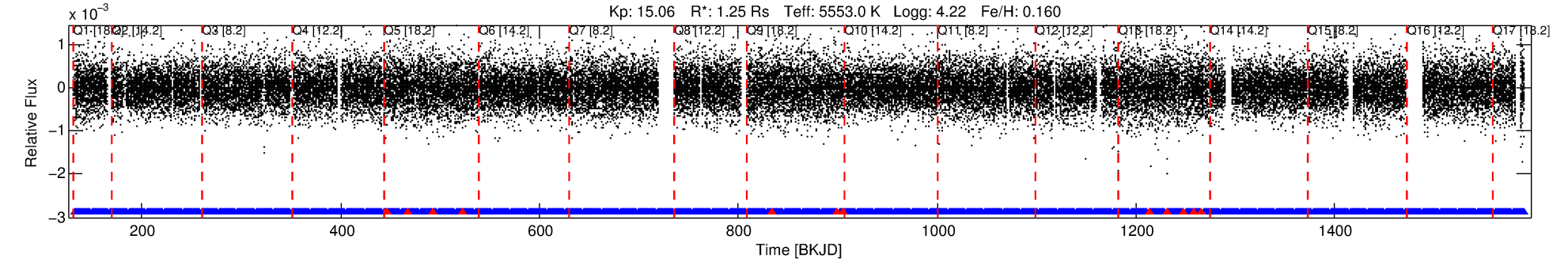
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009466668-03

No Significant Match Found

DV One-Page Summary

KIC: 9466668 Candidate: 3 of 4 Period: 1.620 d
KOI: K00939.03 Name: Kepler-256b Corr: 0.957



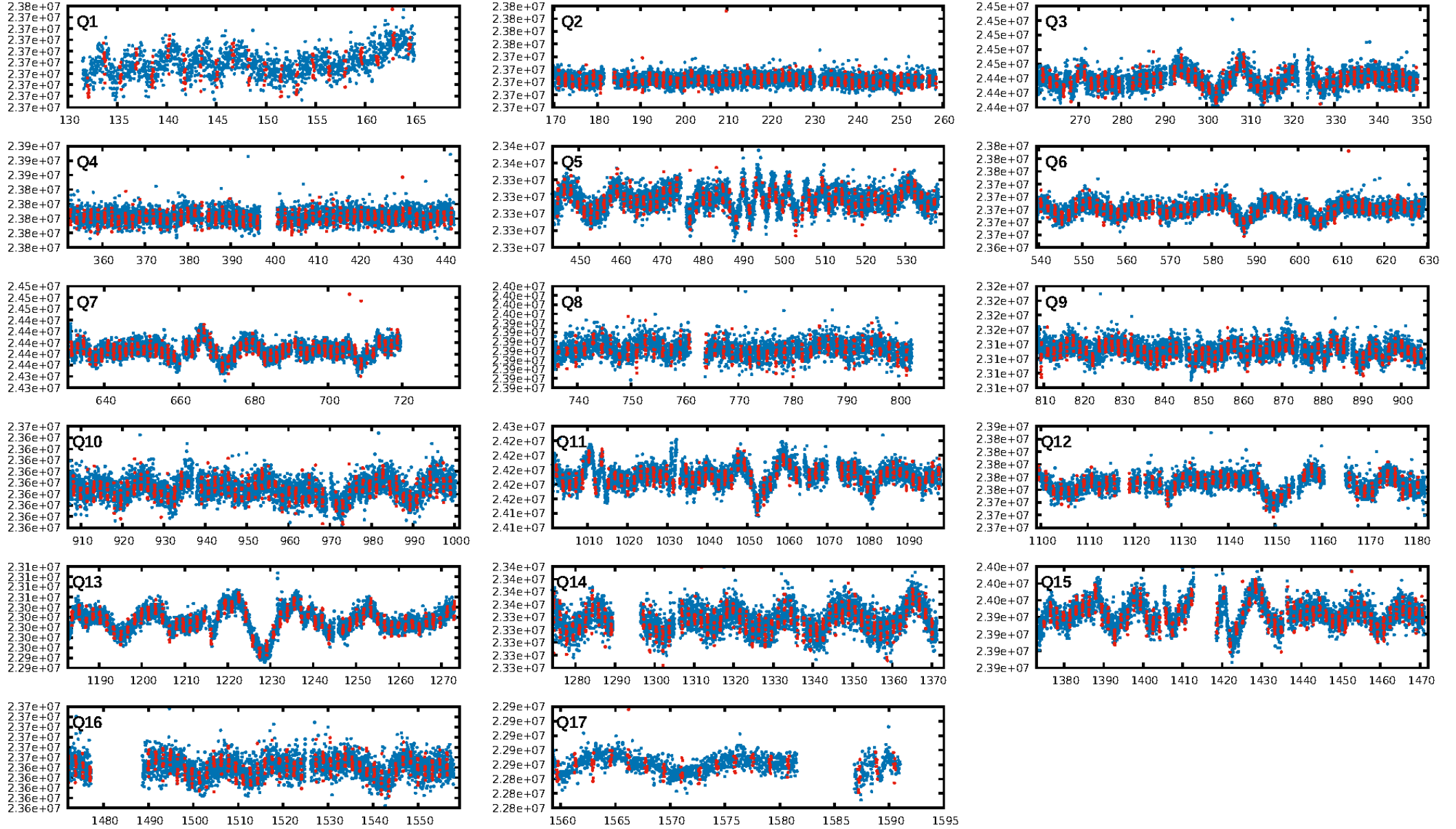
DV Fit Results:

Period = 1.62047 [0.00001] d
Epoch = 132.0654 [0.0016] BKJD
Rp/R* = 0.0152 [0.0021]
a/R* = 2.11 [1.05]
b = 0.95 [0.07]
Seff = 1891.28 [615.94]
Teq = 1682 [137] K
Rp = 2.07 [0.49] Re
a = 0.0265 [0.0051] AU
Ag = 1.88 [1.05] [0.84 σ]
Teffp = 3046 [355] K [3.59 σ]

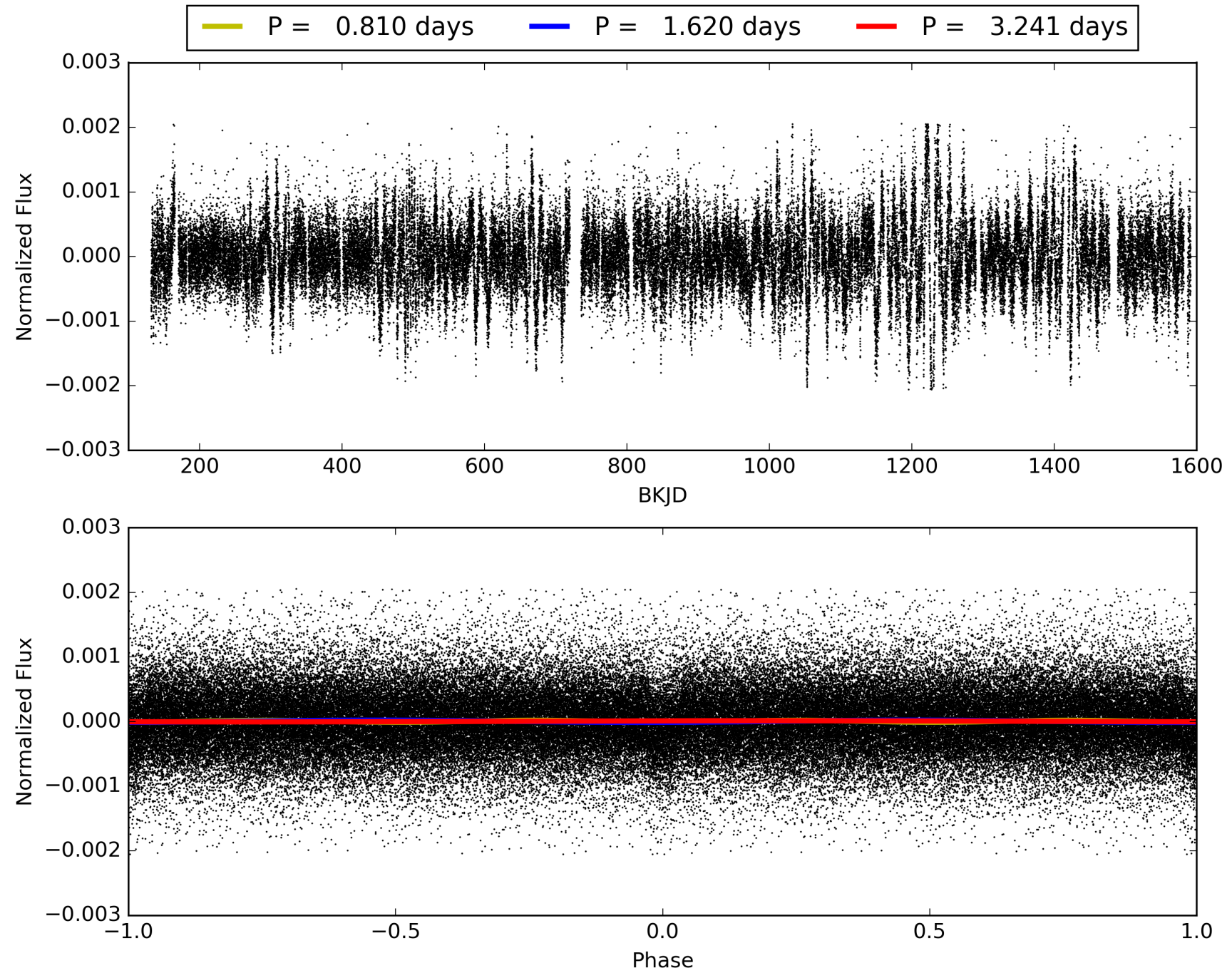
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [11.60 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.74e-66
RollingBand-fgt: 0.98 [676/688]
GhostDiagnostic-chr: 3.675
Centroid-sig: 6.9%
Centroid-so: 0.940 arcsec [1.49 σ]
OotOffset-rm: 0.401 arcsec [0.86 σ]
KicOffset-rm: 0.406 arcsec [0.86 σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 00946668-03, PDC Light Curves

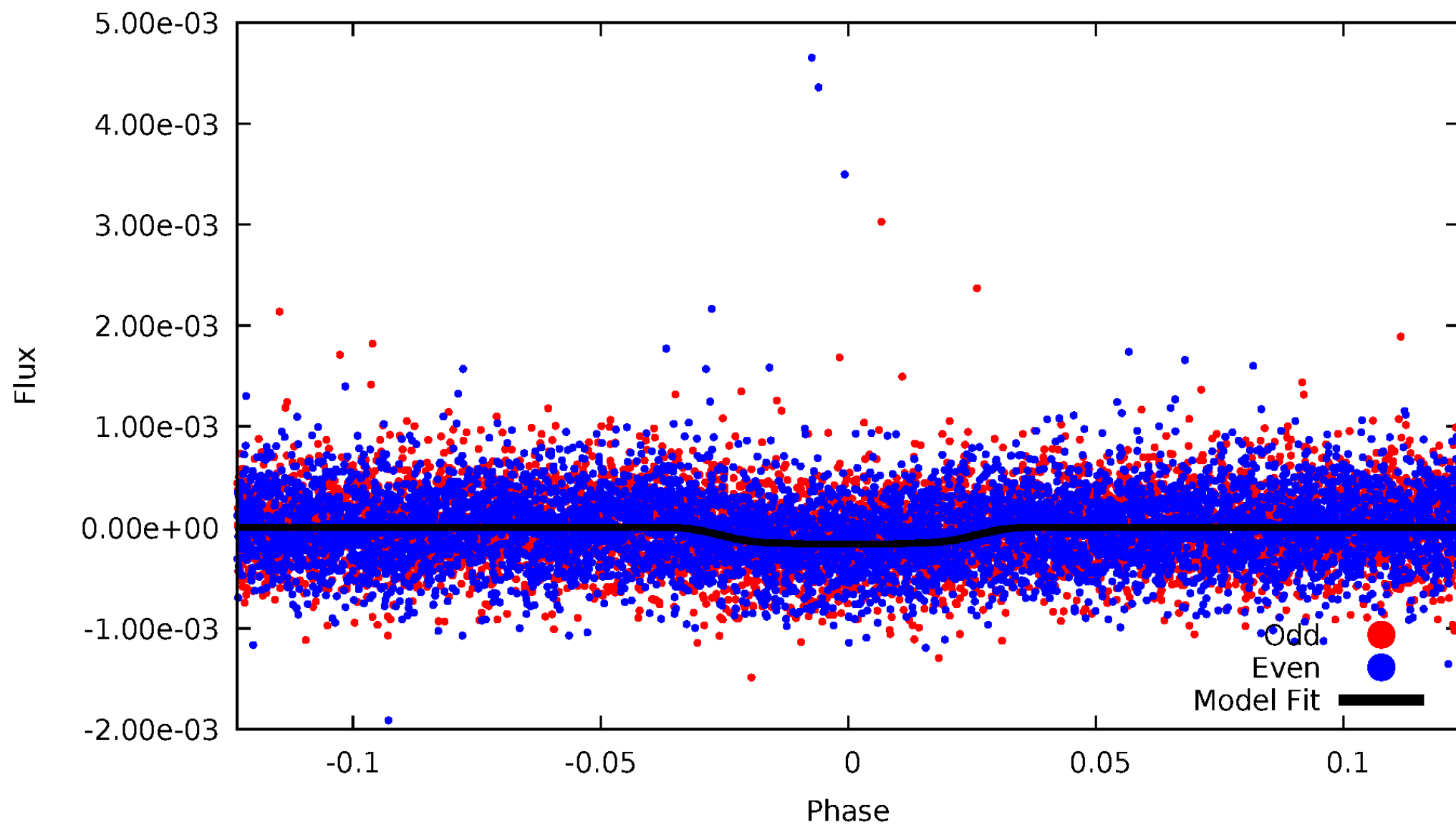


TCE 009466668-03



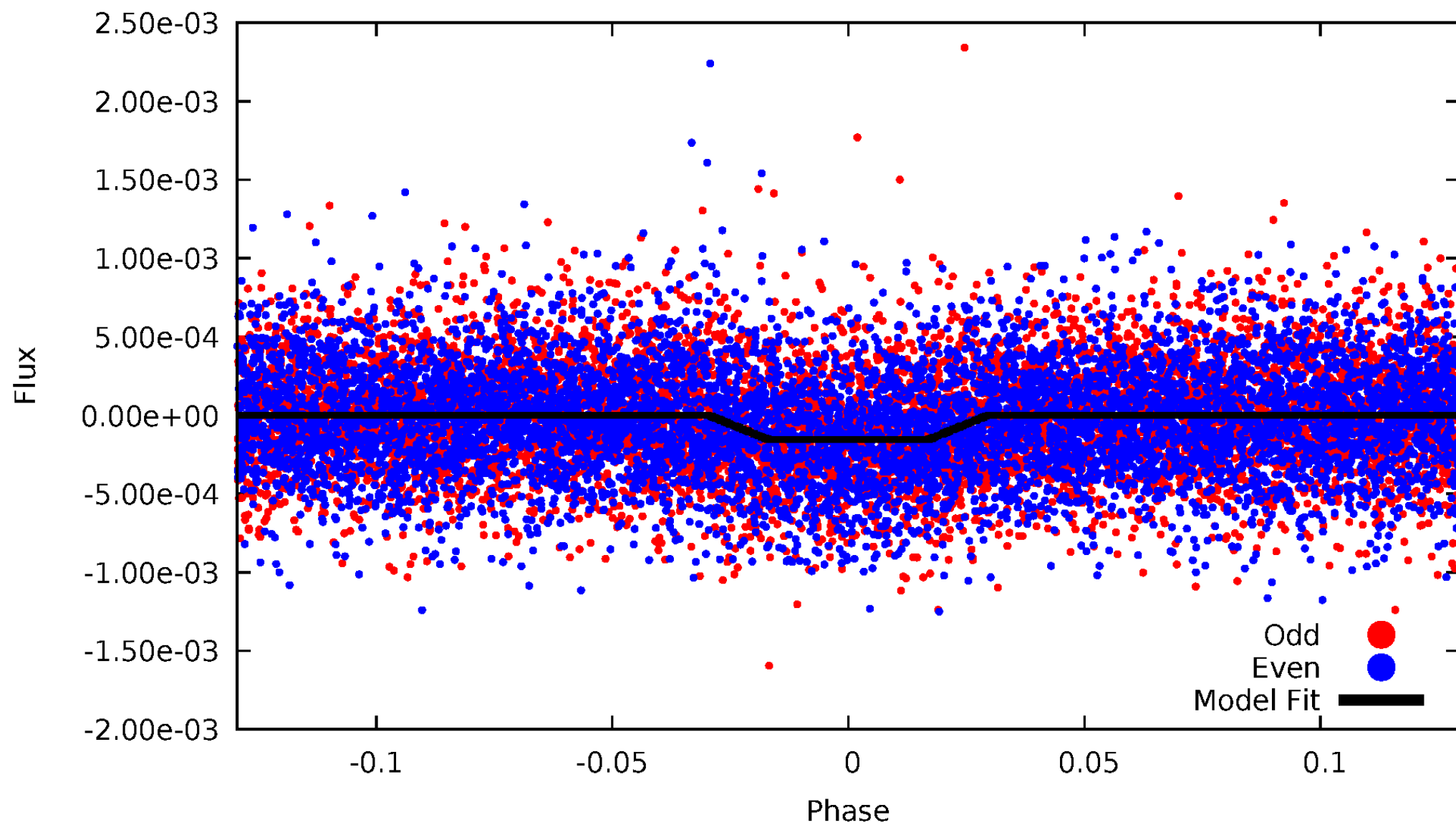
DV Odd/Even

TCE 009466668-03



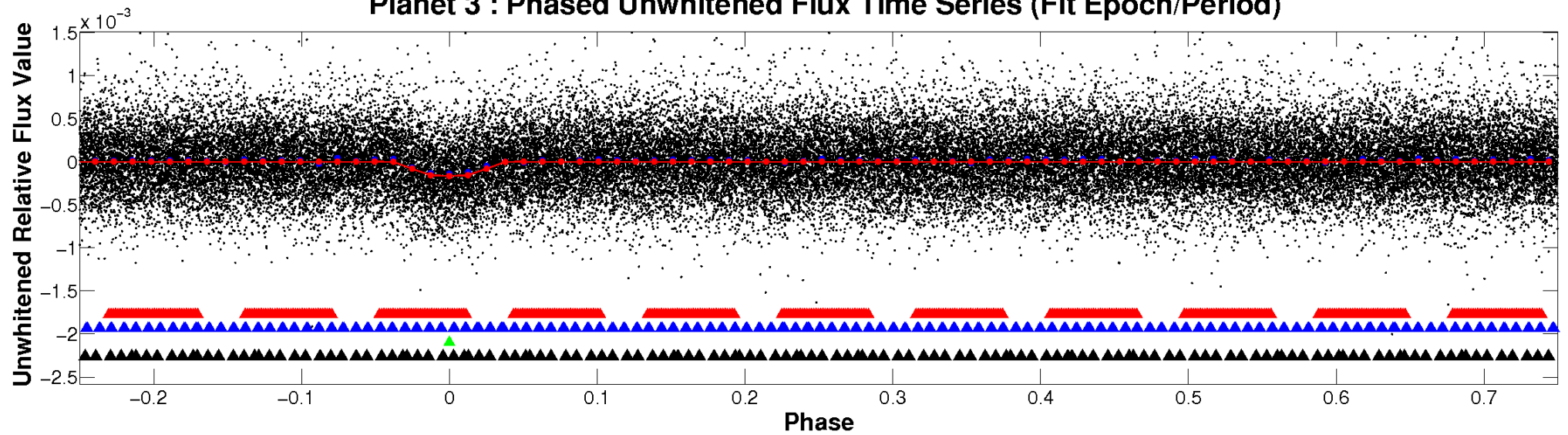
ALT Odd/Even

TCE 009466668-03

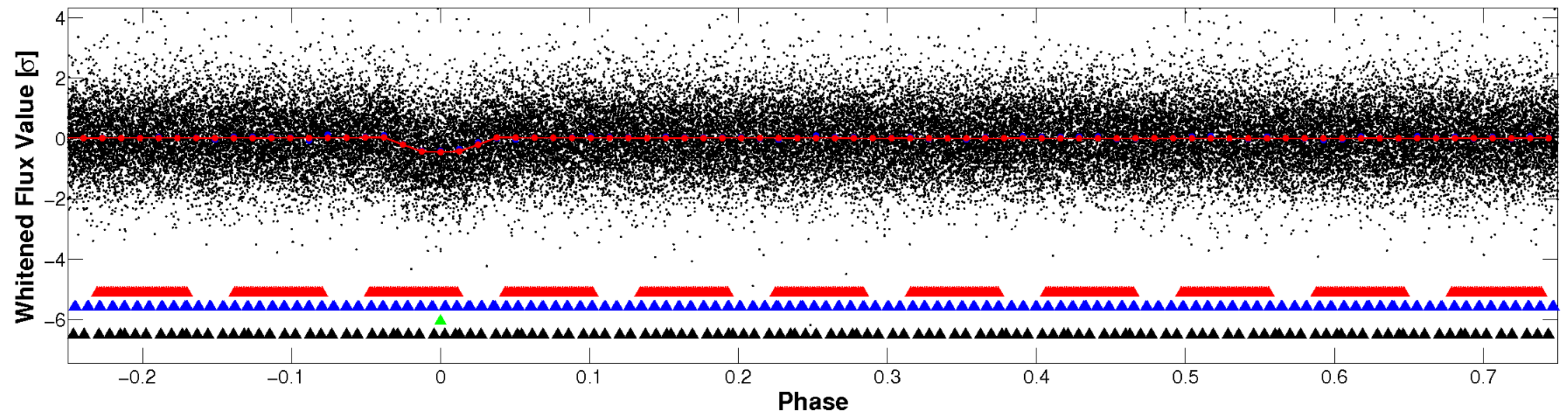


Non-Whitened Vs. Whitened Light Curve

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

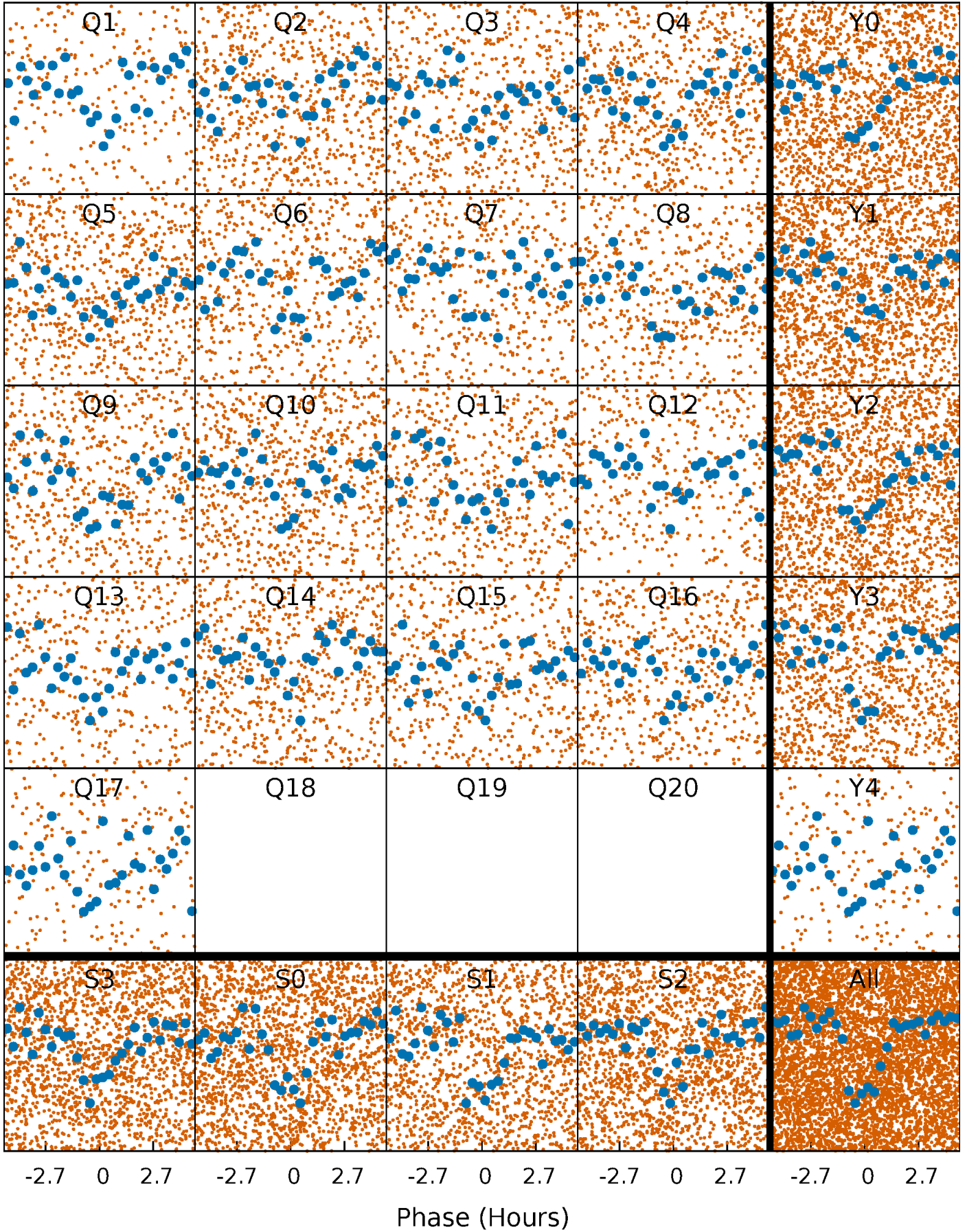


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



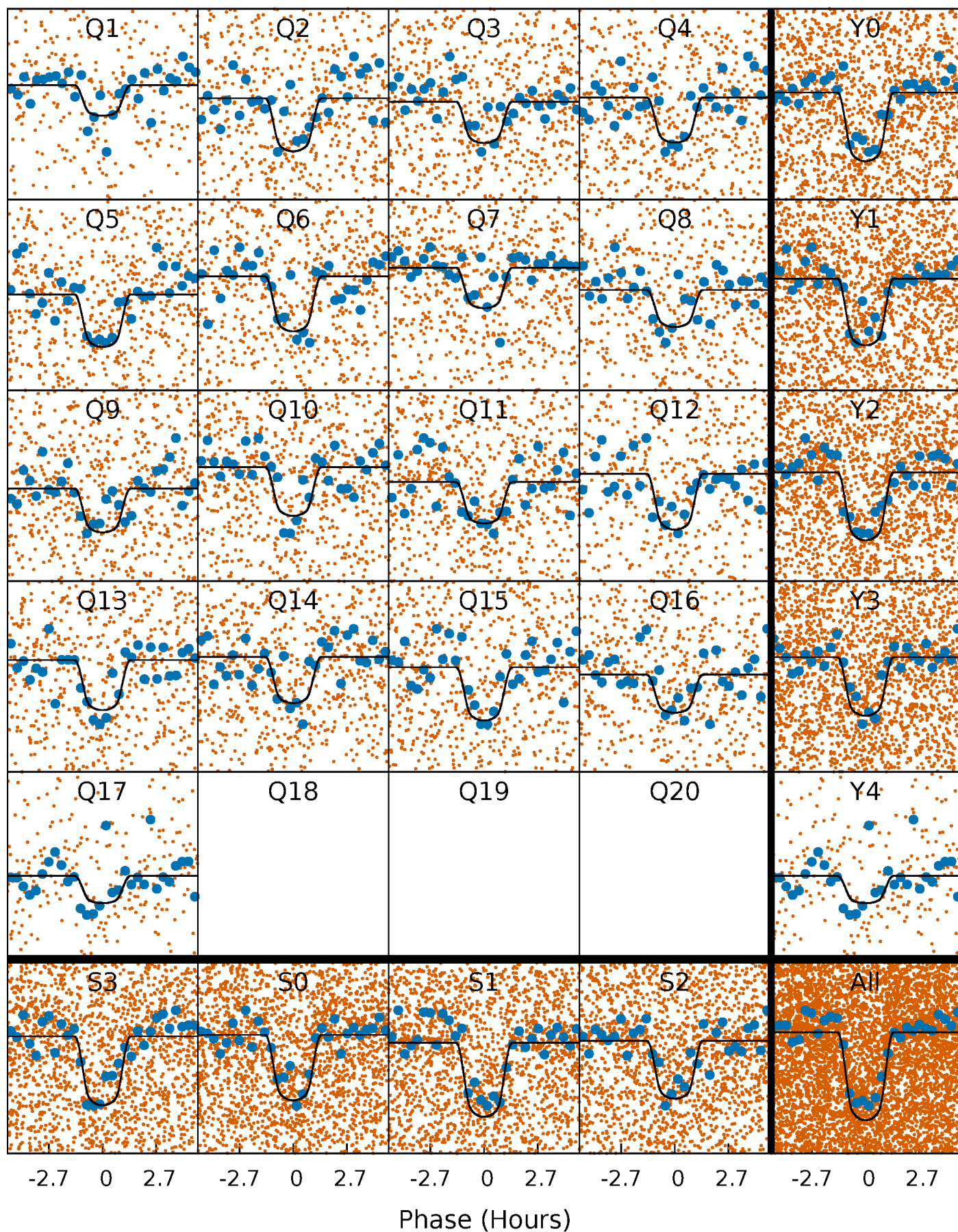
PDC Quarter-Phased Transit Curves

TCE 009466668-03 P= 1.620472 Days $T_0=132.065435$ (BKJD)



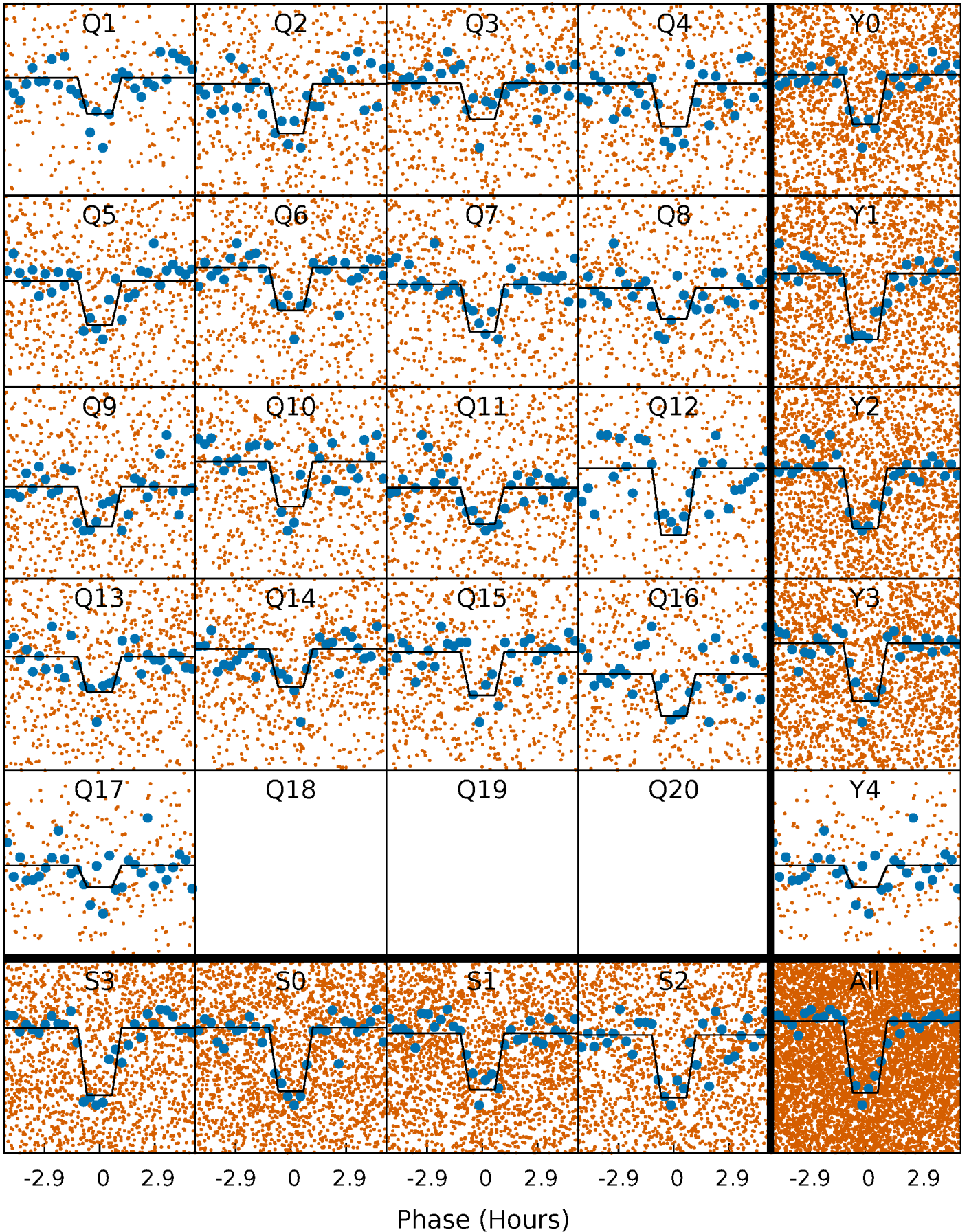
DV Quarter-Phased Transit Curves

TCE 009466668-03 P= 1.620472 Days $T_0=132.065435$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

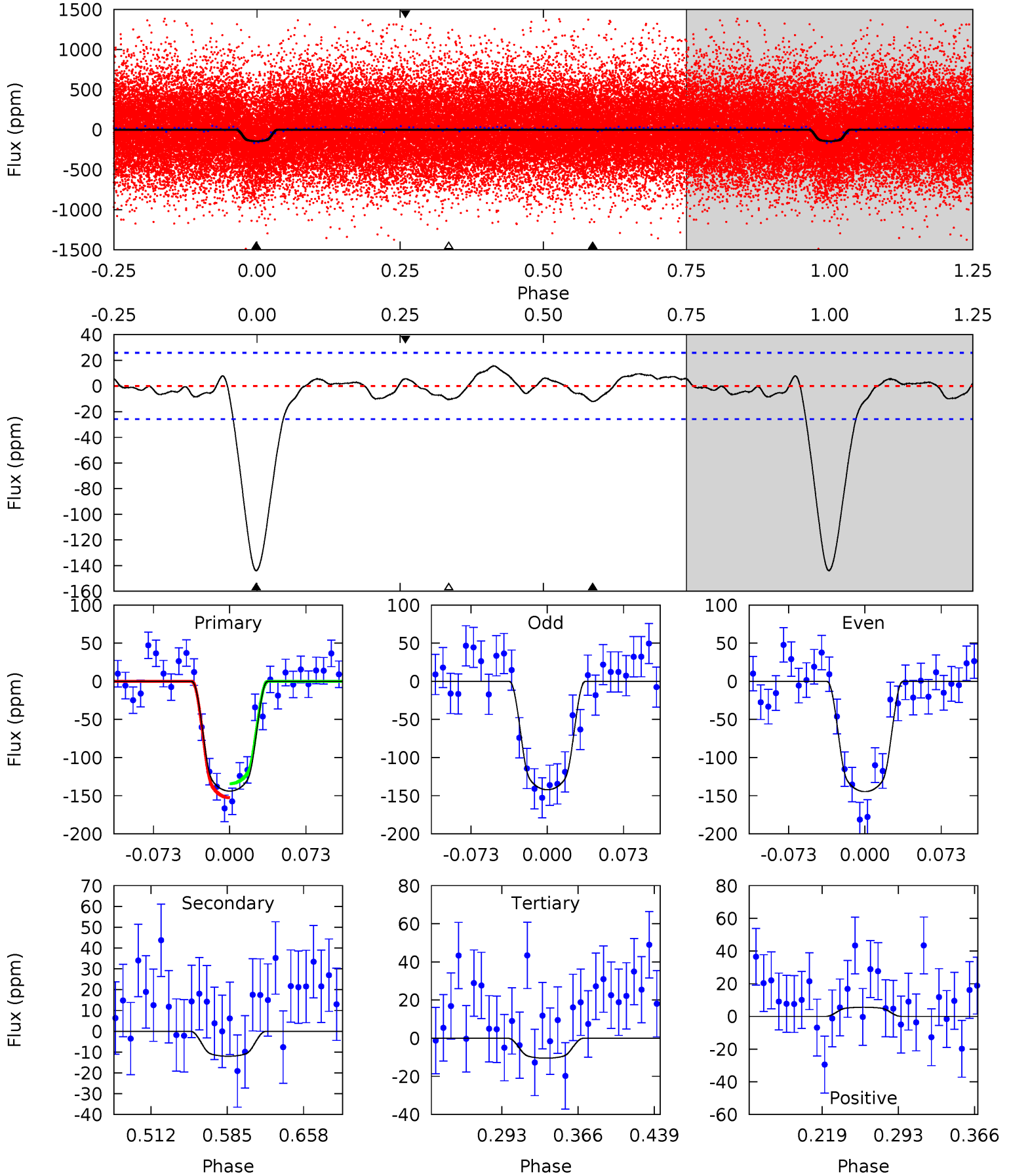
TCE 009466668-03 P= 1.620458 Days $T_0=132.070645$ (BKJD)



DV Model-Shift Uniqueness Test

009466668-03, P = 1.620472 Days, E = 130.444963 Days

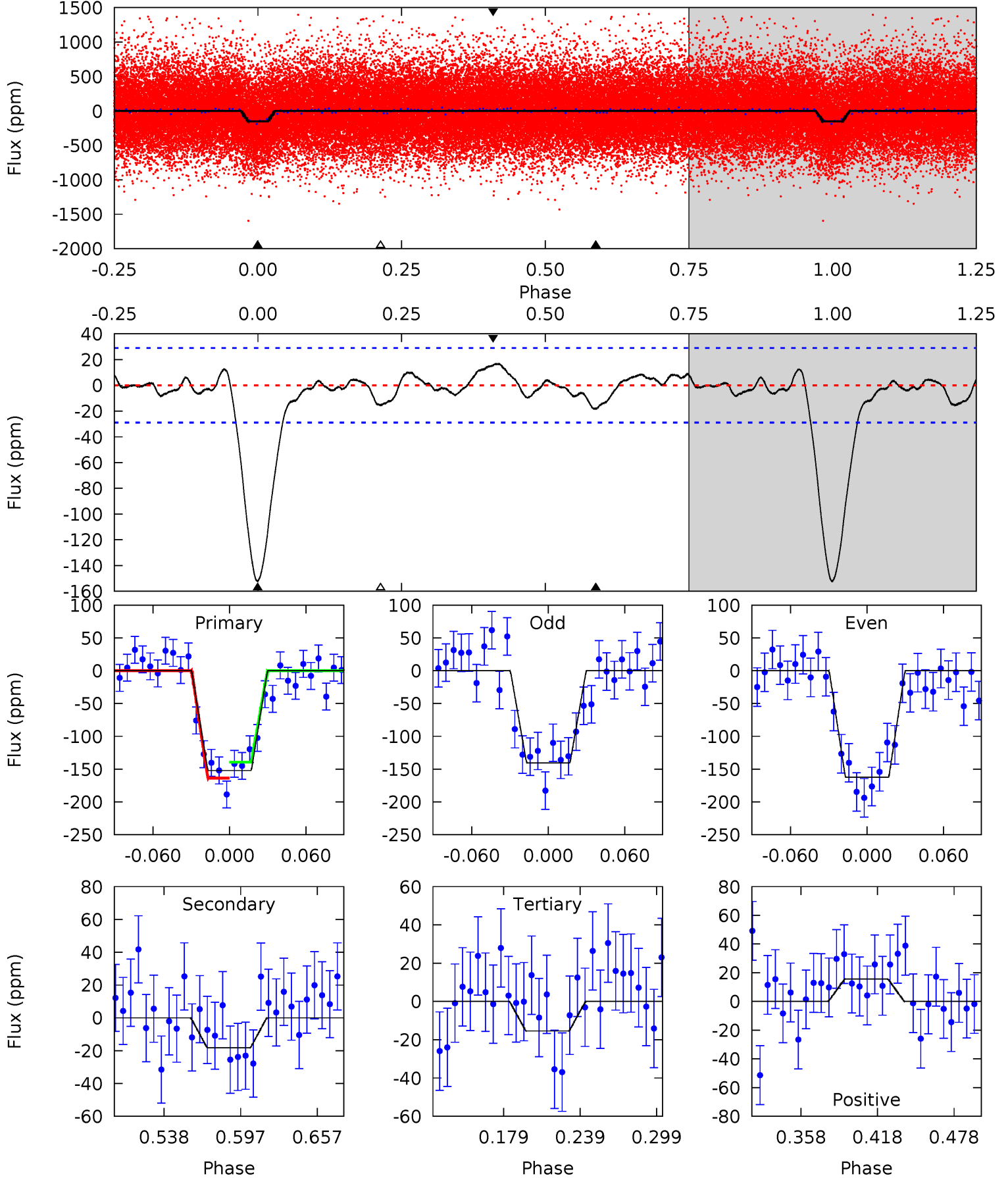
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	2.15	1.88	1.00	4.63	1.79	1.11	23.9	24.8	0.28	1.15	0.22	0.97	0.10	1.65



Alt Model-Shift Uniqueness Test

009466668-03, P = 1.620458 Days, E = 130.450187 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.5	2.93	2.49	2.51	4.67	1.88	1.07	22.0	22.0	0.45	0.43	1.78	0.99	0.10	1.94



Stellar Parameters For KIC 009466668

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5553^{+111}_{-1}	$4.221^{+0.188}_{-0.101}$	$0.160^{+0.150}_{-0.150}$	$1.250^{+0.196}_{-0.240}$	$0.949^{+0.080}_{-0.046}$	$0.685^{+0.647}_{-0.229}$
	+2%/-0%	+4%/-2%	+94%/-94%	+16%/-19%	+8%/-5%	+95%/-33%
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 009466668-03 / KOI 0939.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 6	$2.03^{+0.35}_{-0.34}$	2319^{+120}_{-148}	3045^{+320}_{-393}	$1.069^{+0.783}_{-0.508}$
Alt.	-18 ± 6	$1.67^{+0.31}_{-0.33}$	2311^{+123}_{-142}	3573^{+329}_{-335}	$2.608^{+1.695}_{-1.078}$

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 $A_{obs} \gg 1.0$

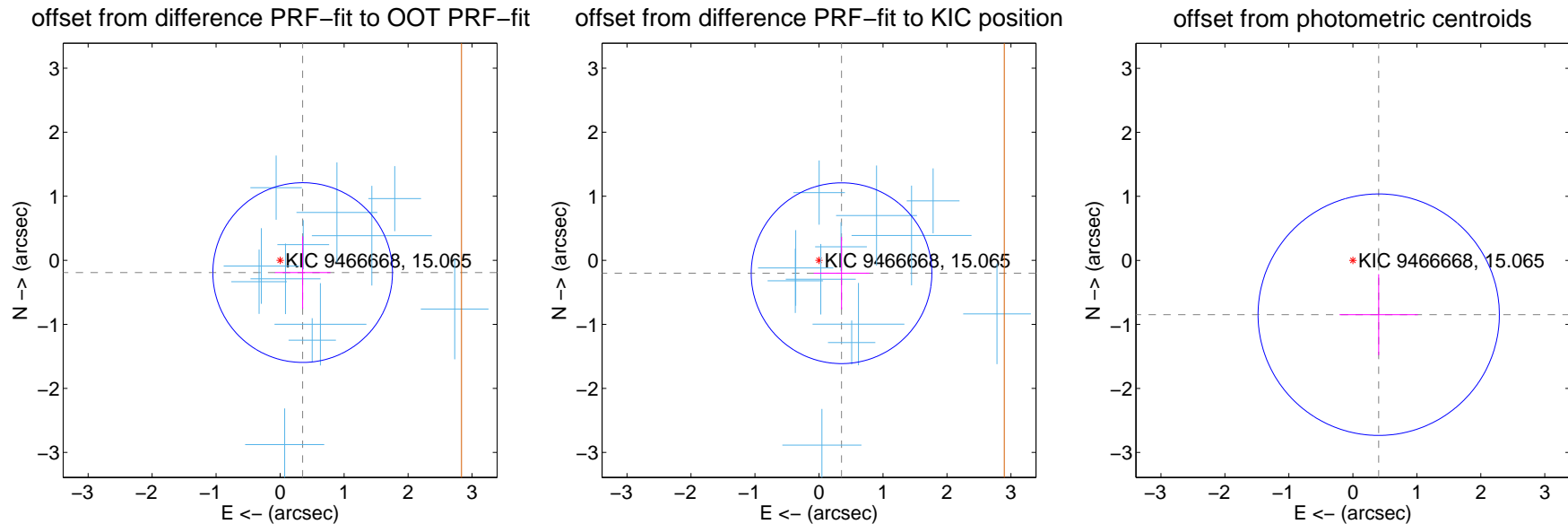
DV Centroid Data

Supplemental centroid analysis for 009466668-03. Kepler magnitude: 15.06. Transit SNR 20.88

There are 12 quarters with good PRF difference image offsets

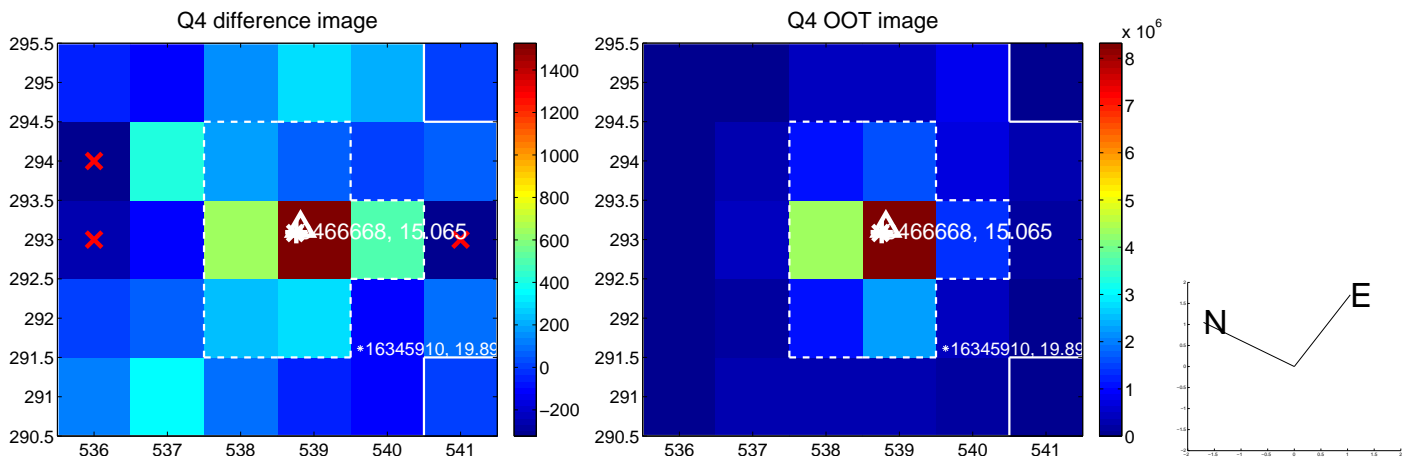
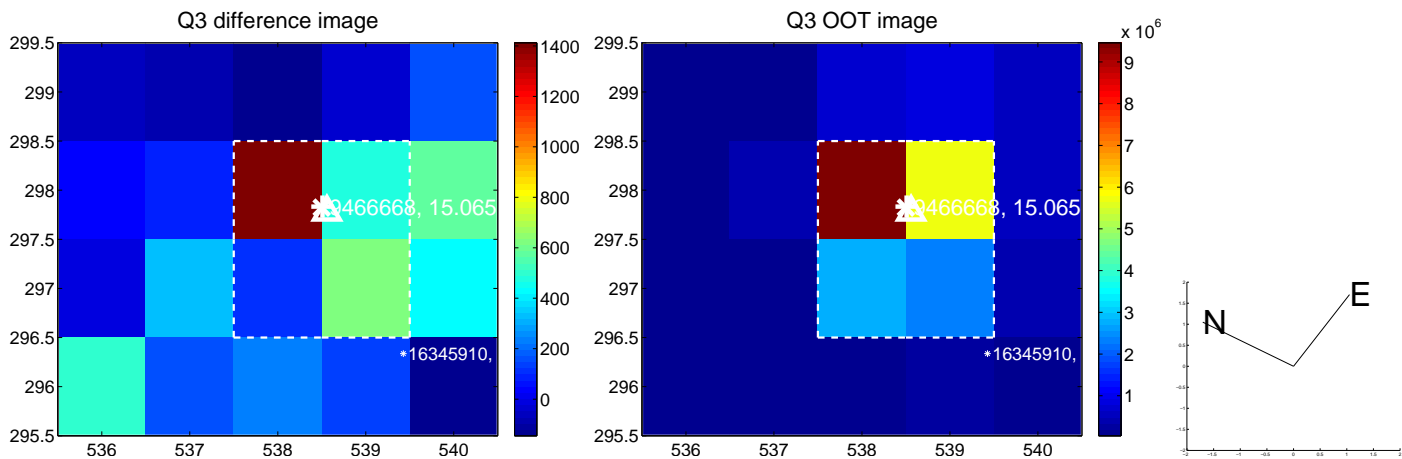
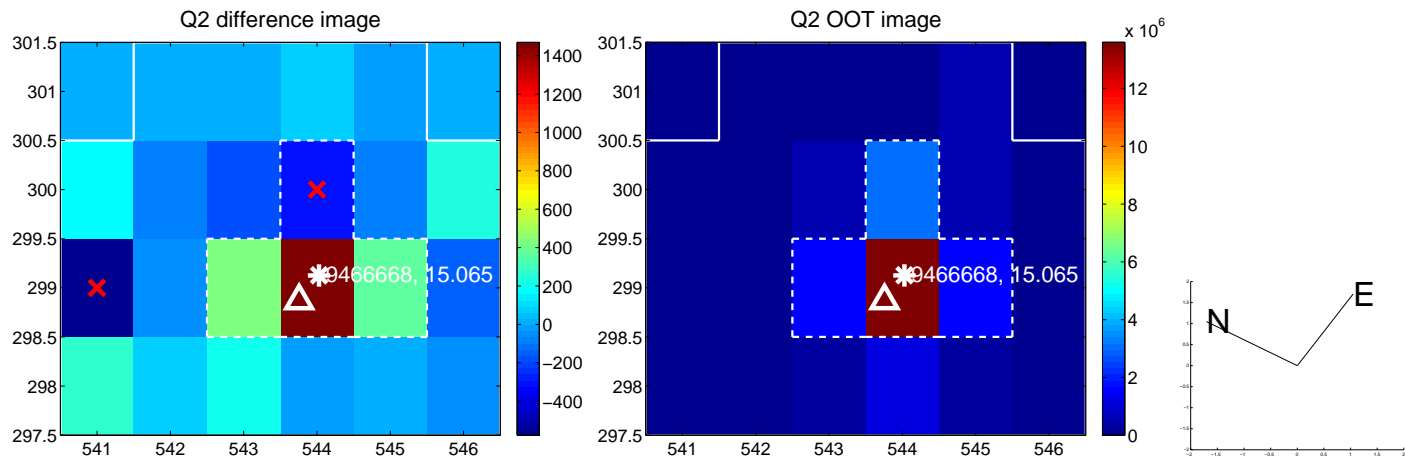
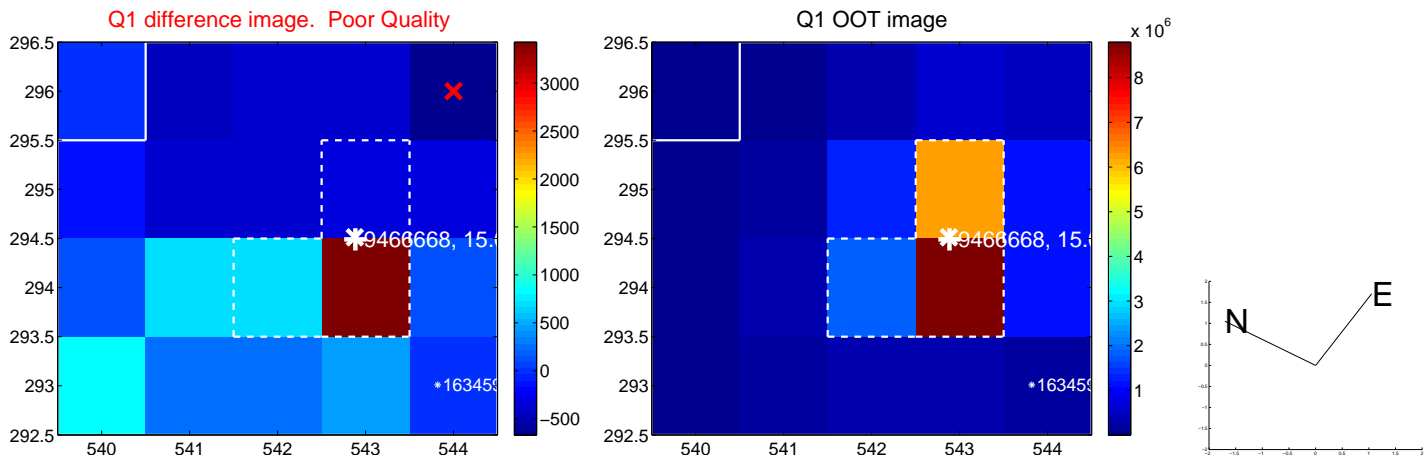
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.401 ± 0.468	0.86	-0.353 ± 0.434	-0.192 ± 0.567
PRF-fit source offset from KIC position	0.406 ± 0.471	0.86	-0.352 ± 0.434	-0.202 ± 0.567
photometric centroid source offset	0.94 ± 0.63	1.49	-0.40 ± 0.61	-0.85 ± 0.63

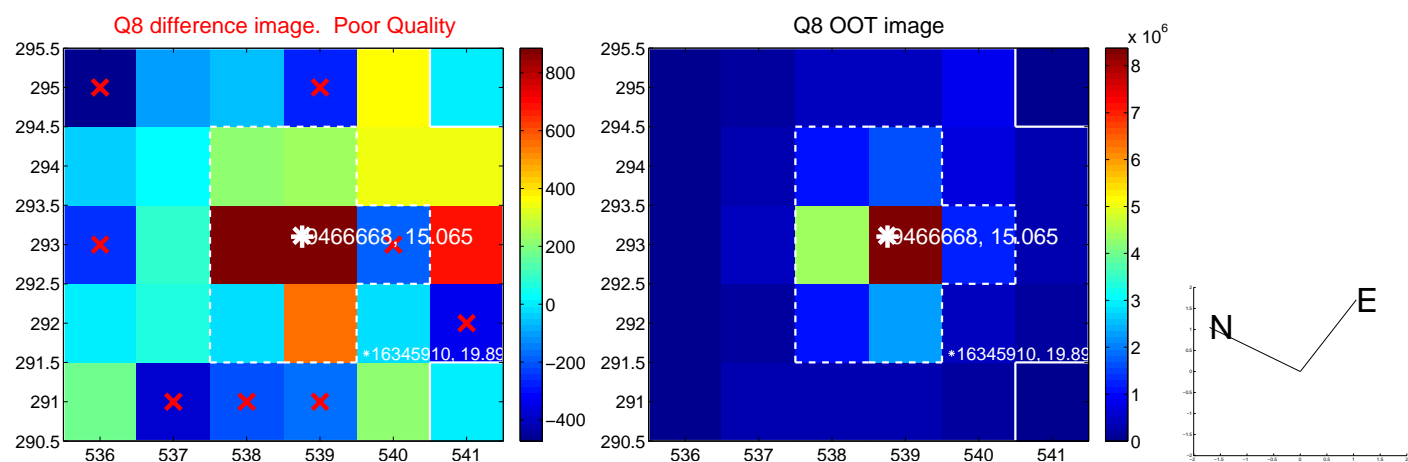
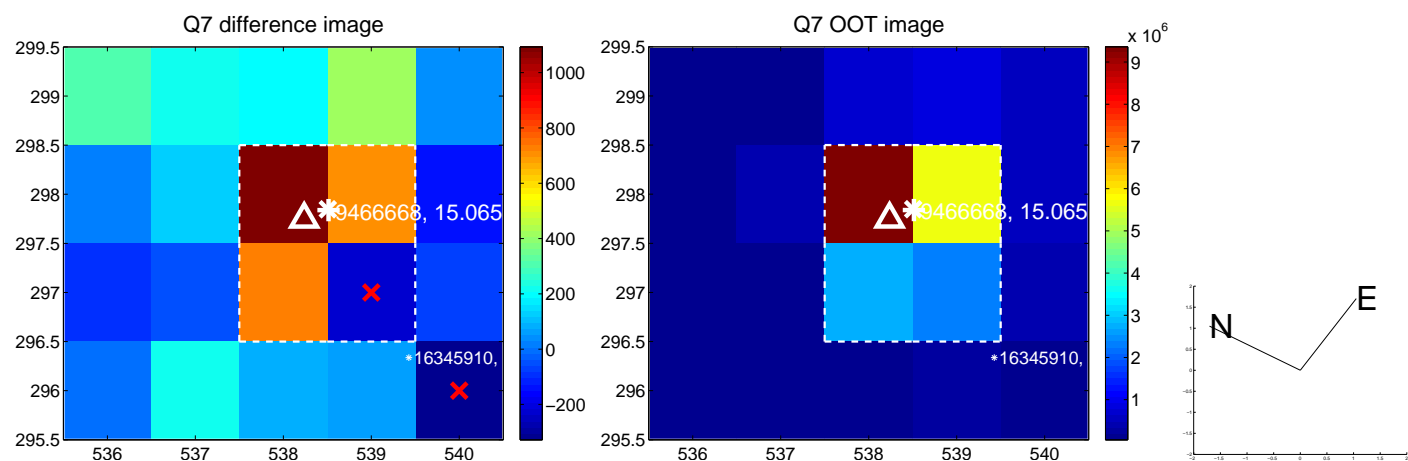
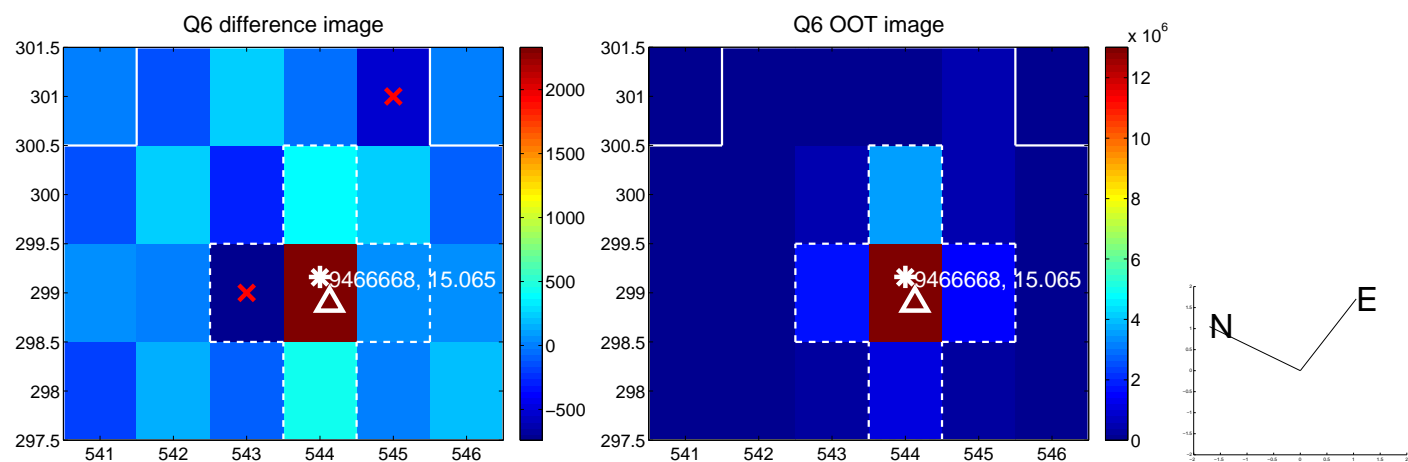
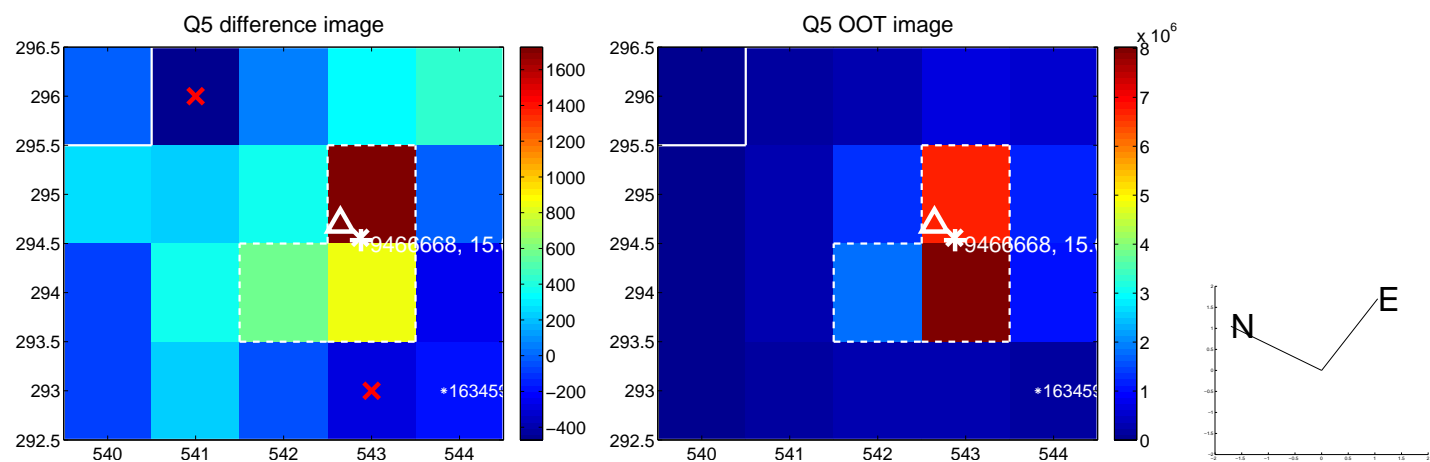


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

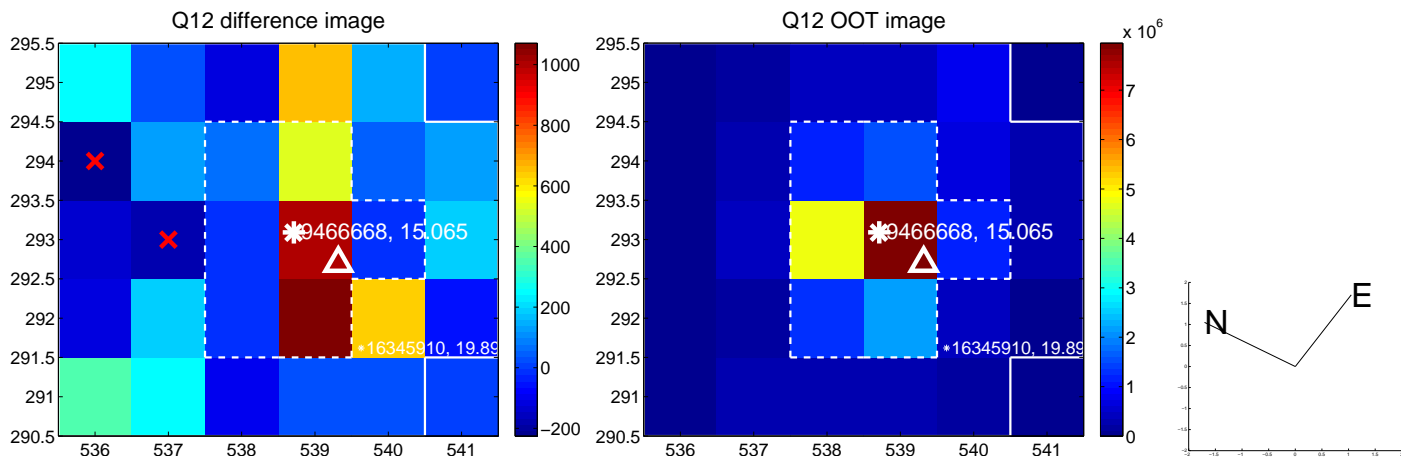
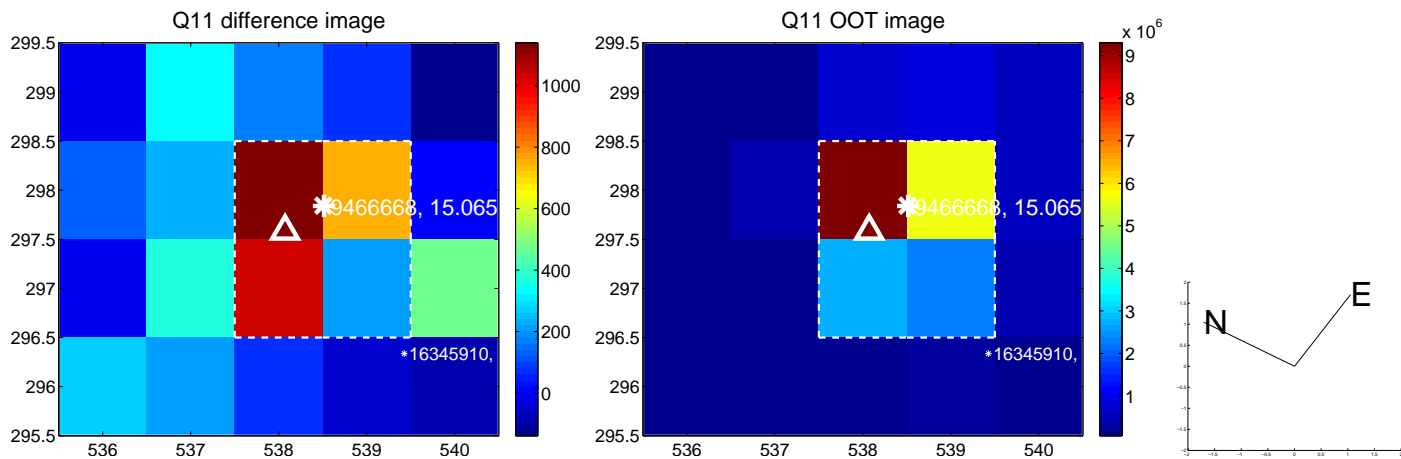
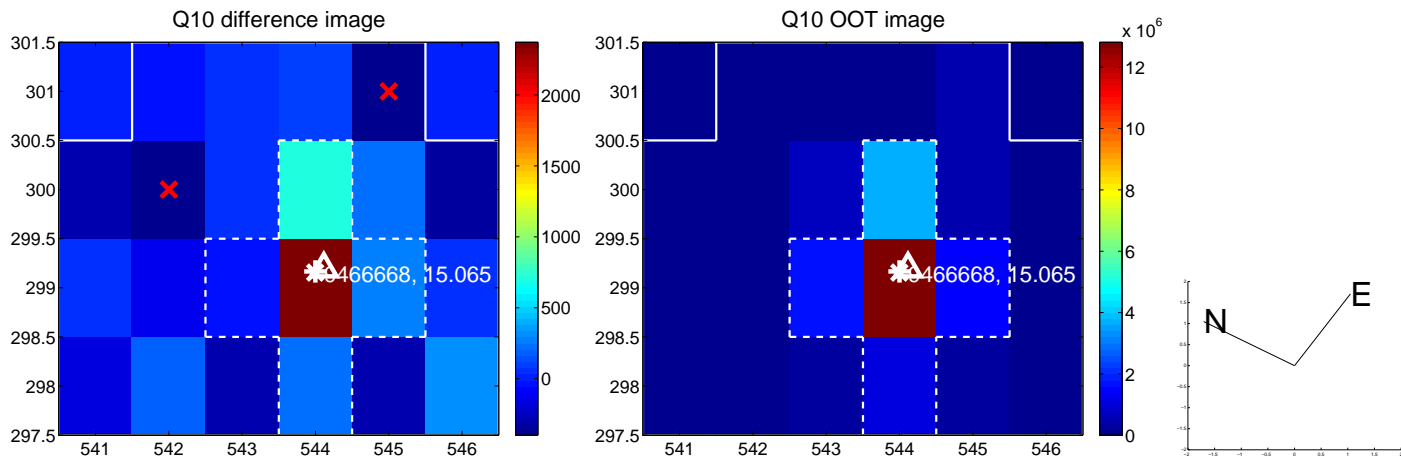
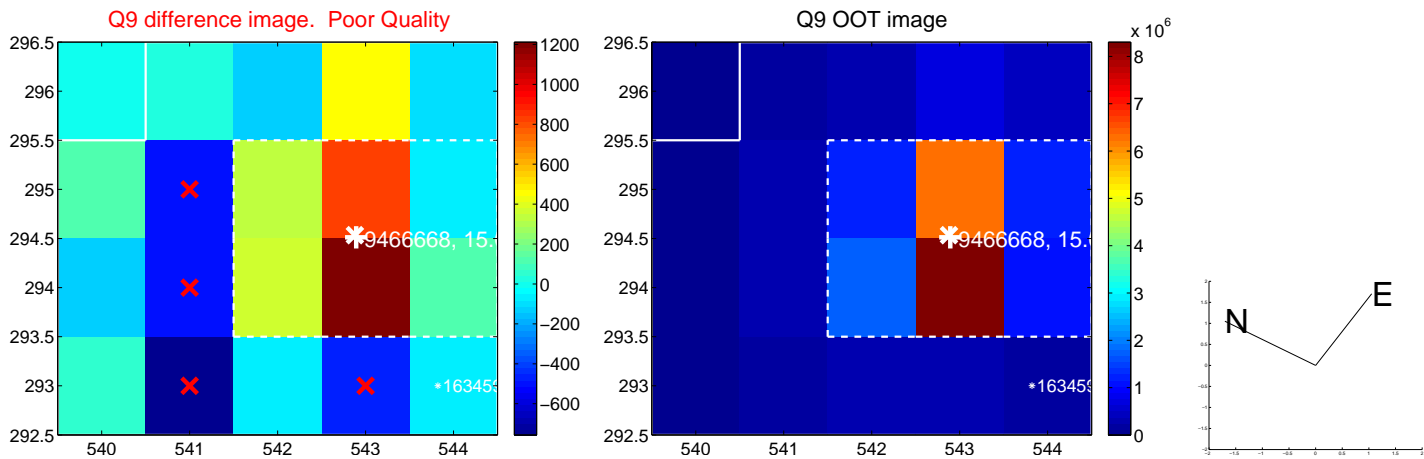
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



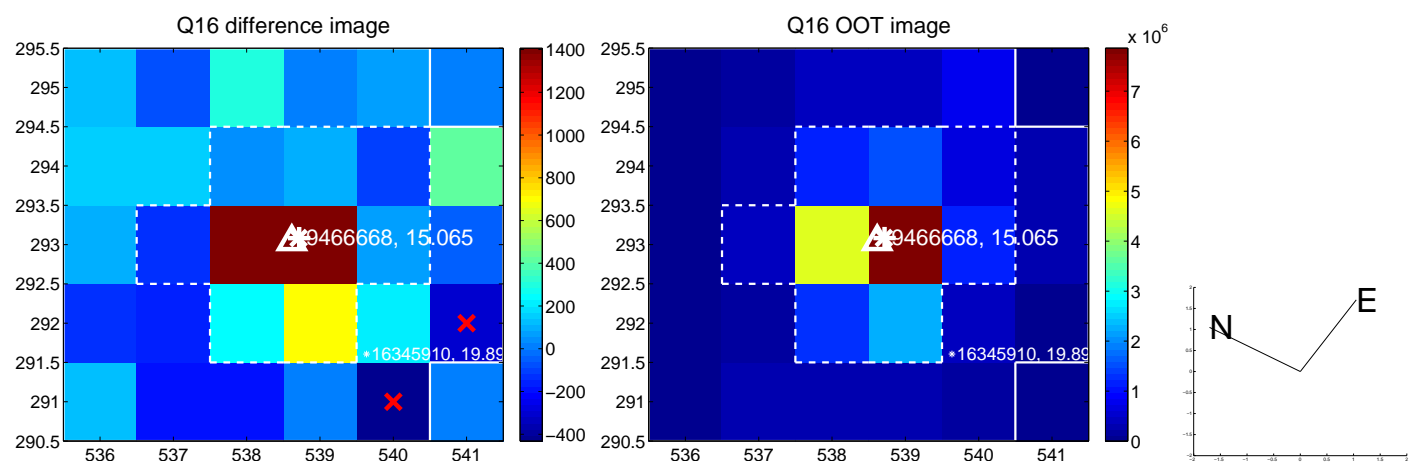
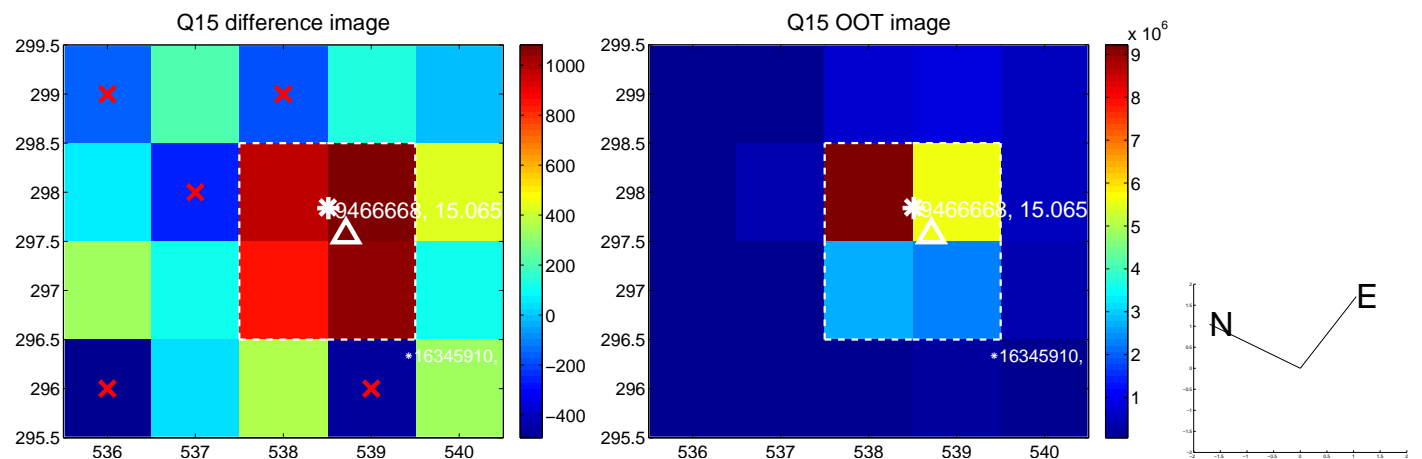
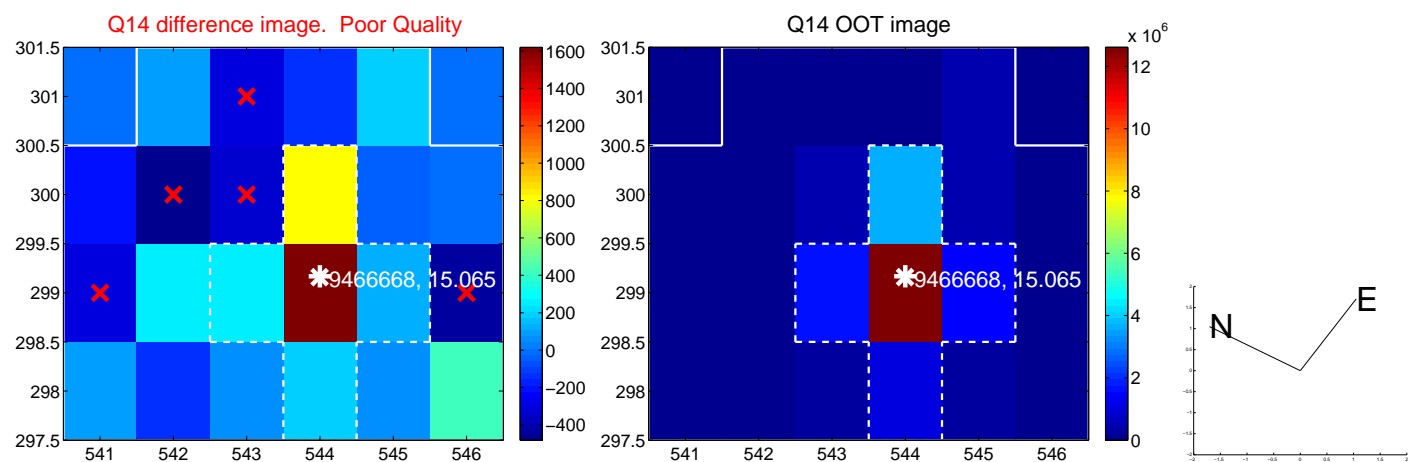
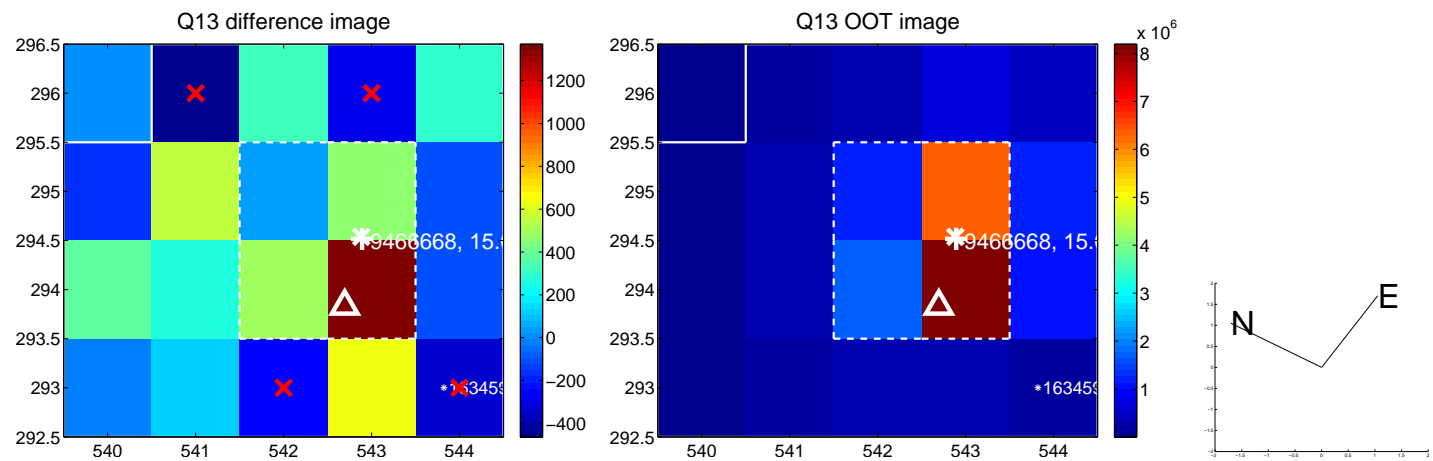
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



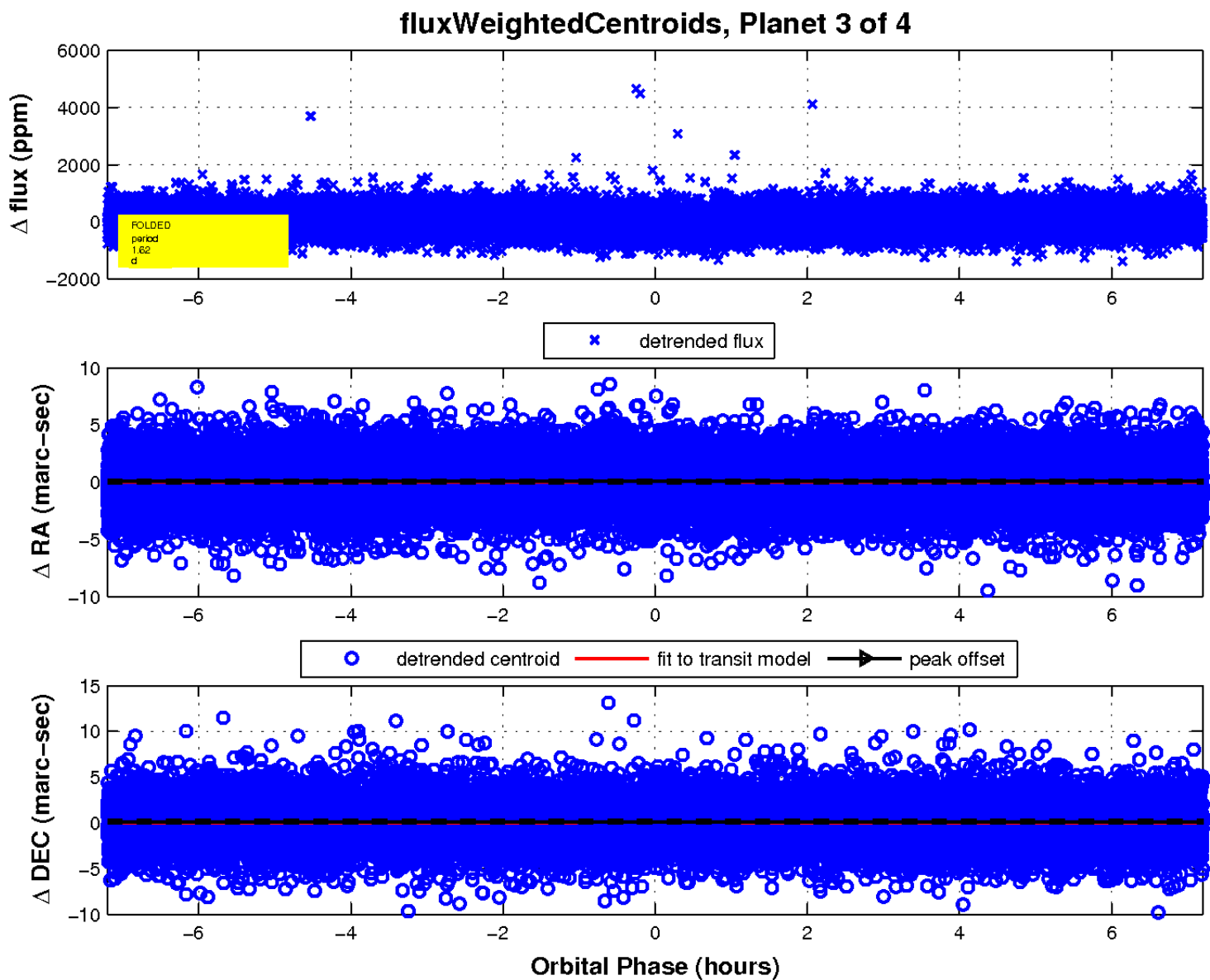
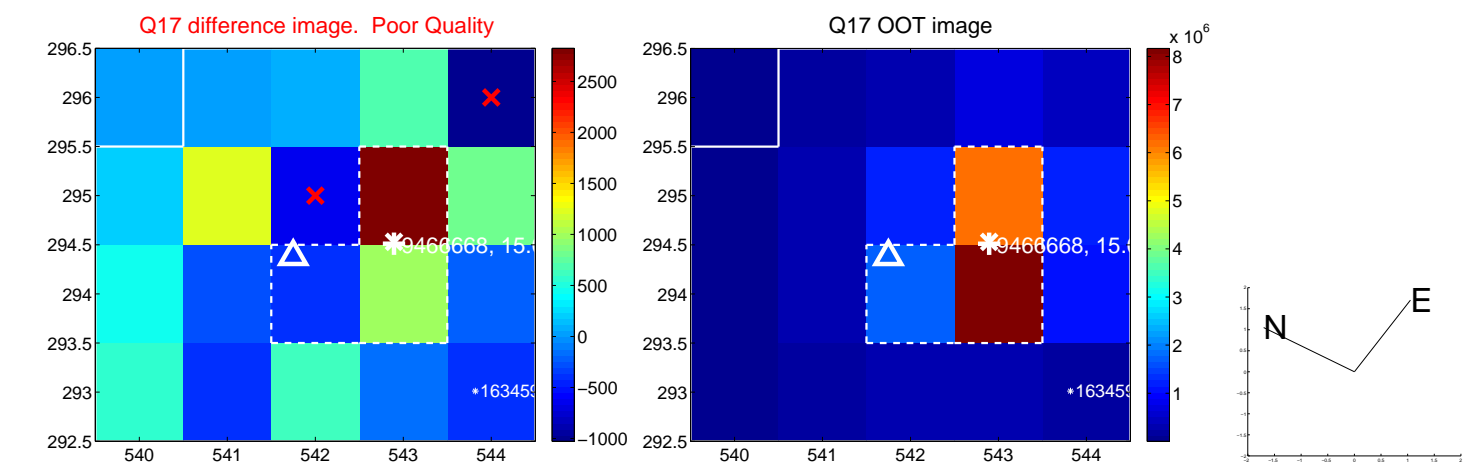
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

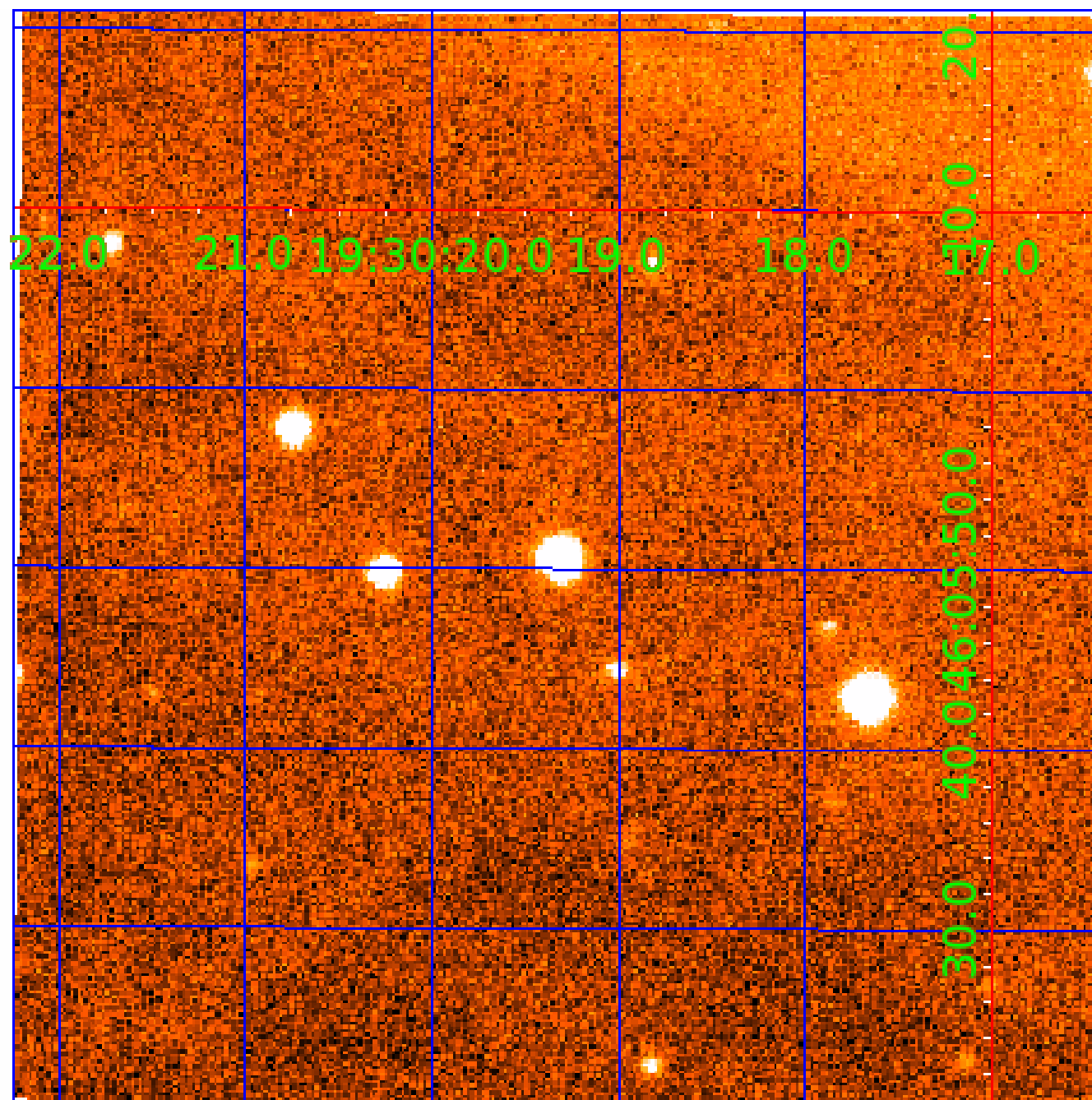


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009466668

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})
009466668-01	OBS	0939.01	3.388032	133.262912	283.5	2.758	25.5	28.3	1.25	5553	2.53	707.43
009466668-02	OBS	0939.02	5.839067	132.095509	259.5	3.279	19.0	20.4	1.25	5553	2.36	342.36
009466668-03	OBS	0939.03	1.620472	132.065435	166.9	2.400	17.3	20.9	1.25	5553	2.07	1891.28
009466668-04	OBS	0939.04	10.681649	131.554770	314.9	3.732	14.8	17.3	1.25	5553	2.54	153.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009466668-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
009466668-04	OBS	PC	1.00	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.

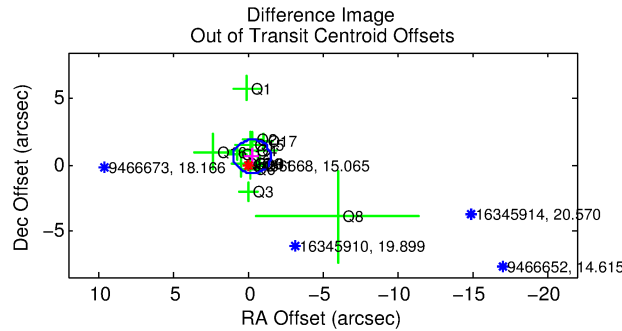
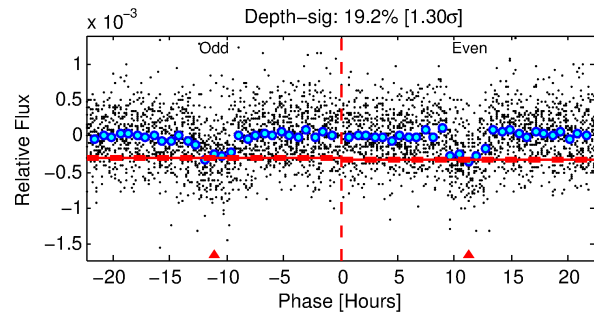
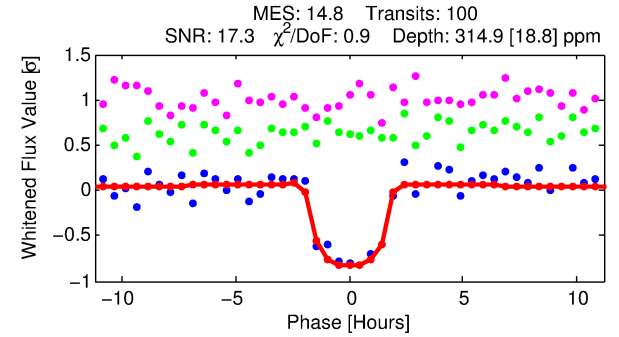
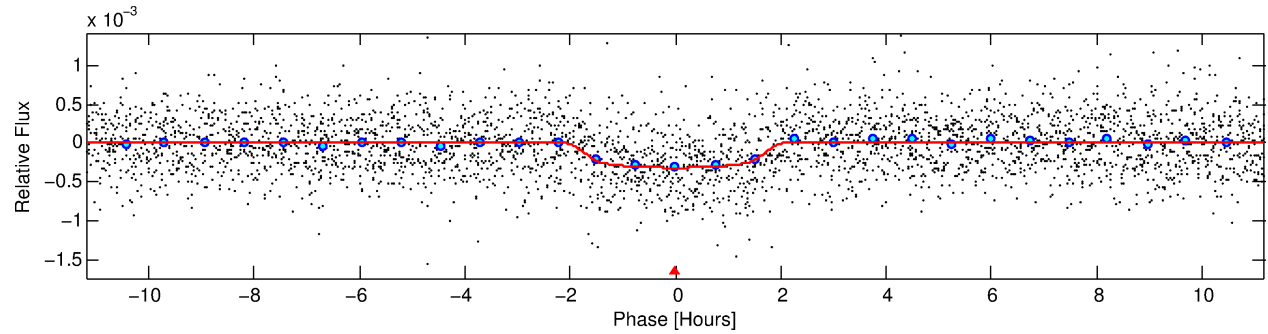
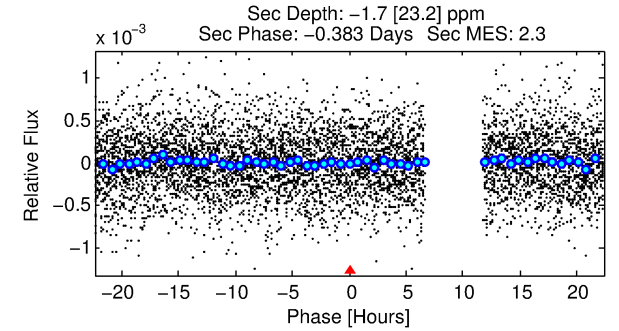
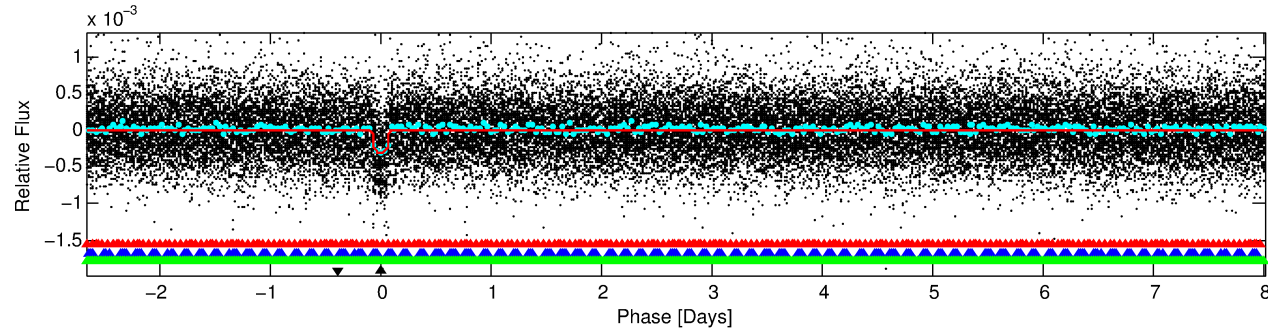
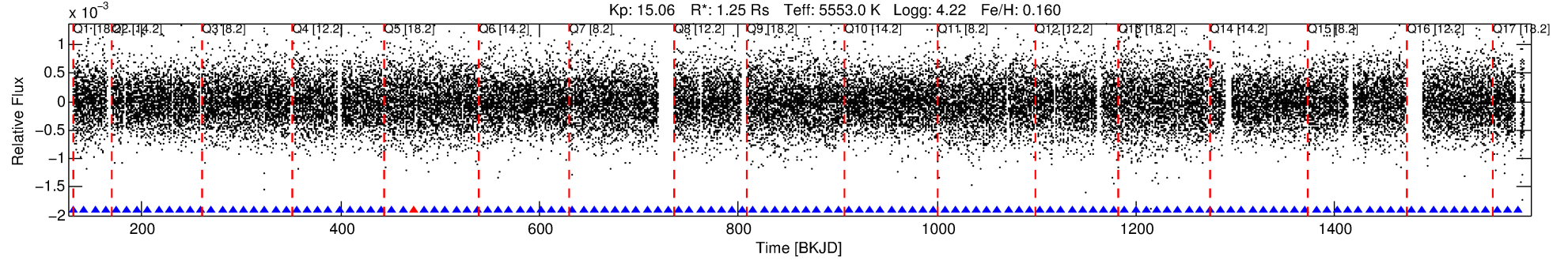
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009466668-04

No Significant Match Found

DV One-Page Summary

KIC: 9466668 Candidate: 4 of 4 Period: 10.682 d
KOI: K00939.04 Name: Kepler-256e Corr: 0.978



DV Fit Results:

Period = $10.68165 [0.00006]$ d
Epoch = $131.5548 [0.0045]$ BKJD
Rp/R* = $0.0186 [0.0079]$
a/R* = $12.42 [22.18]$
b = $0.85 [0.61]$
Seff = $153.02 [49.84]$
Teff = $897 [73]$ K
Rp = $2.54 [1.18]$ Re
a = $0.0933 [0.0180]$ AU
Ag = N/A
Teffp = N/A

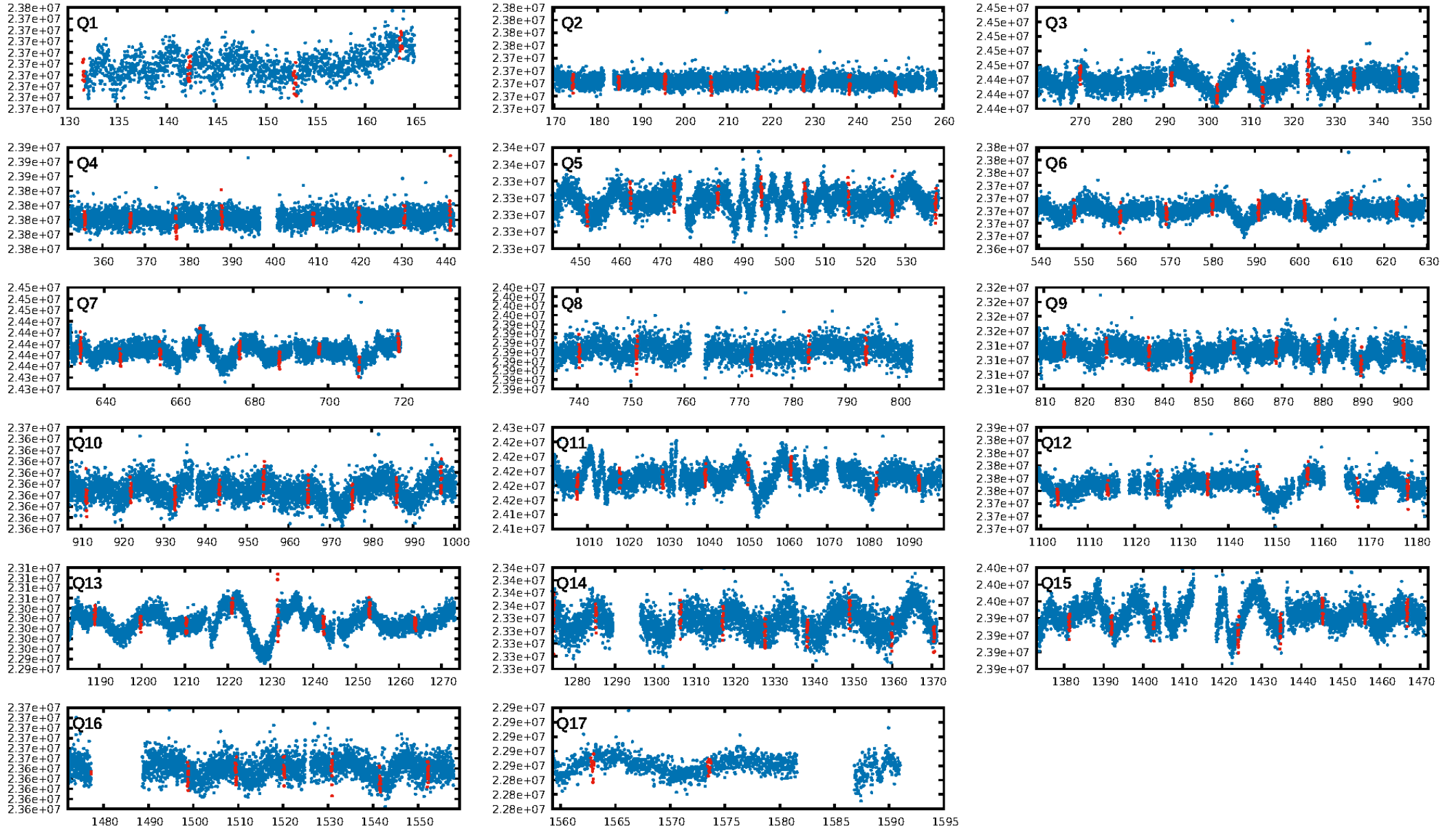
DV Diagnostic Results:

ShortPeriod-sig: $100.0\% [23.40\sigma]$
LongPeriod-sig: N/A
ModelChiSquare2-sig: 86.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: $1.01e-46$
RollingBand-fgt: $0.99 [94/95]$
GhostDiagnostic-chr: -59.56
Centroid-sig: 40.7%
Centroid-so: 0.450 arcsec $[0.65\sigma]$
OotOffset-rm: 0.686 arcsec $[1.63\sigma]$
KicOffset-rm: 0.674 arcsec $[1.59\sigma]$
OotOffset-st: $3/3/4/4 [14]$
KicOffset-st: $3/3/4/4 [14]$
DiffImageQuality-fgm: $0.43 [6/14]$
DiffImageOverlap-fno: $0.94 [16/17]$

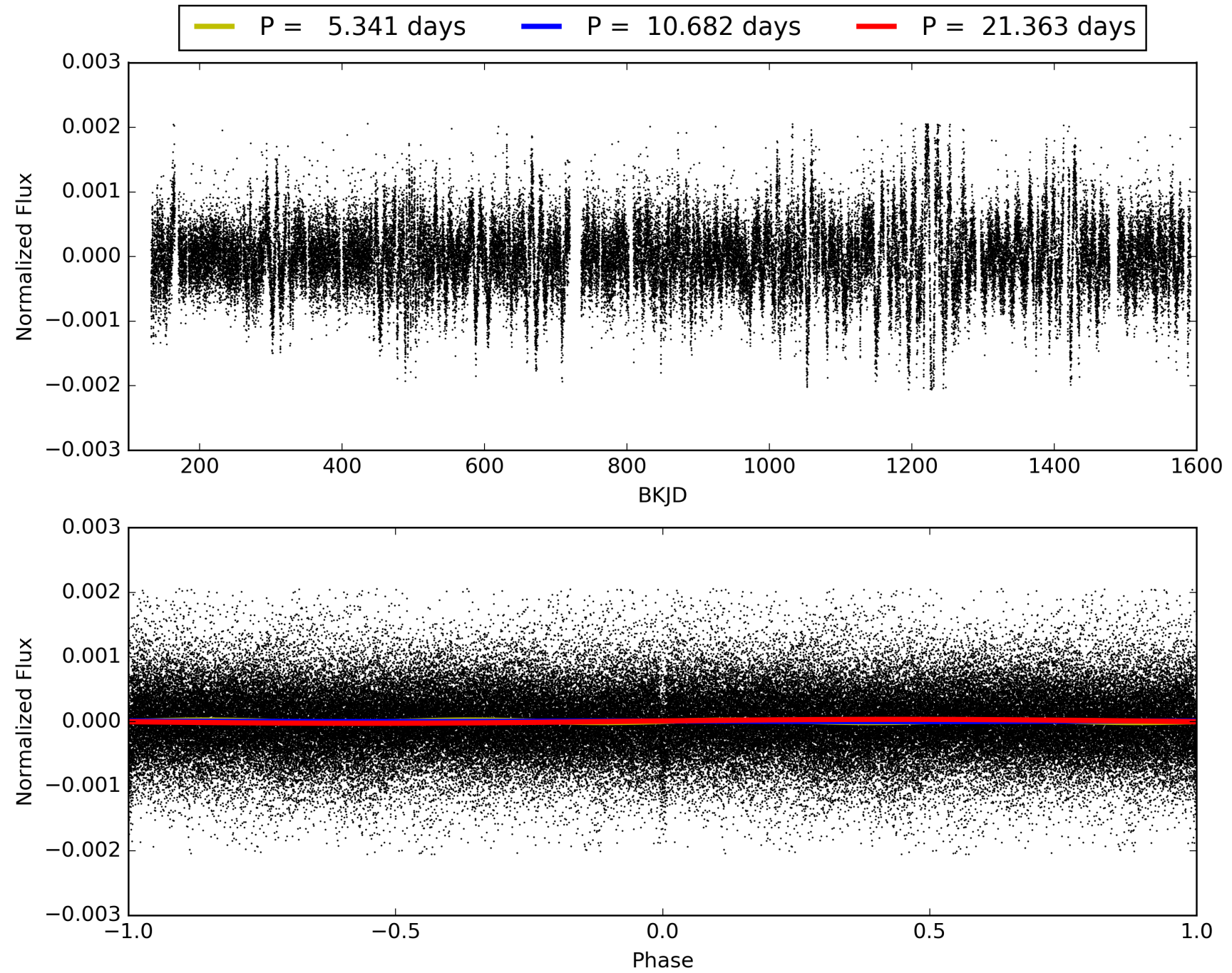
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:58:07 Z

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

TCE 009466668-04, PDC Light Curves

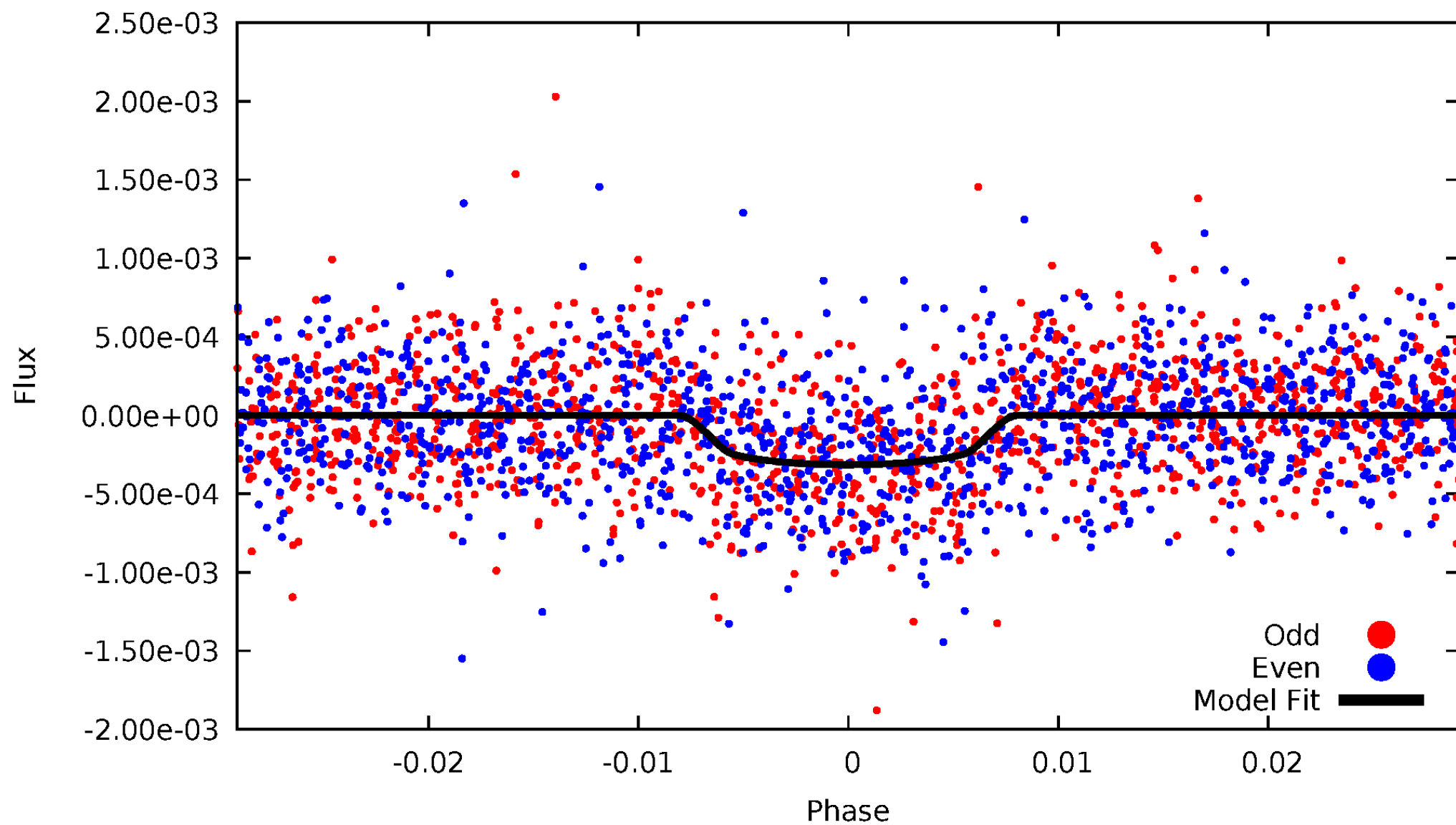


TCE 009466668-04



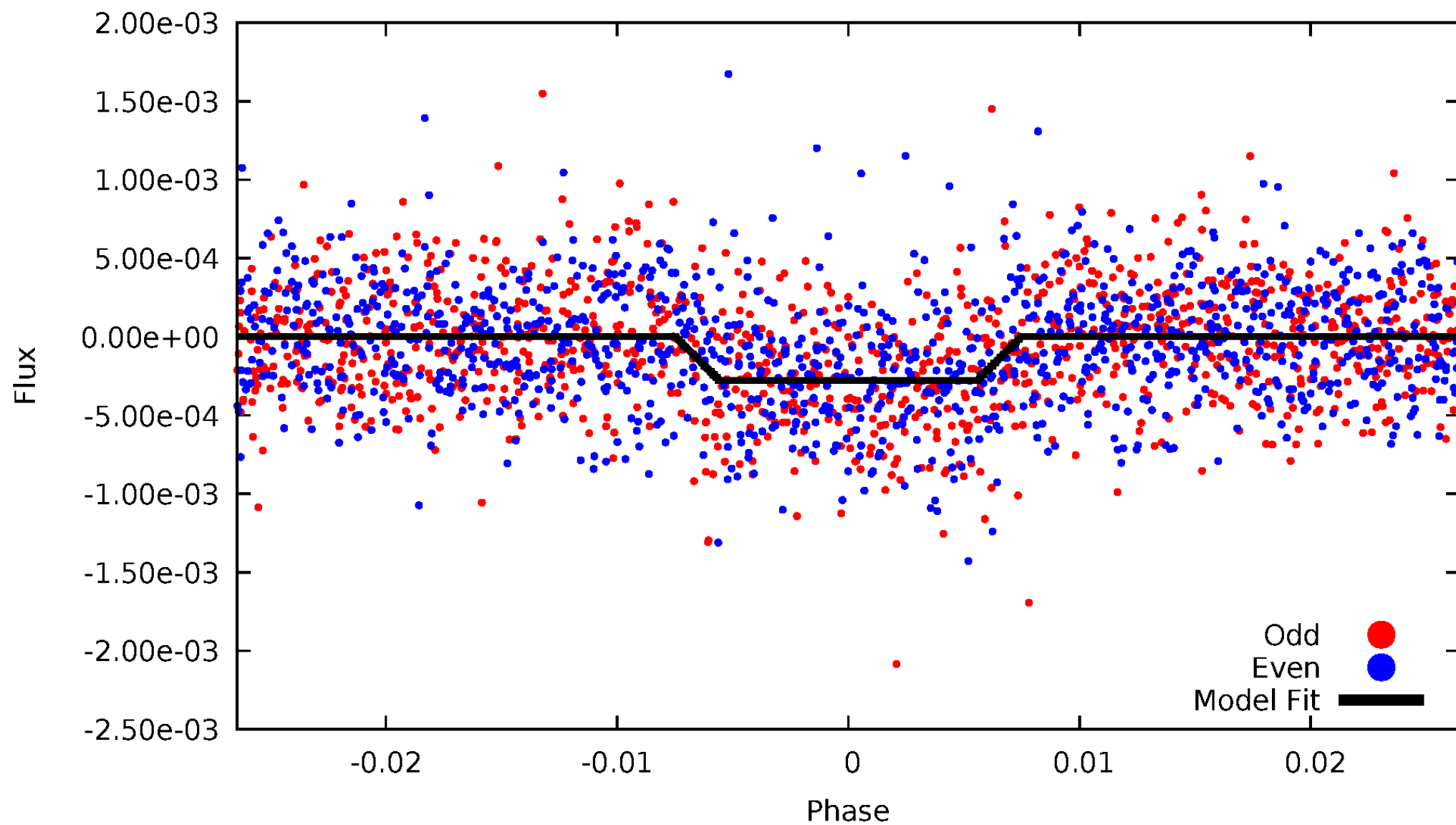
DV Odd/Even

TCE 009466668-04



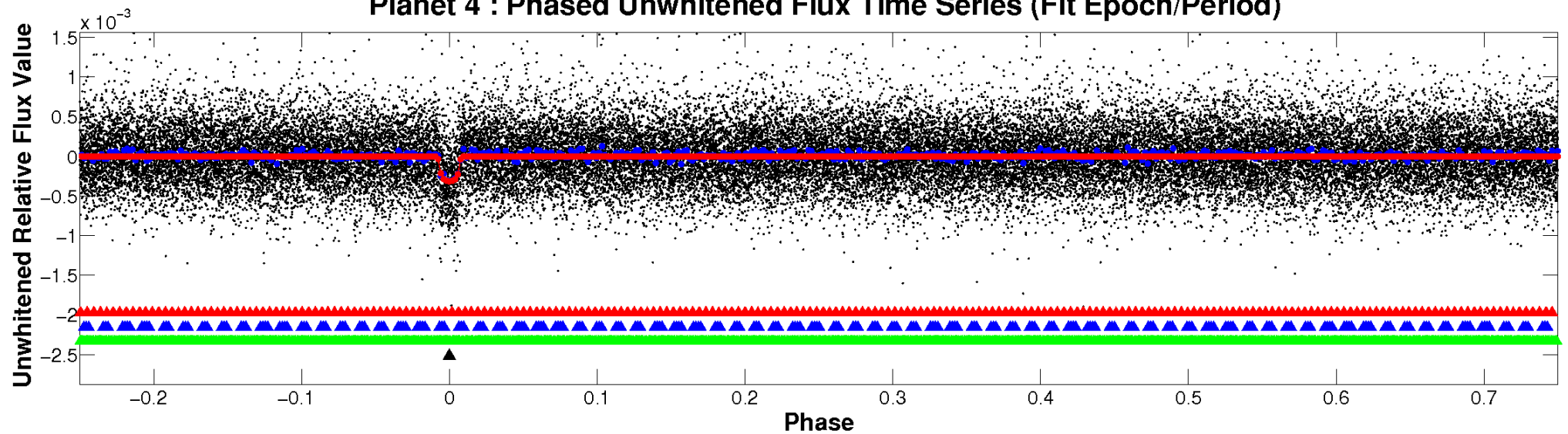
ALT Odd/Even

TCE 009466668-04

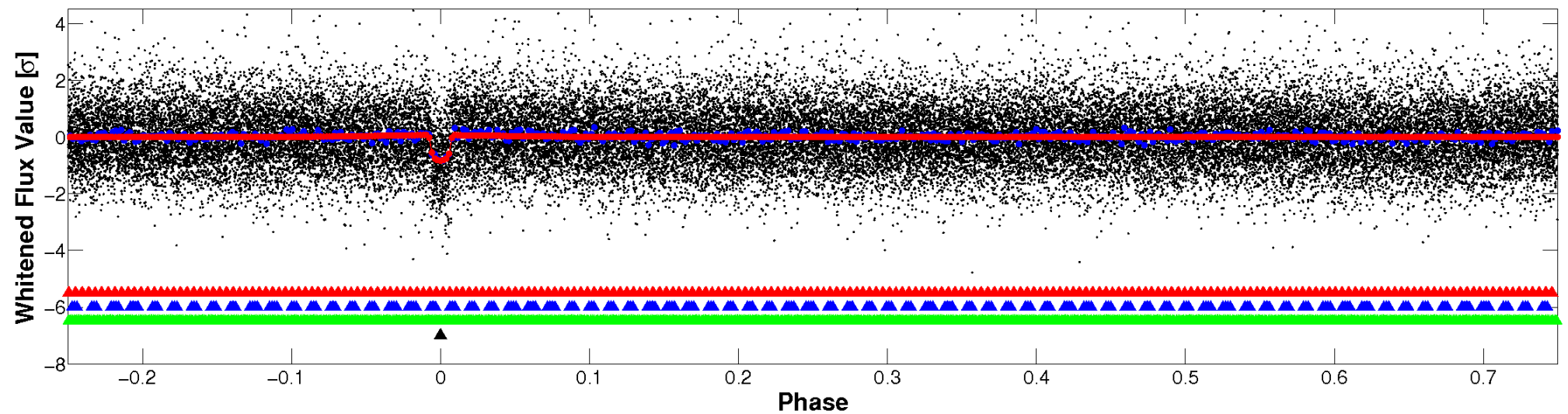


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

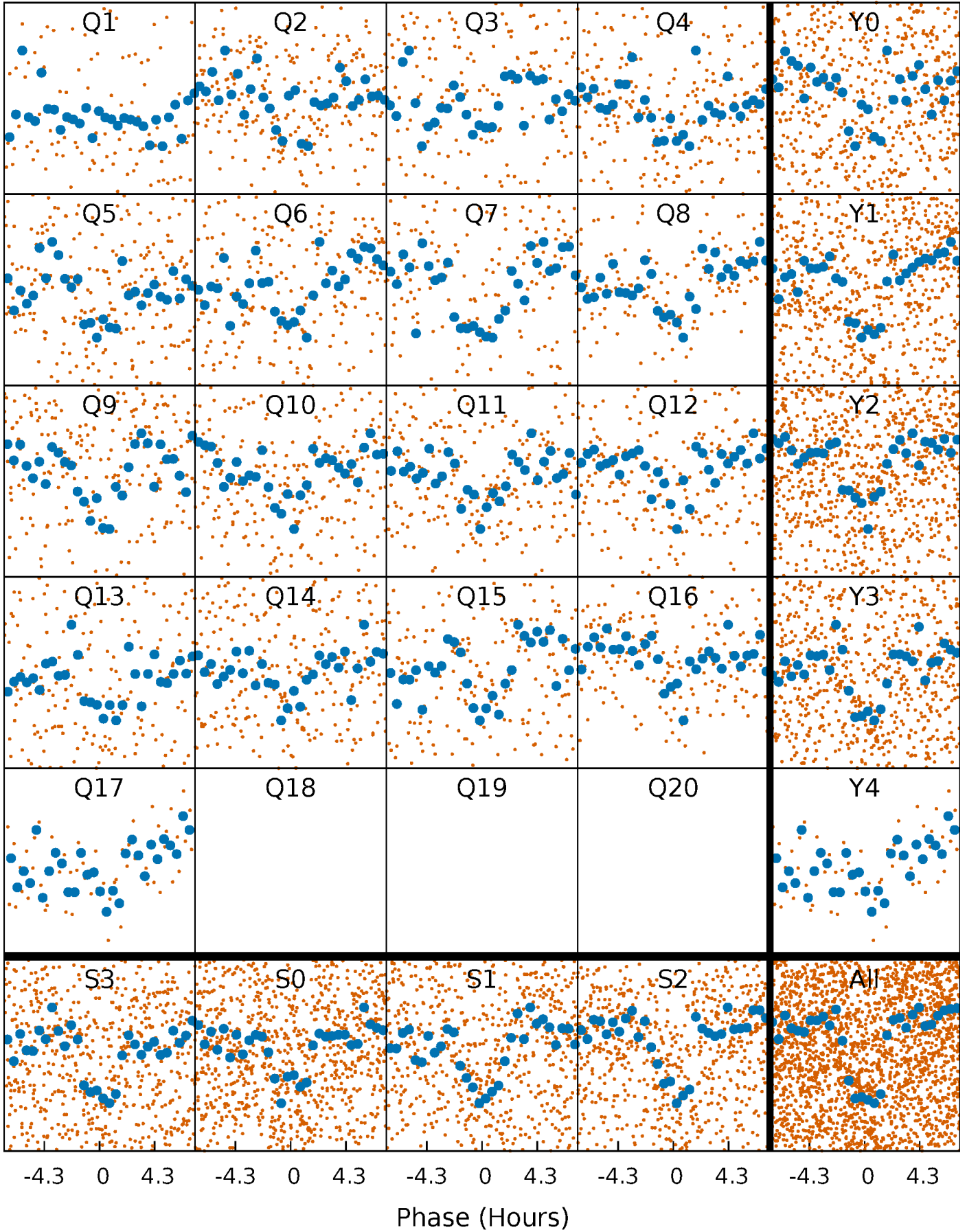


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



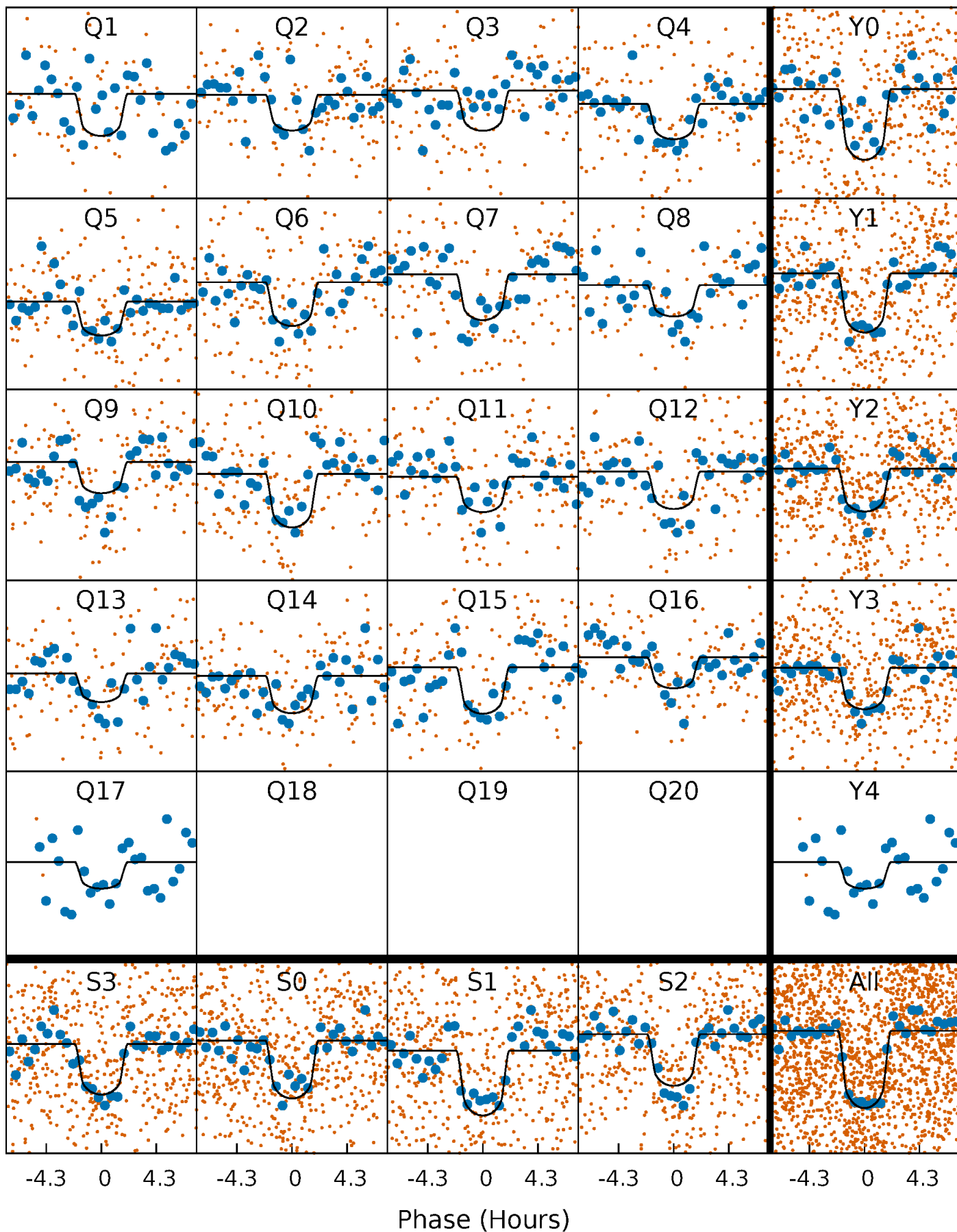
PDC Quarter-Phased Transit Curves

TCE 009466668-04 P= 10.681649 Days $T_0=131.554770$ (BKJD)



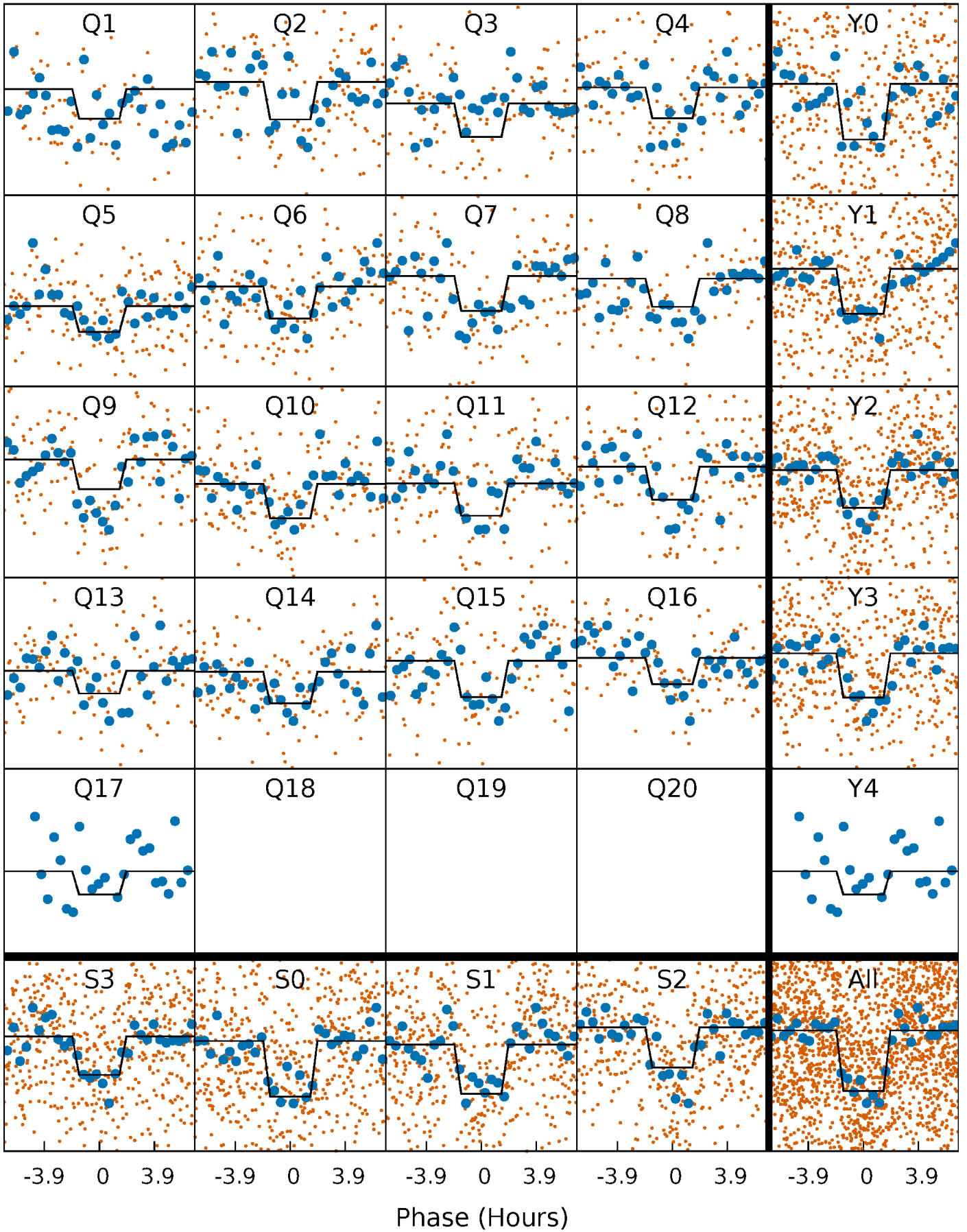
DV Quarter-Phased Transit Curves

TCE 009466668-04 P= 10.681649 Days $T_0=131.554770$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

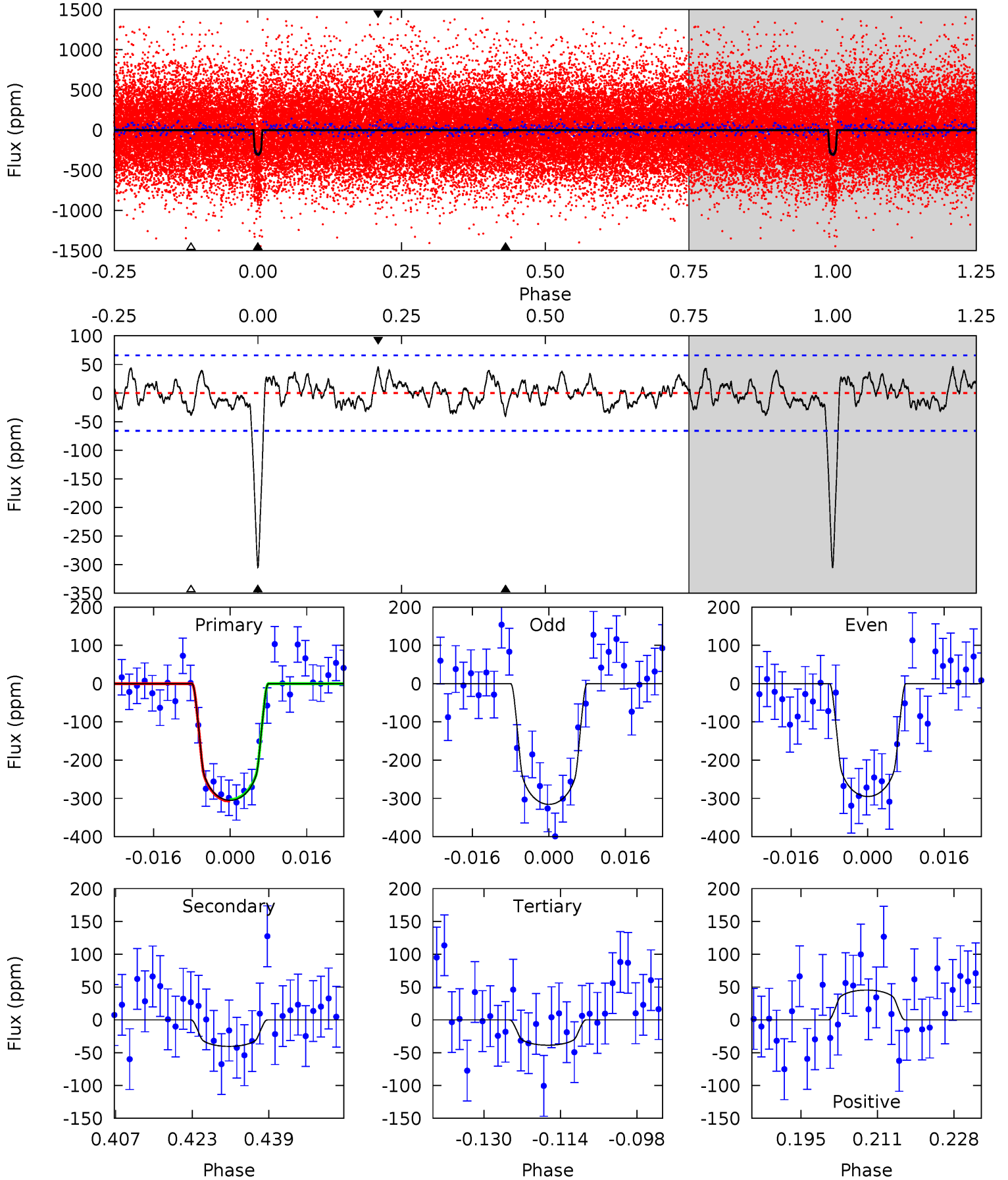
TCE 009466668-04 P= 10.681537 Days $T_0=131.558694$ (BKJD)



DV Model-Shift Uniqueness Test

009466668-04, P = 10.681649 Days, E = 120.873121 Days

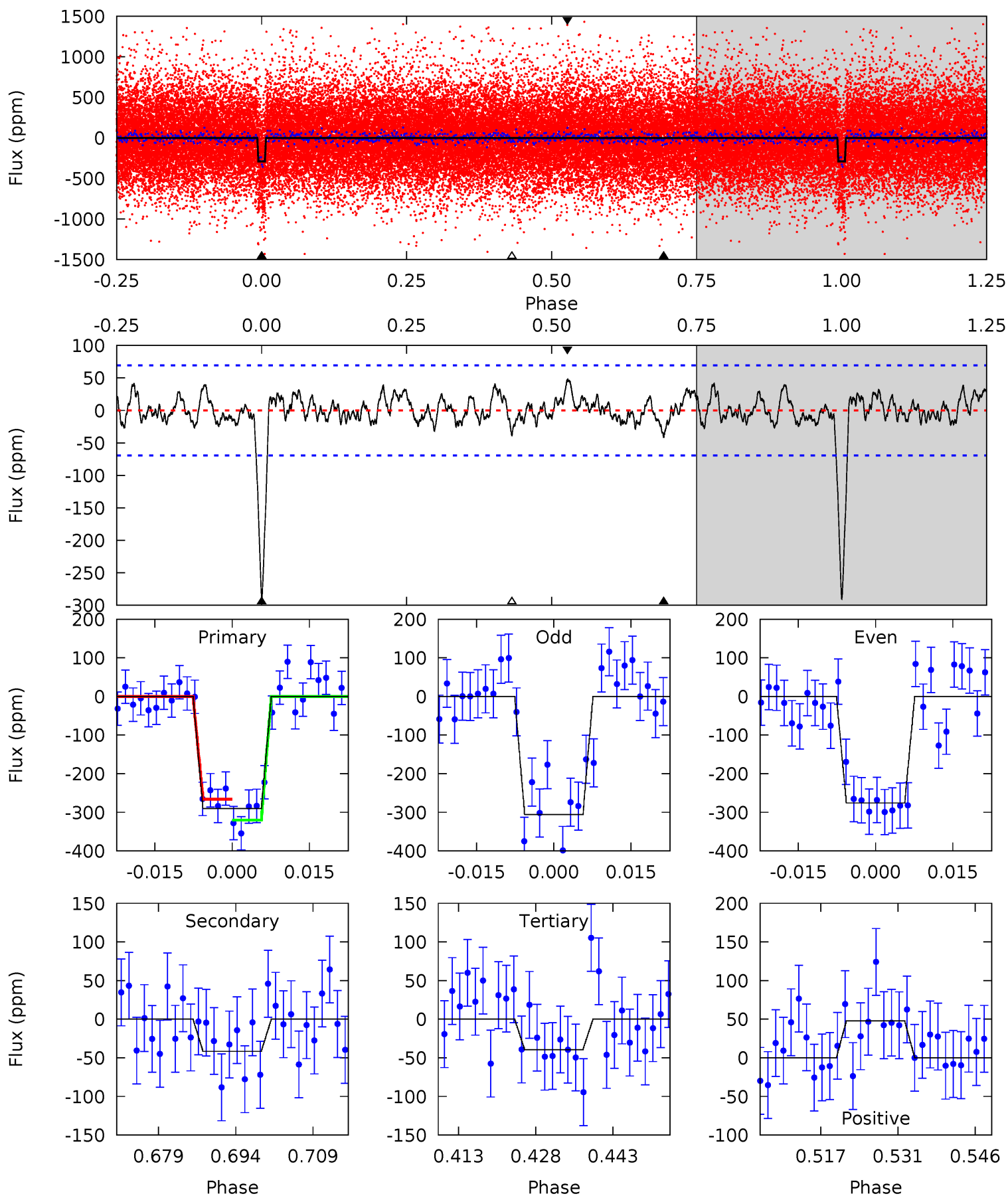
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	3.03	2.89	3.40	4.93	2.40	1.31	19.9	19.4	0.14	-0.37	0.77	0.91	0.13	0.15



Alt Model-Shift Uniqueness Test

009466668-04, P = 10.681537 Days, E = 120.877157 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	2.97	2.82	3.42	4.95	2.44	1.15	17.9	17.3	0.15	-0.45	1.08	0.96	0.14	1.92



Stellar Parameters For KIC 009466668

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5553^{+111}_{-1}	$4.221^{+0.188}_{-0.101}$	$0.160^{+0.150}_{-0.150}$	$1.250^{+0.196}_{-0.240}$	$0.949^{+0.080}_{-0.046}$	$0.685^{+0.647}_{-0.229}$
	+2%/-0%	+4%/-2%	+94%/-94%	+16%/-19%	+8%/-5%	+95%/-33%
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 009466668-04 / KOI 0939.04

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-40 ± 13	$2.49^{+1.15}_{-1.07}$	1237^{+67}_{-79}	3620^{+784}_{-451}	31^{+62}_{-19}
Alt.	-42 ± 14	$2.17^{+1.15}_{-1.00}$	1236^{+65}_{-76}	3825^{+990}_{-521}	42^{+110}_{-25}

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

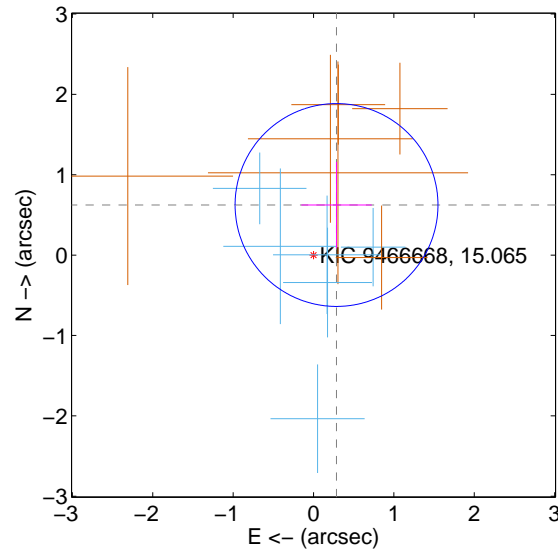
Supplemental centroid analysis for 009466668-04. Kepler magnitude: 15.06. Transit SNR 17.30

There are 6 quarters with good PRF difference image offsets

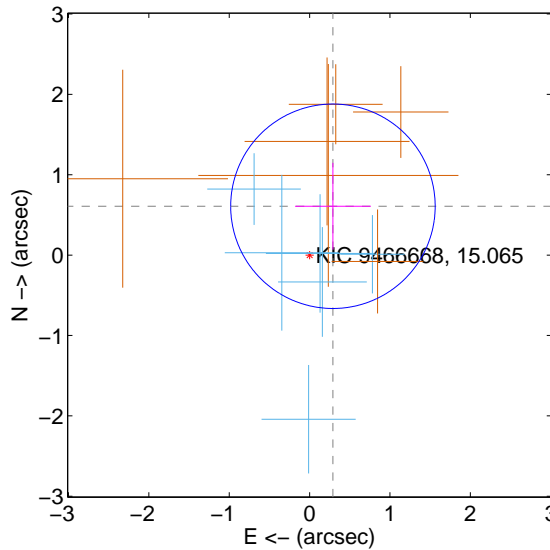
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.686 ± 0.421	1.63	-0.286 ± 0.439	0.623 ± 0.538
PRF-fit source offset from KIC position	0.674 ± 0.424	1.59	-0.290 ± 0.472	0.608 ± 0.540
photometric centroid source offset	0.45 ± 0.69	0.65	0.28 ± 0.66	0.35 ± 0.70

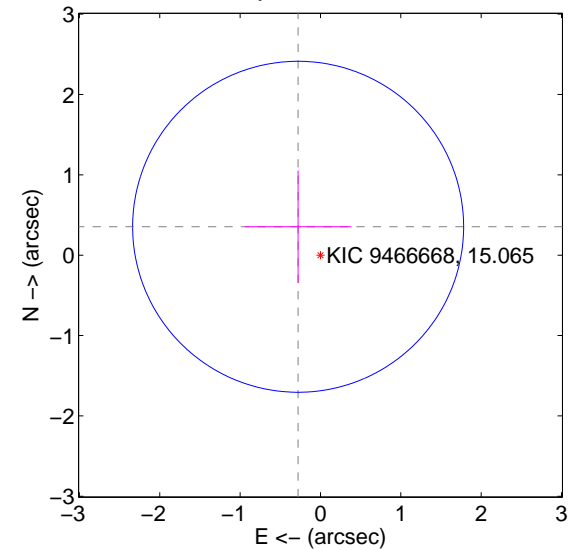
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

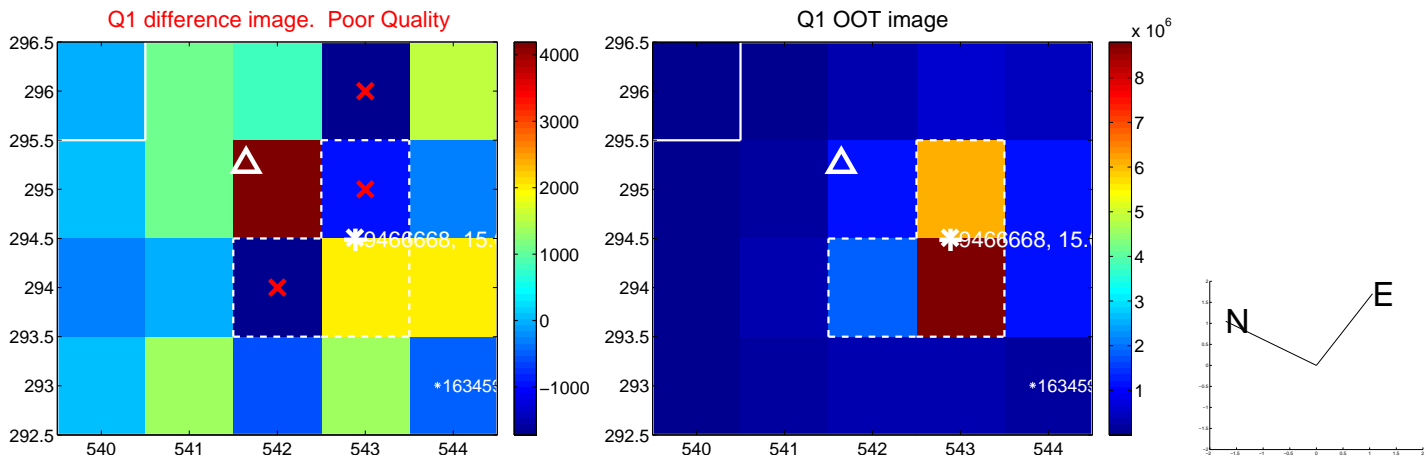


offset from photometric centroids

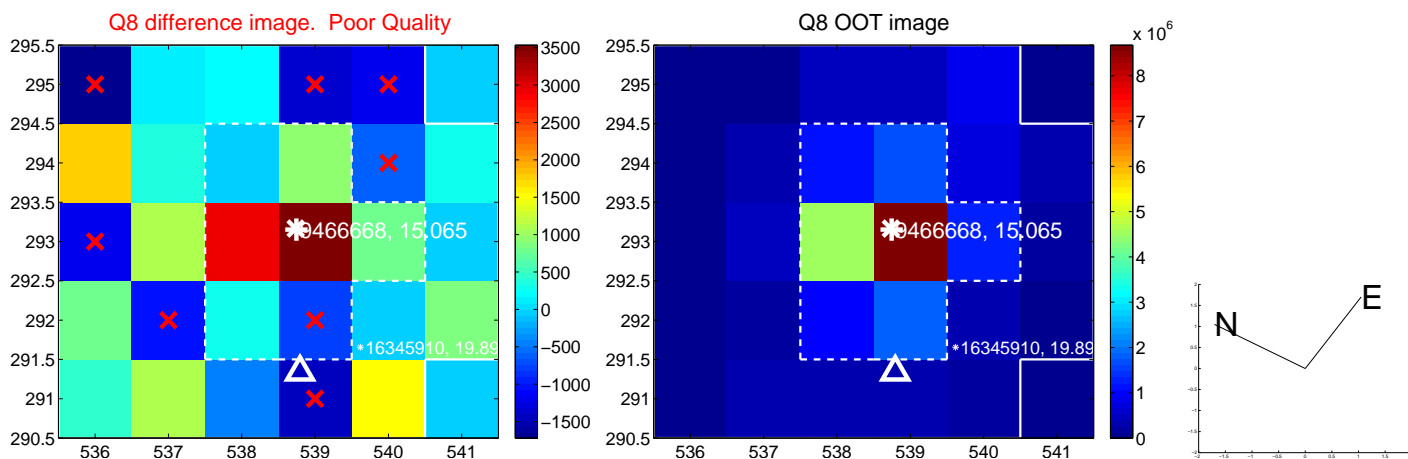
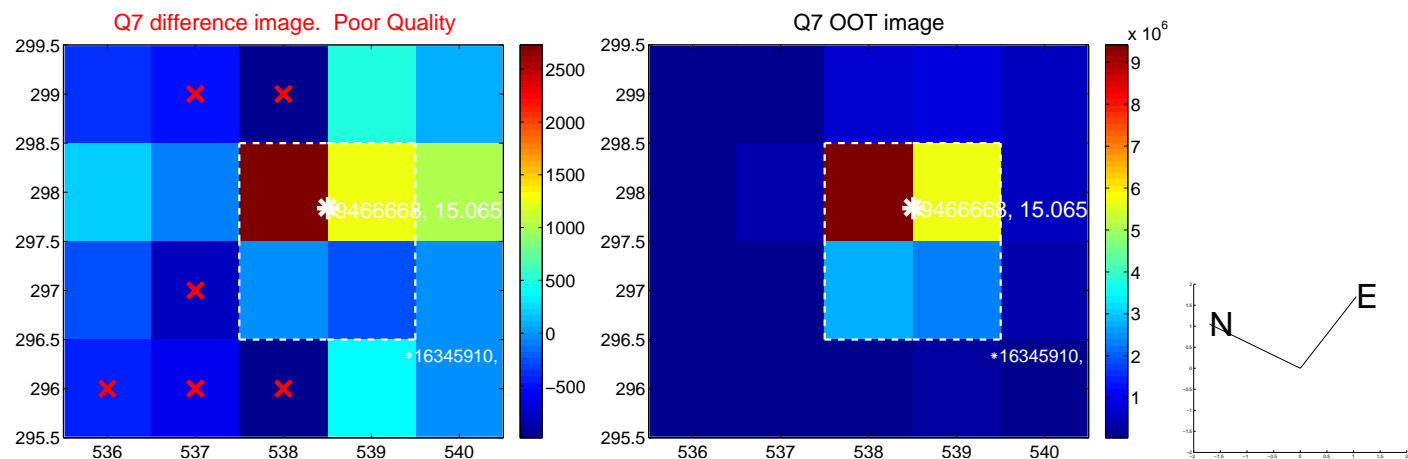
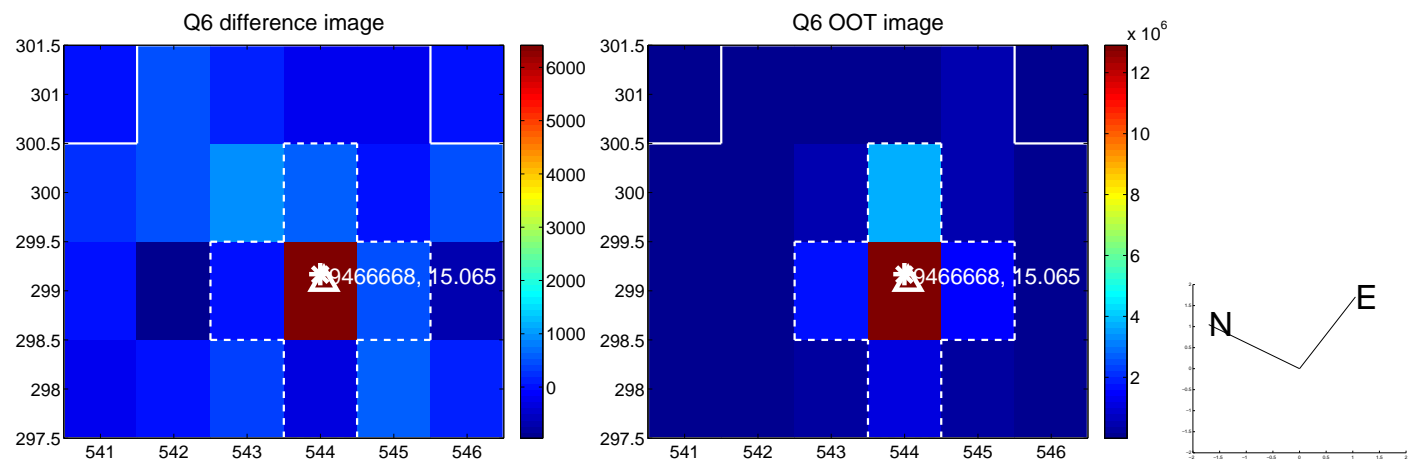
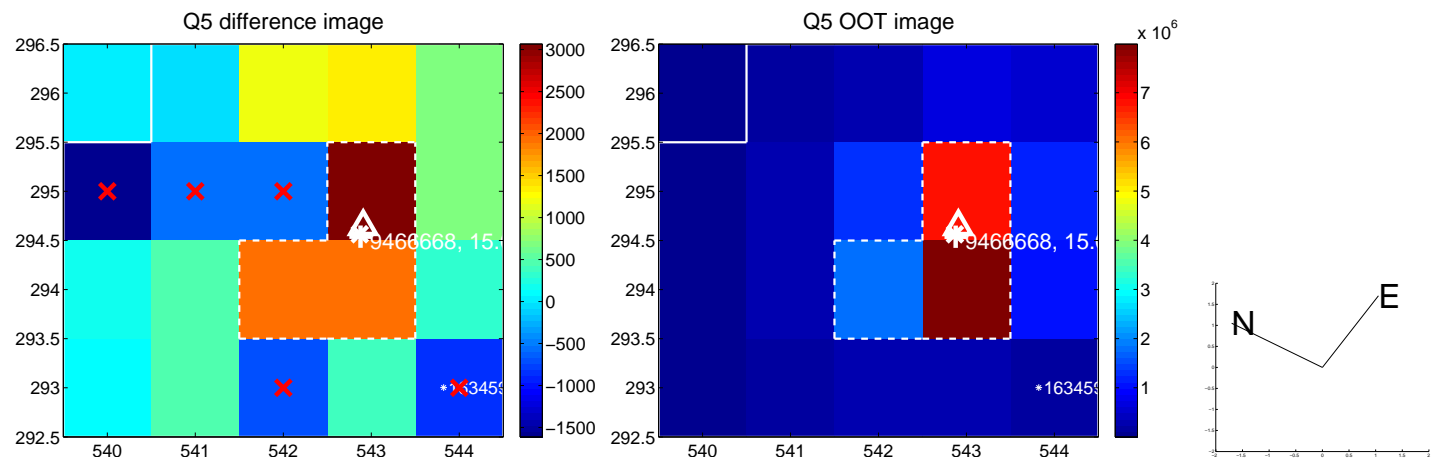


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

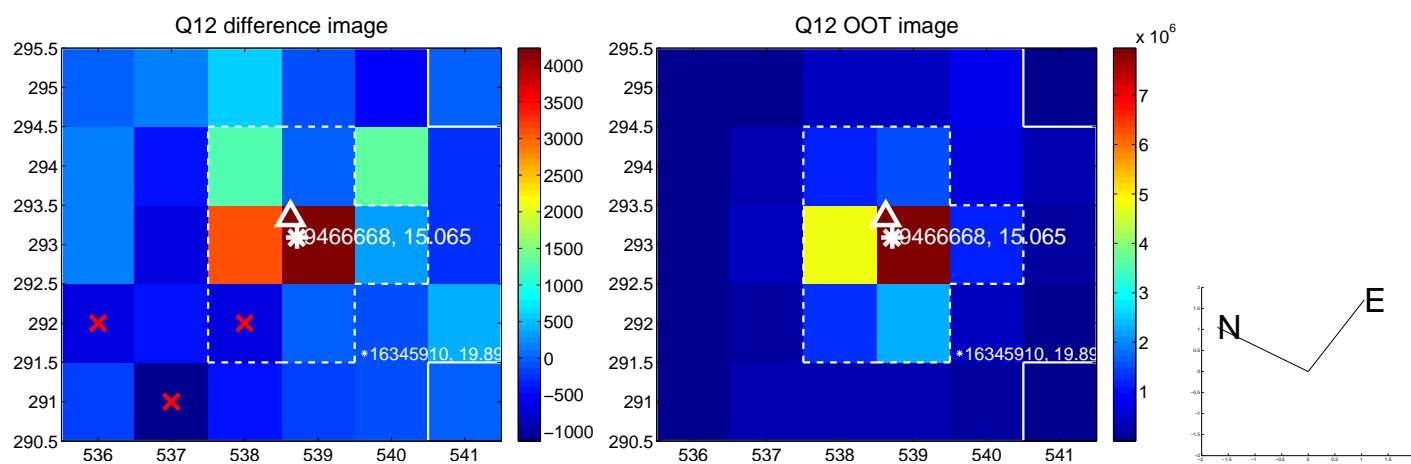
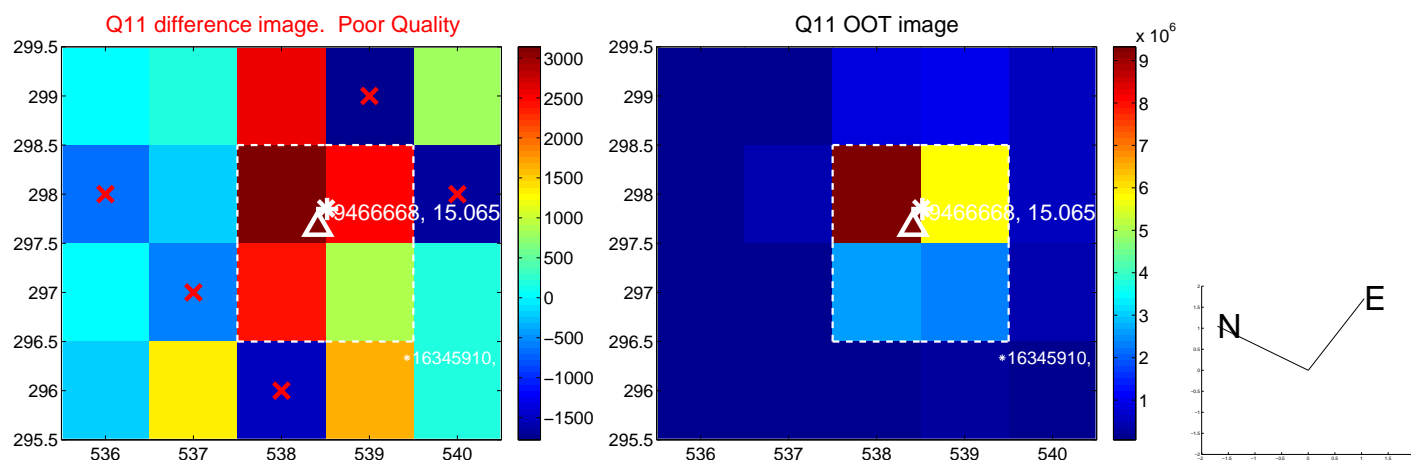
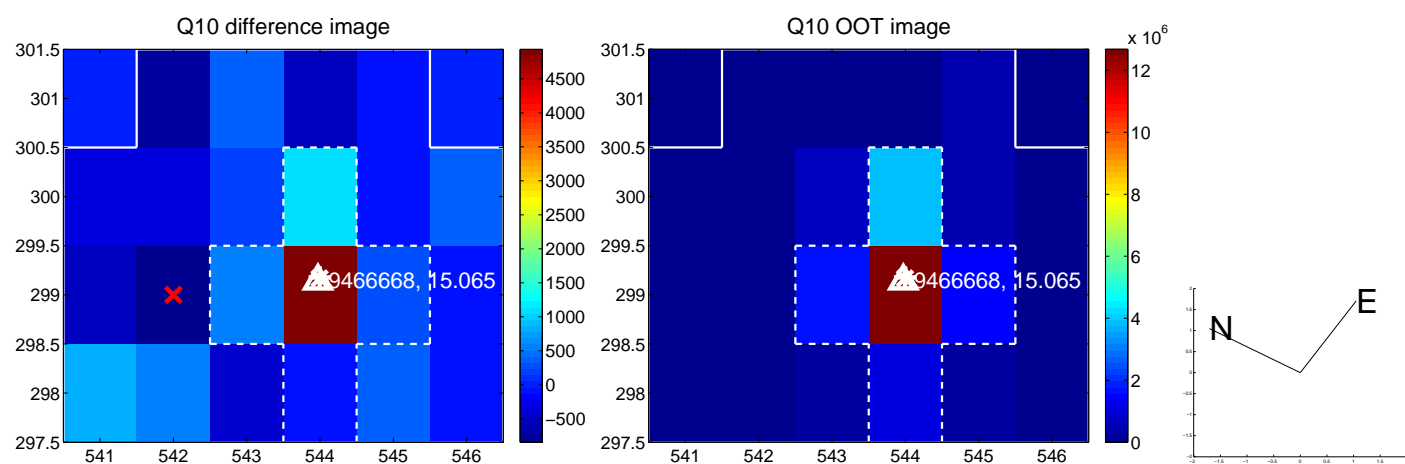
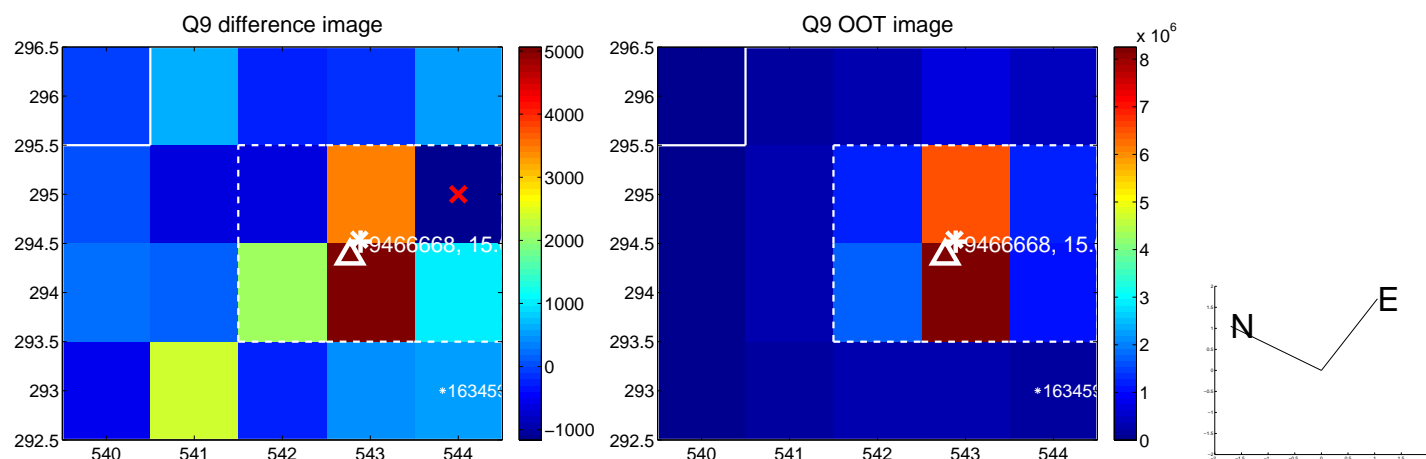
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



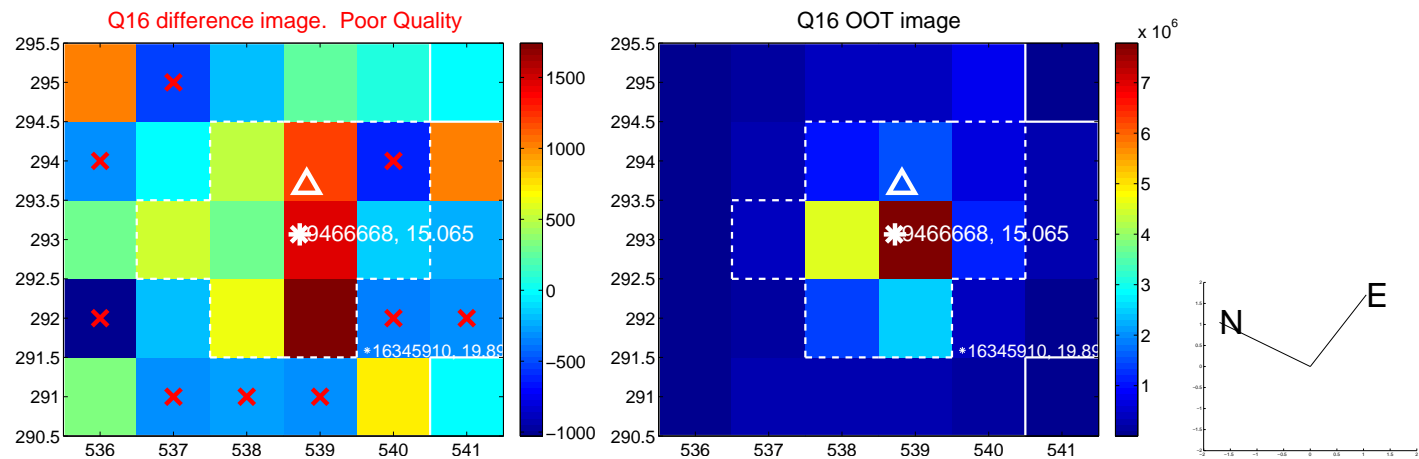
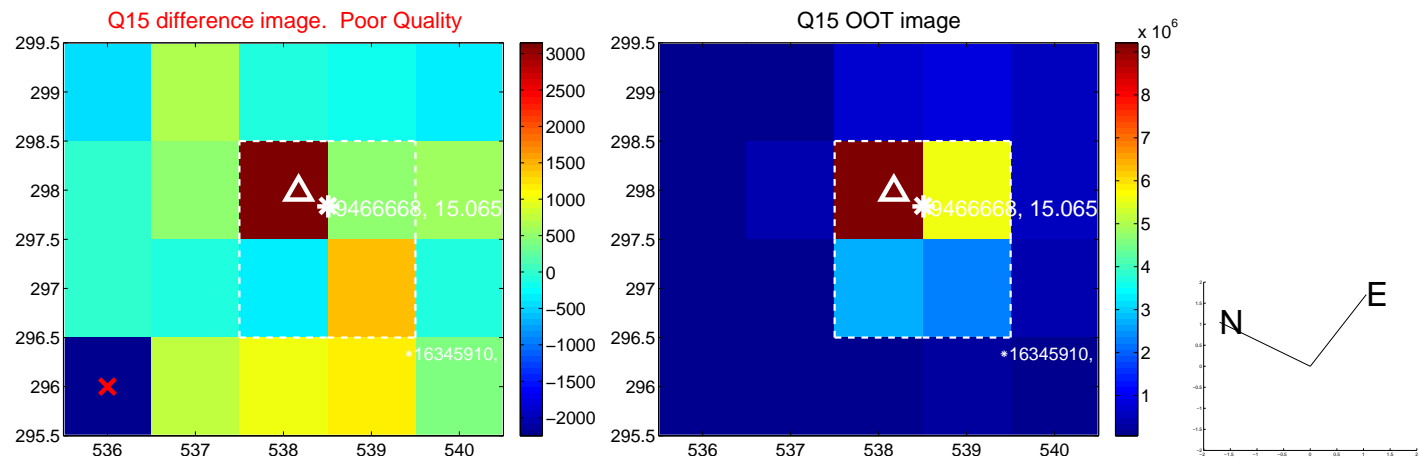
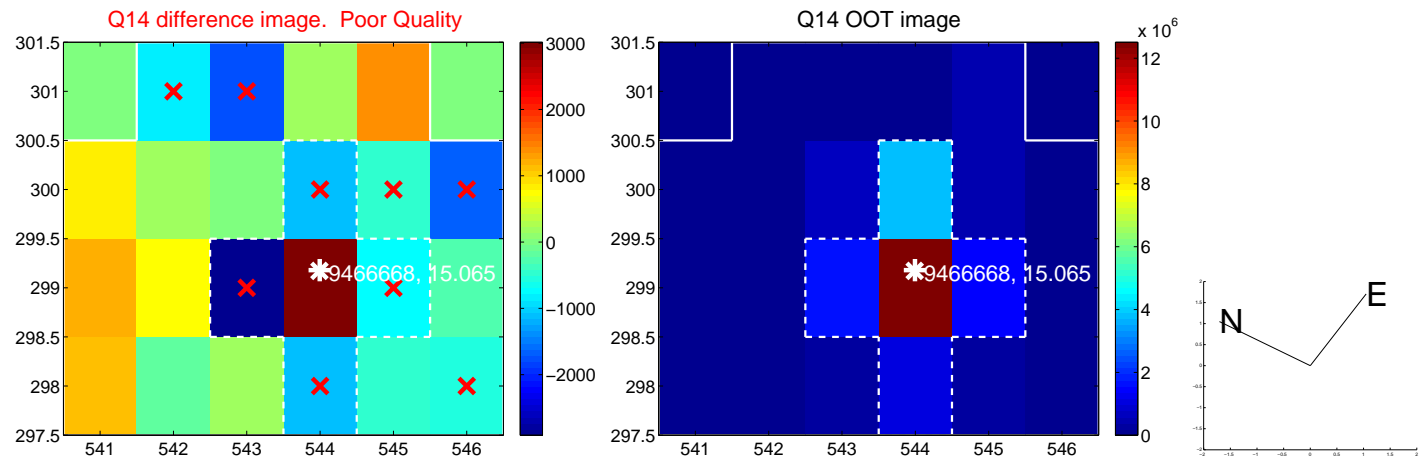
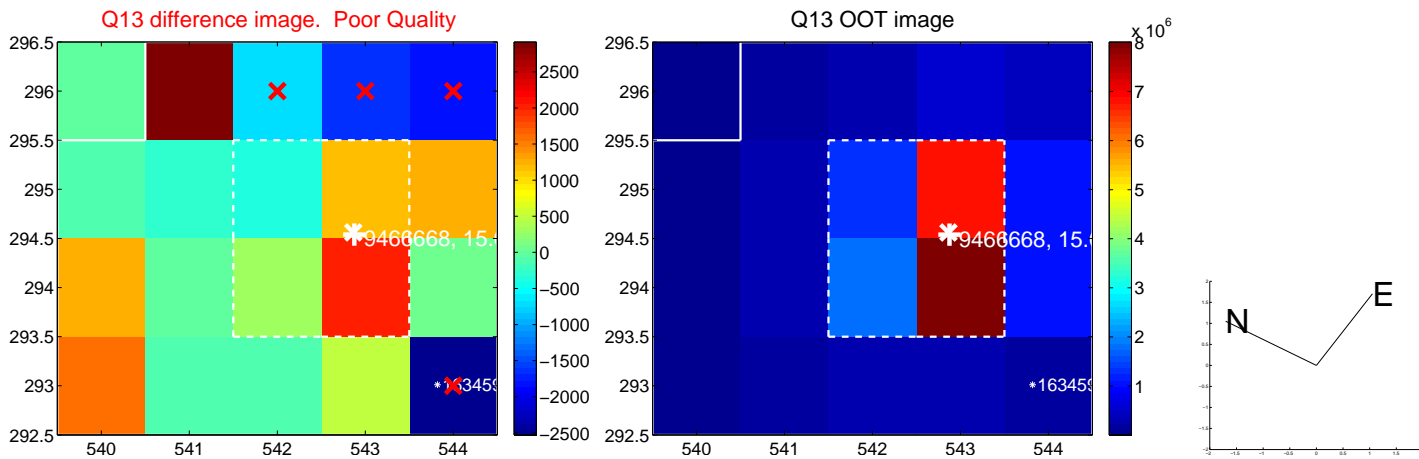
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



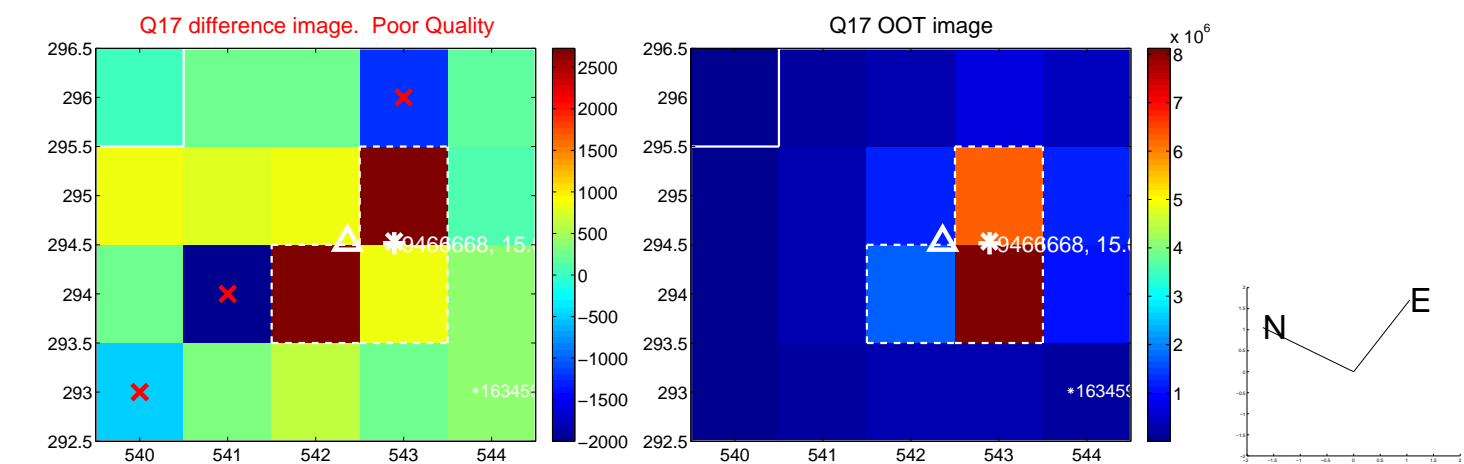
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



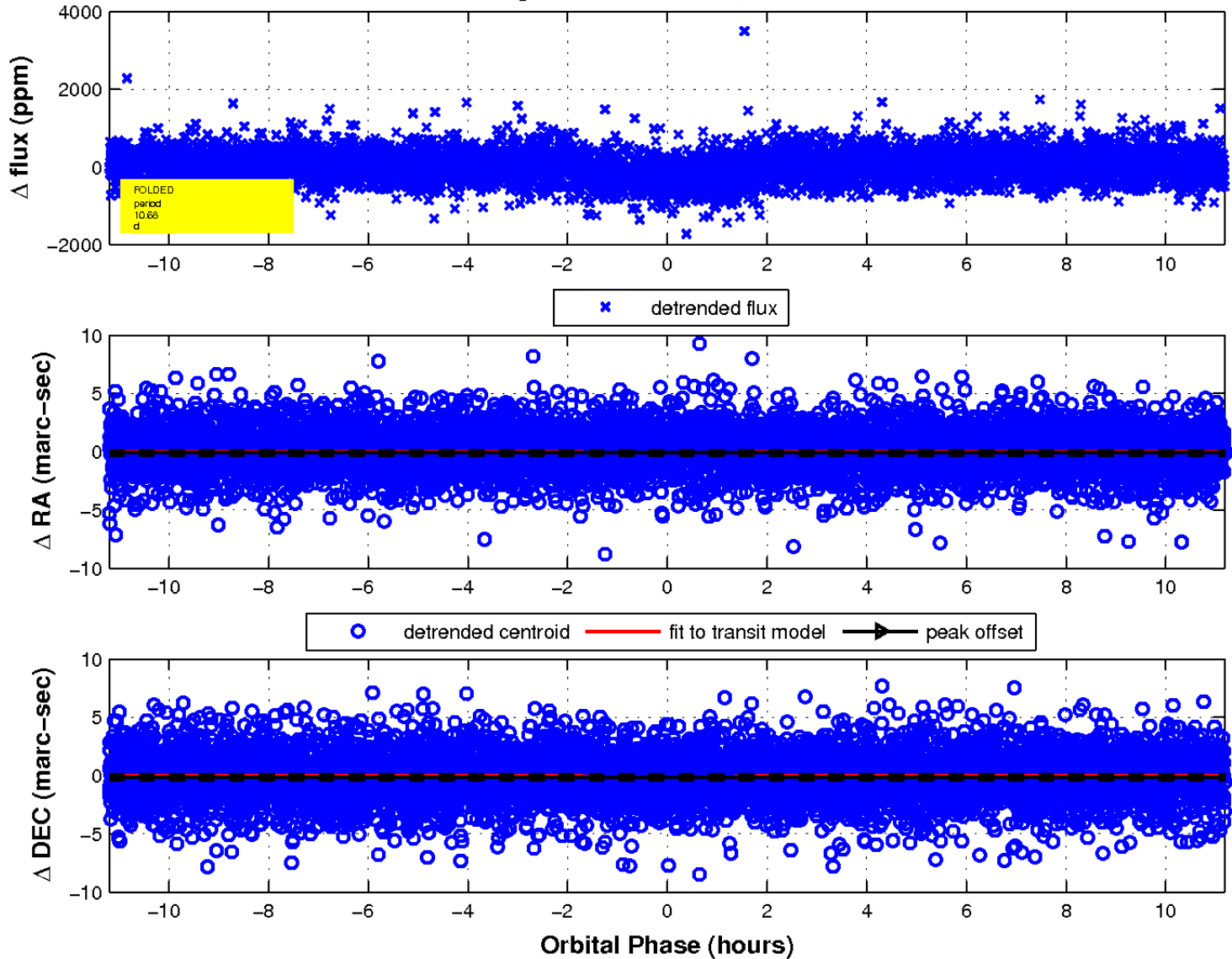
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

