

KIC 003218908

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})
003218908-01	OBS	1108.01	18.925401	149.494255	621.0	3.989	33.5	35.7	4.88	4941	13.95	444.63
003218908-02	OBS	No	412.312499	354.367938	326.5	20.433	34.1	5.5	4.88	4941	9.05	7.31
003218908-03	OBS	1108.02	1.475304	131.838288	121.8	2.325	21.0	20.1	4.88	4941	6.57	13352.26
003218908-04	OBS	1108.03	4.152456	134.578583	198.7	2.635	16.0	19.2	4.88	4941	7.70	3359.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003218908-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003218908-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003218908-03	OBS	PC	0.99	0	0	0	0	NO_COMMENT
003218908-04	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.

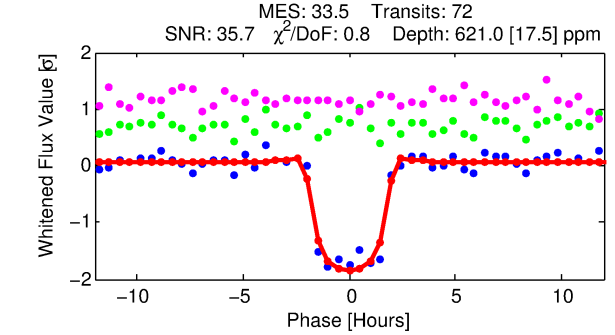
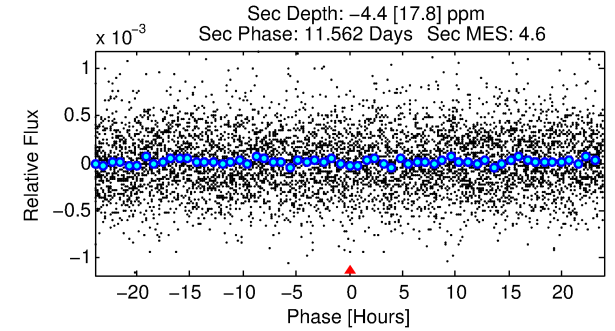
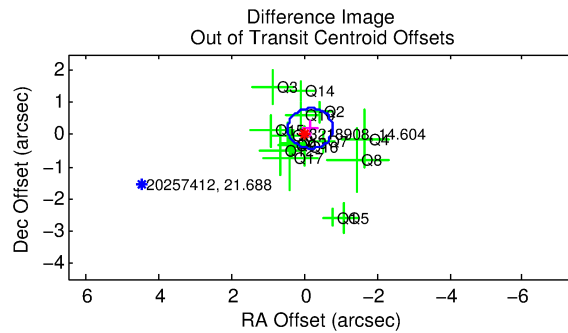
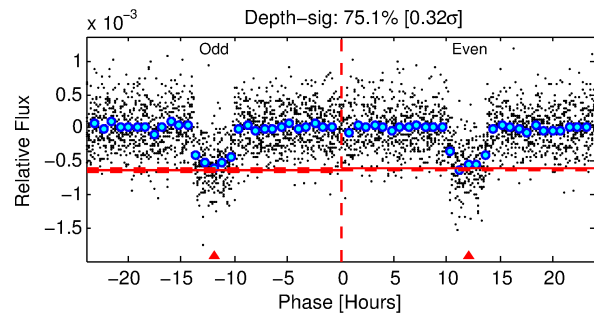
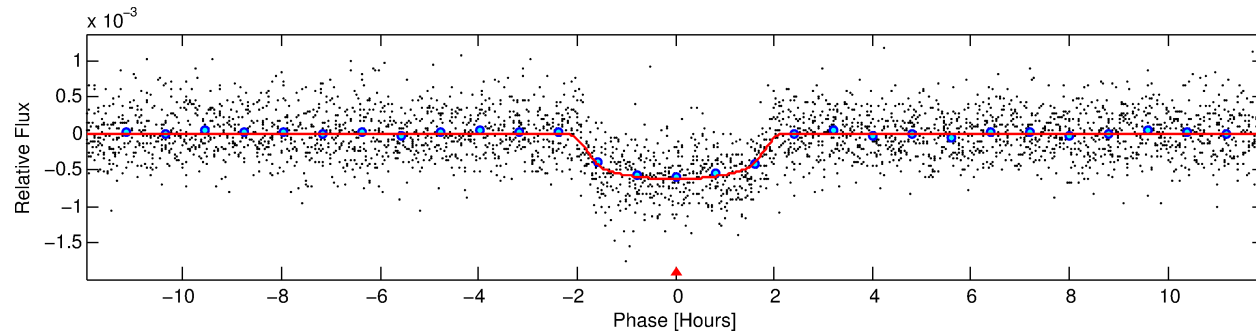
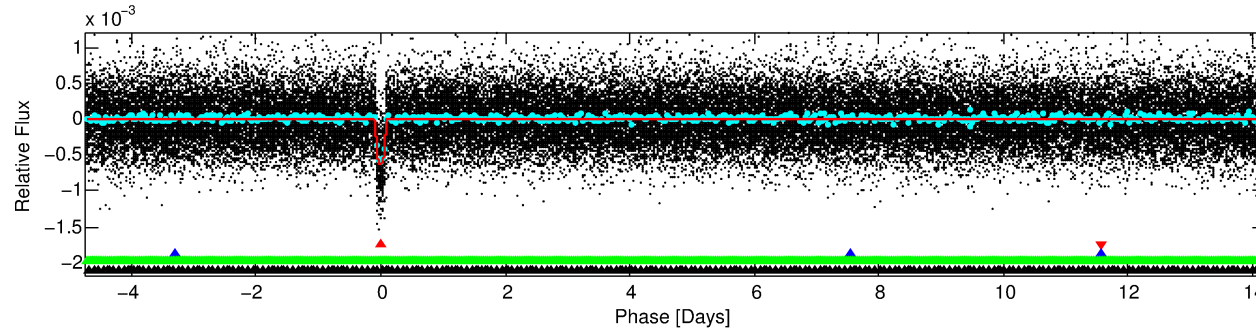
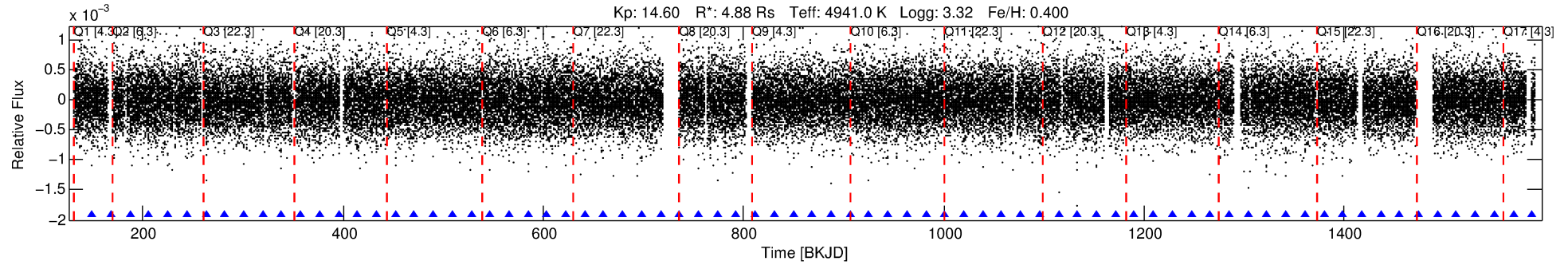
Ephemeris Match Information For 003218908-01

No Significant Match Found

DV One-Page Summary

KIC: 3218908 Candidate: 1 of 4 Period: 18.925 d

KOI: K01108.01 Corr: 0.968



DV Fit Results:

Period = 18.92540 [0.00006] d
Epoch = 149.4943 [0.0025] BKJD
Rp/R* = 0.0262 [0.0050]
a/R* = 21.89 [14.78]
b = 0.83 [0.26]
Seff = 444.63 [179.45]
Teff = 1171 [118] K
Rp = 13.95 [5.39] Re
a = 0.1693 [0.0466] AU
Ag = N/A
Teffp = N/A

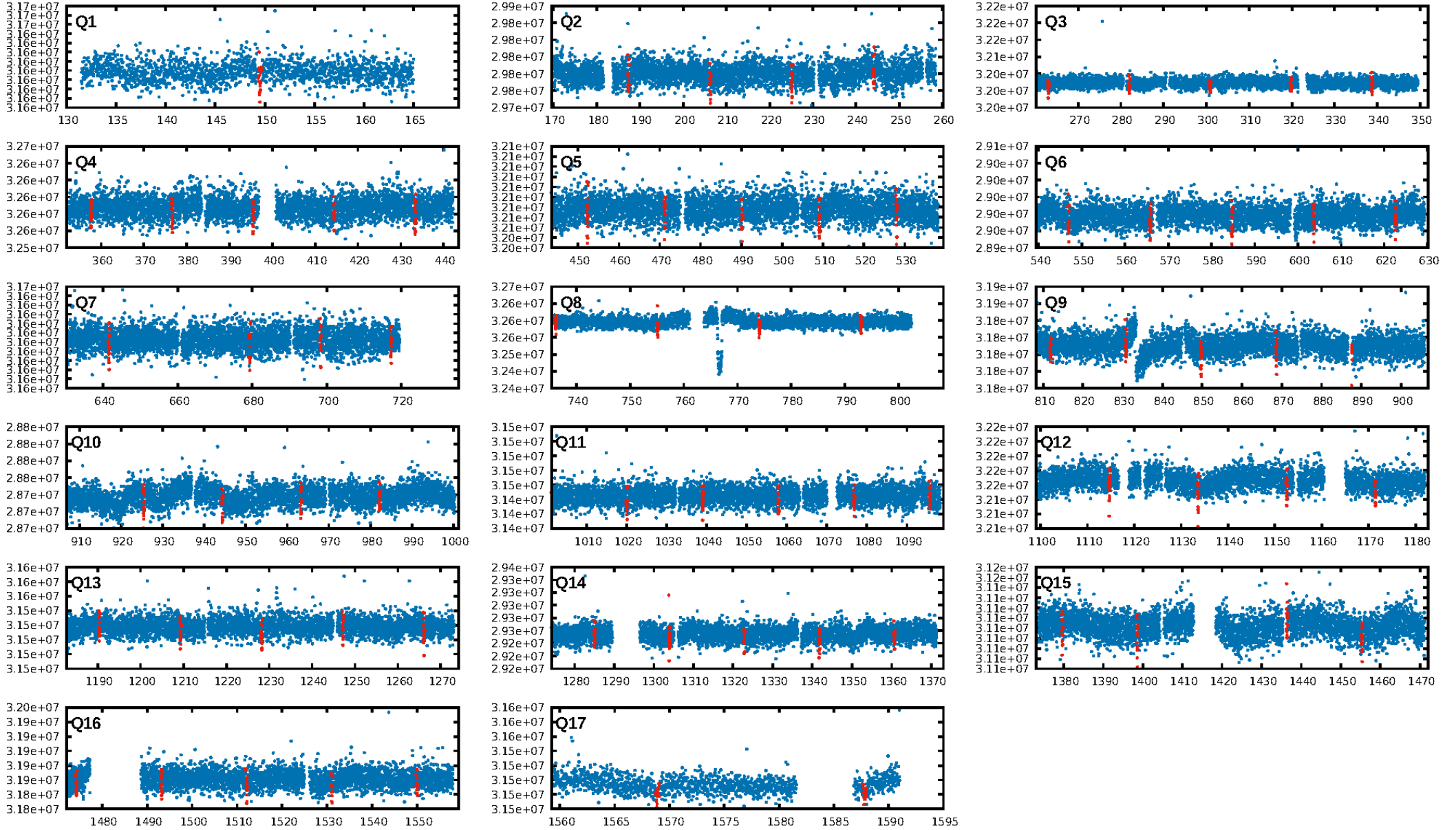
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [74.16σ]
LongPeriod-sig: 100.0% [453.49σ]
ModelChiSquare2-sig: 87.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.26e-232
RollingBand-fgt: 1.00 [69/69]
GhostDiagnostic-chr: 6.39
Centroid-sig: 0.1%
Centroid-so: 1.287 arcsec [3.19σ]
OotOffset-rm: 0.254 arcsec [1.22σ]
KicOffset-rm: 0.175 arcsec [0.72σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.82 [14/17]

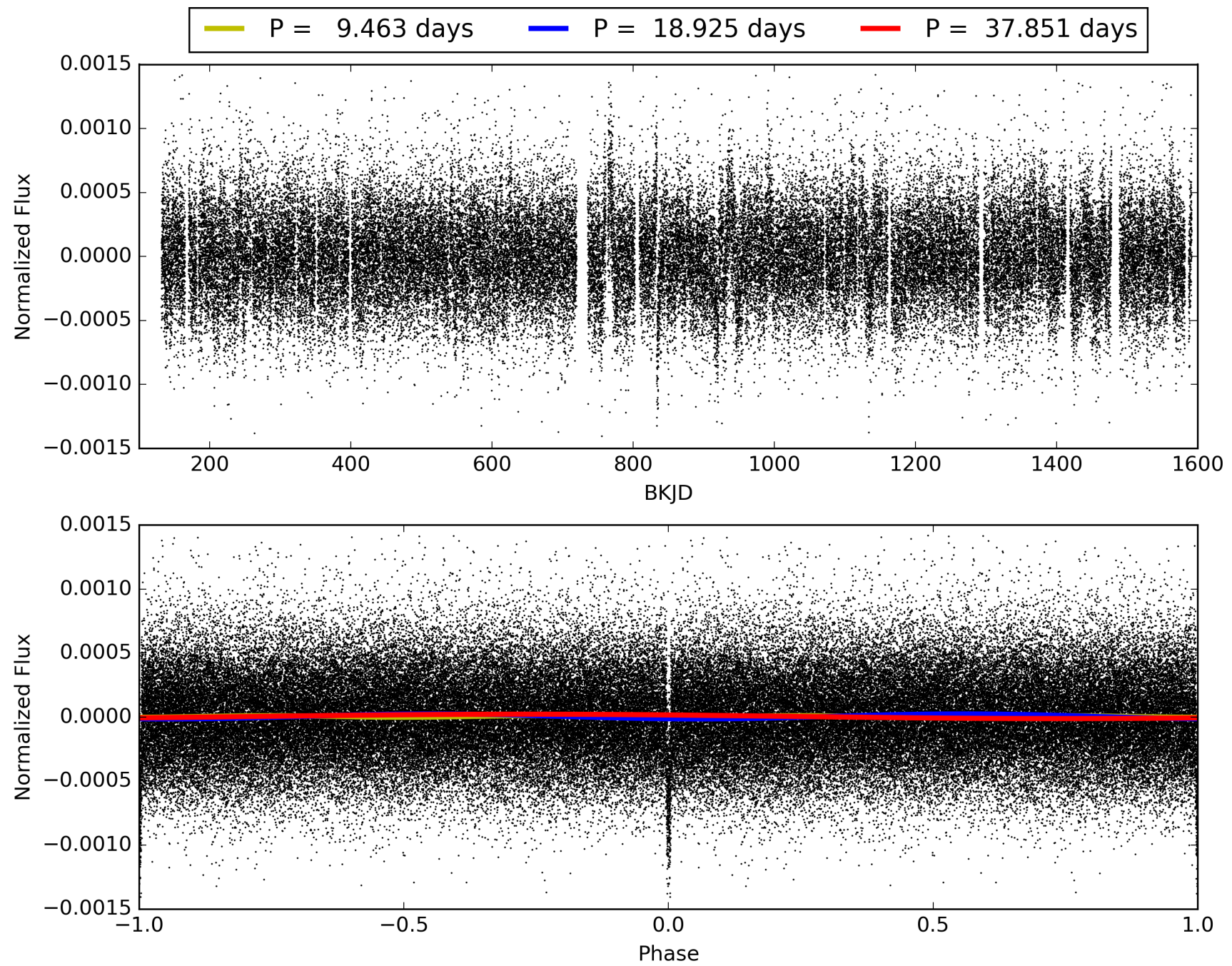
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:01:27 Z

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

TCE 003218908-01, PDC Light Curves

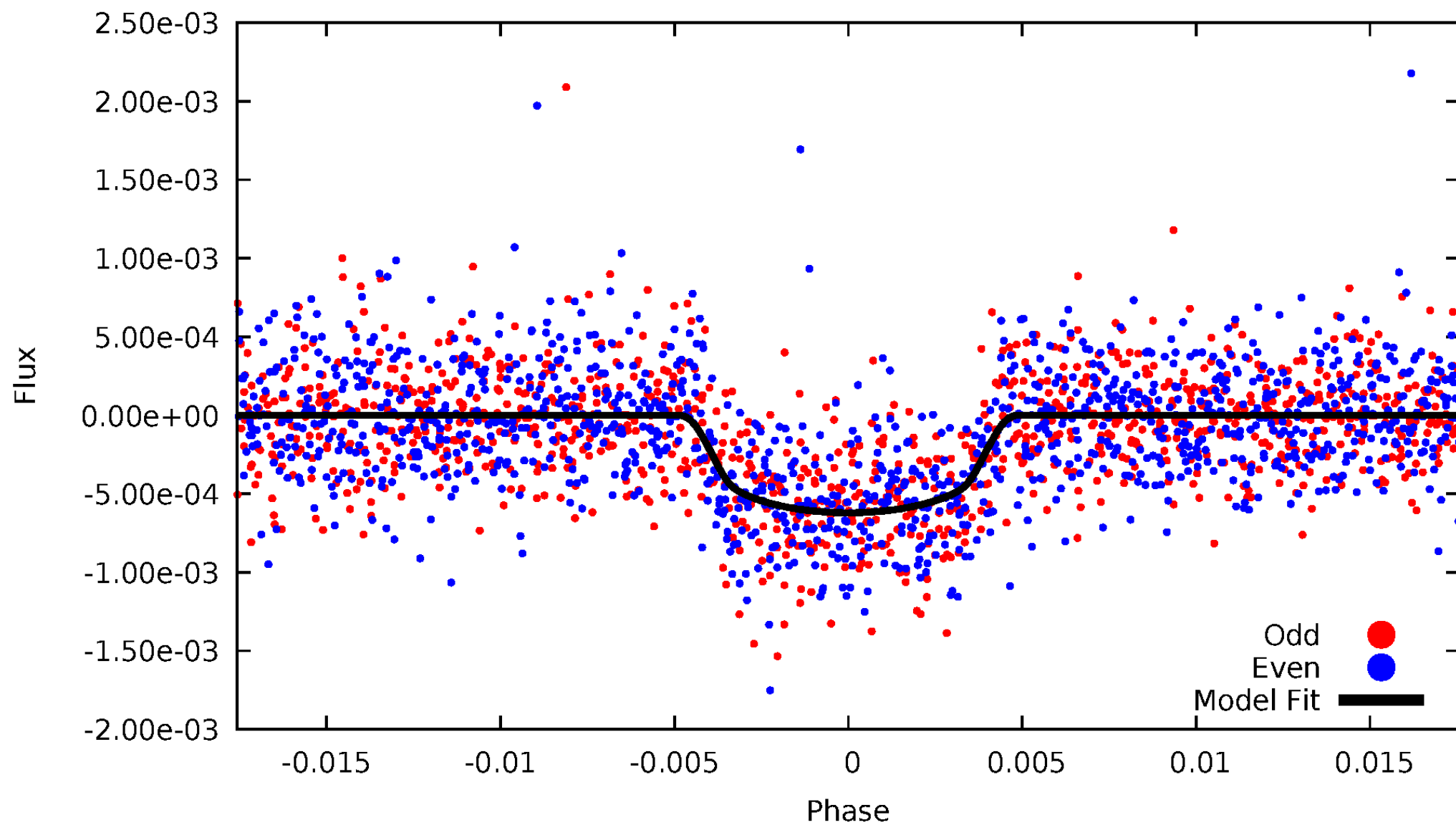


TCE 003218908-01



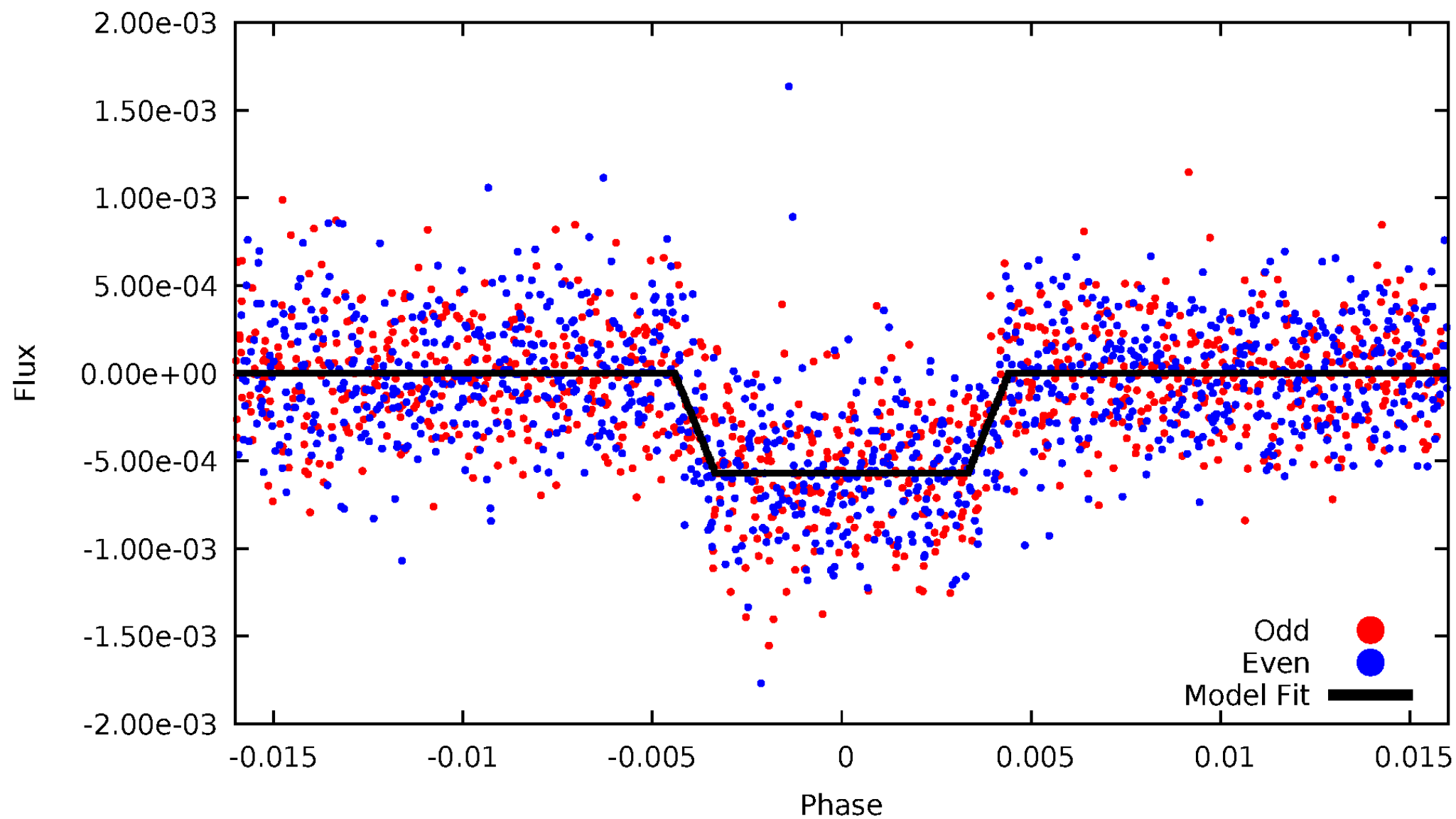
DV Odd/Even

TCE 003218908-01



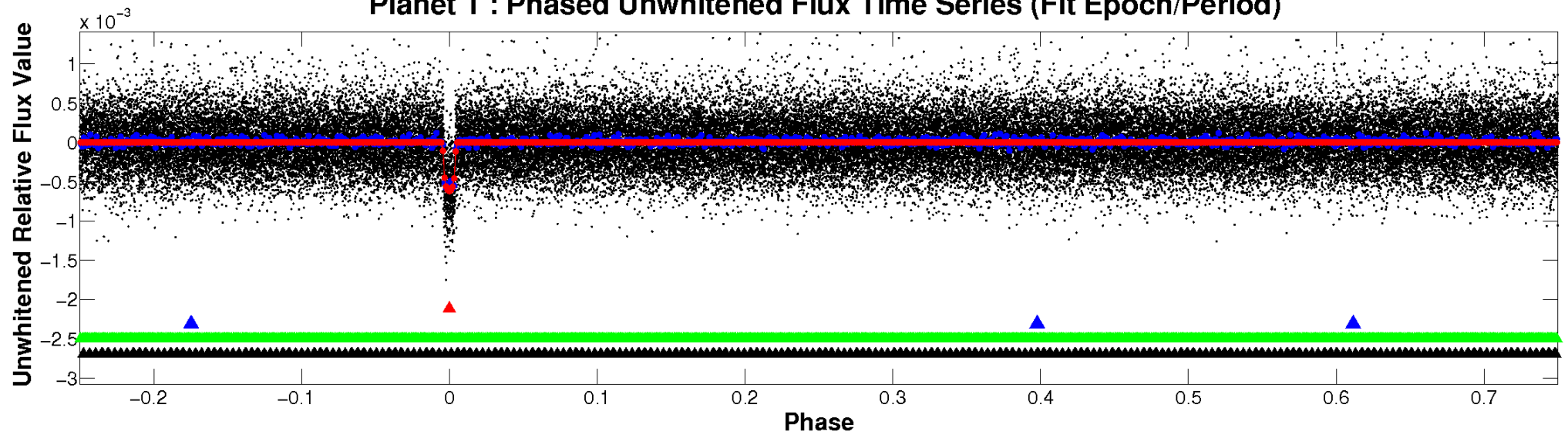
ALT Odd/Even

TCE 003218908-01

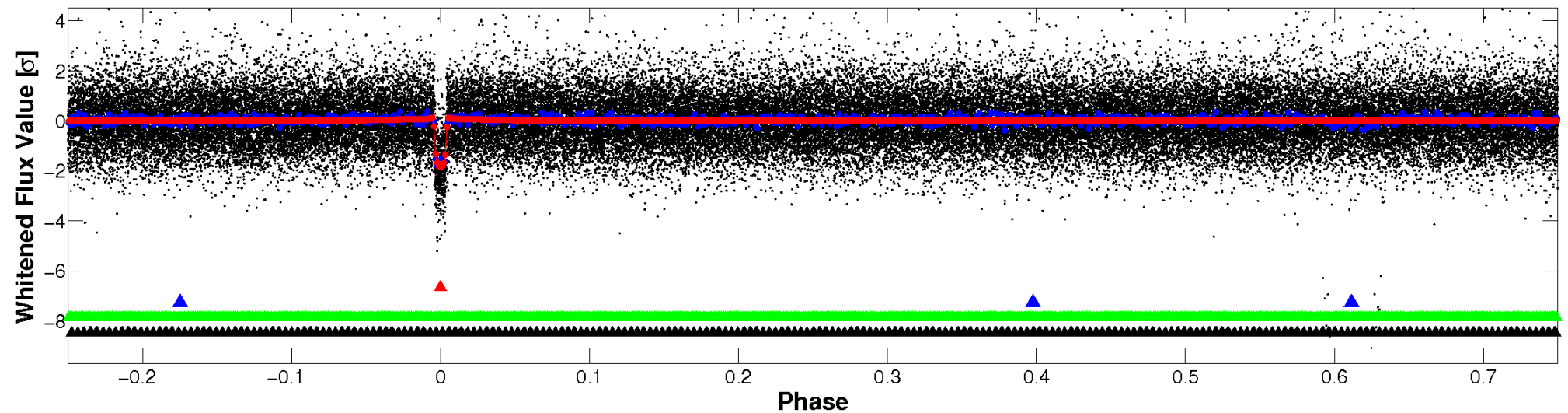


Non-Whitened Vs. Whitened Light Curve

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

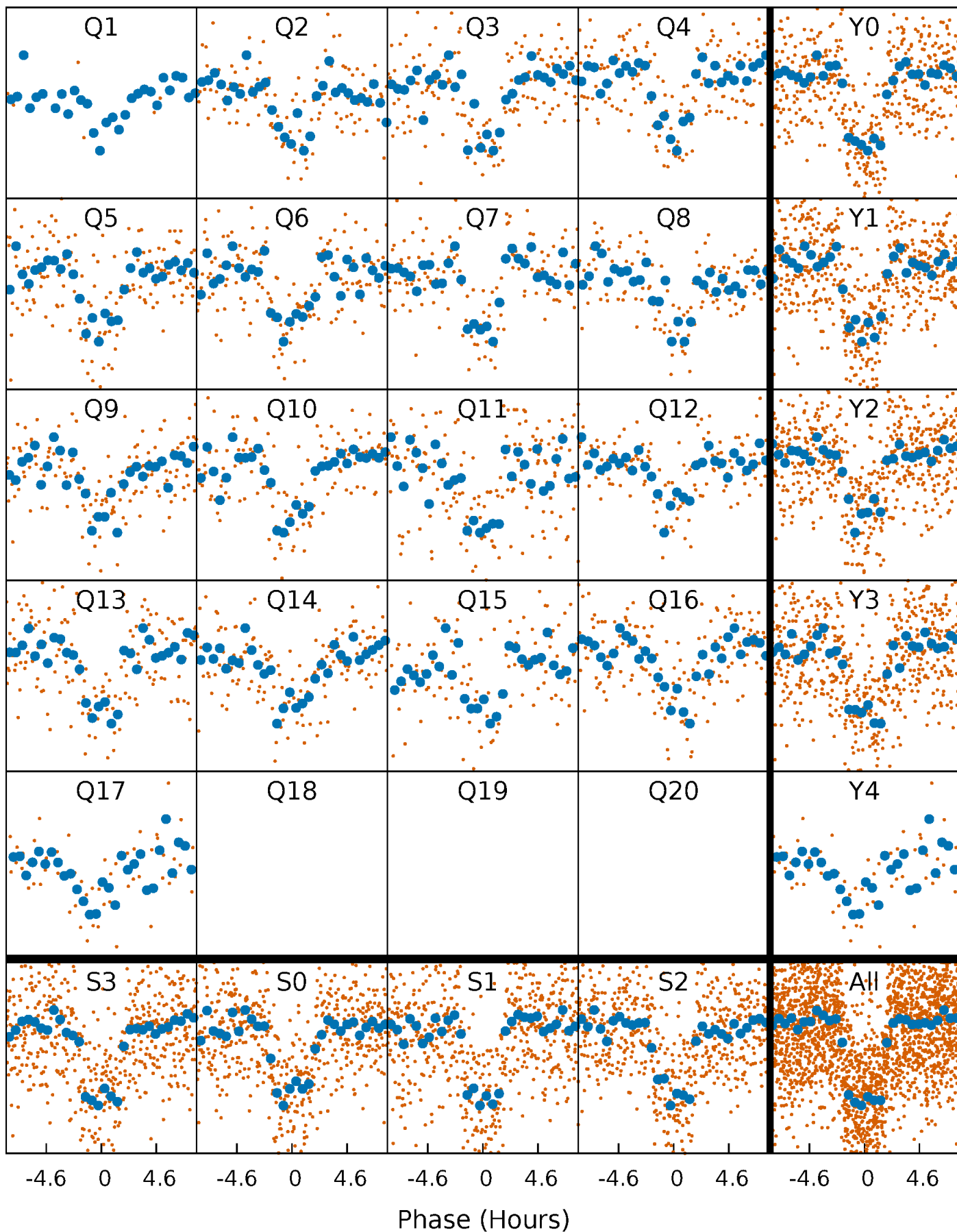


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



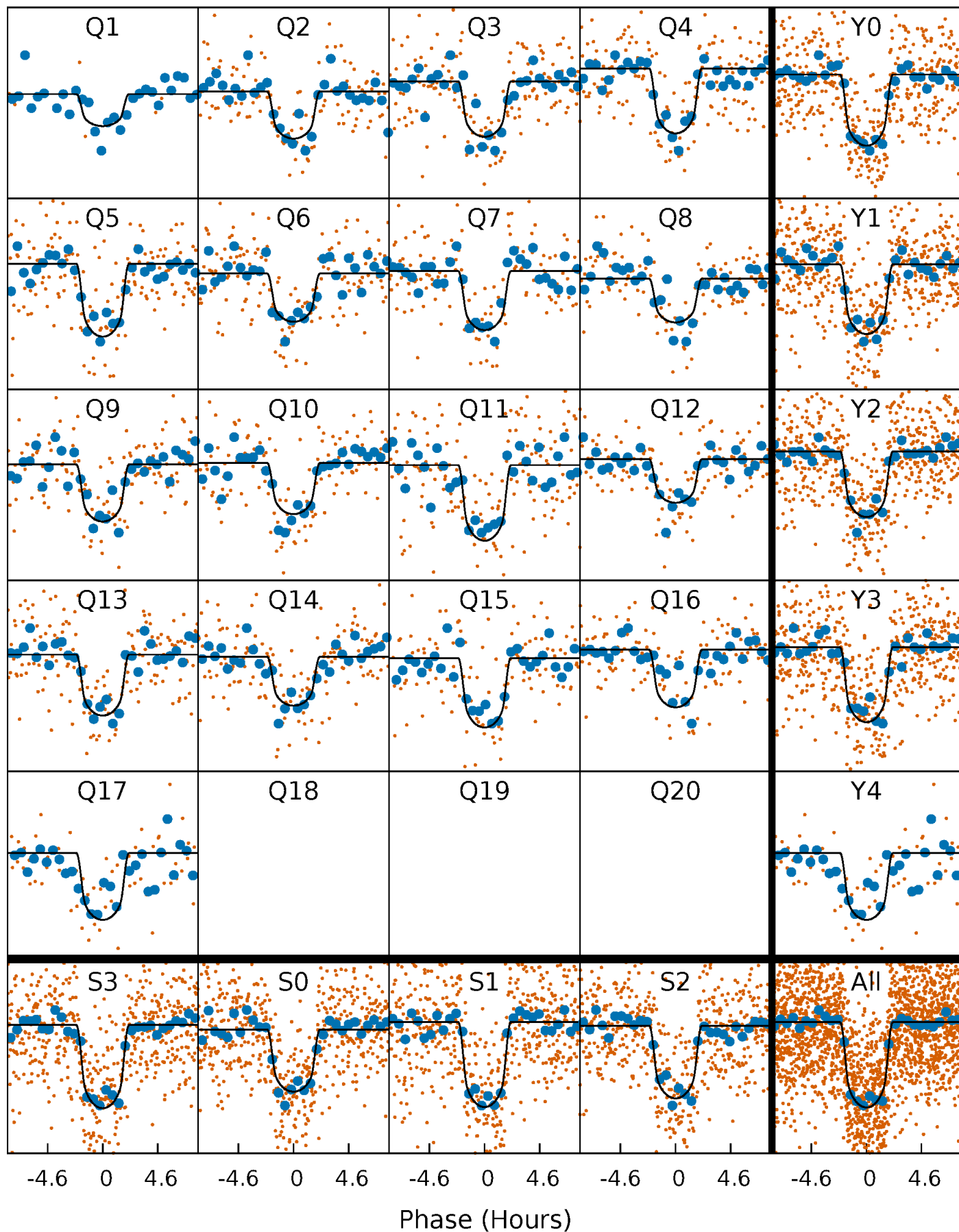
PDC Quarter-Phased Transit Curves

TCE 003218908-01 P= 18.925401 Days $T_0=149.494255$ (BKJD)



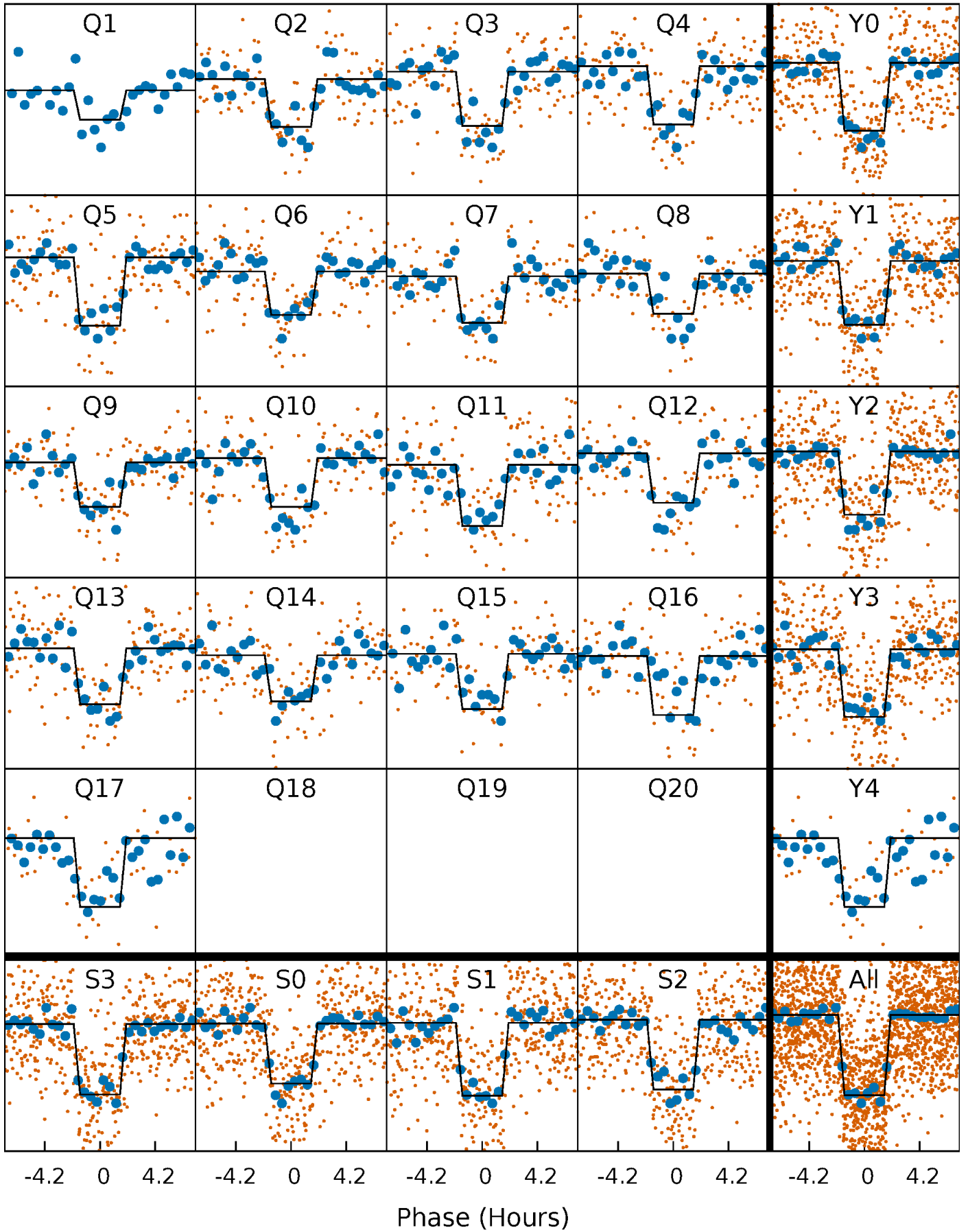
DV Quarter-Phased Transit Curves

TCE 003218908-01 P= 18.925401 Days $T_0=149.494255$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

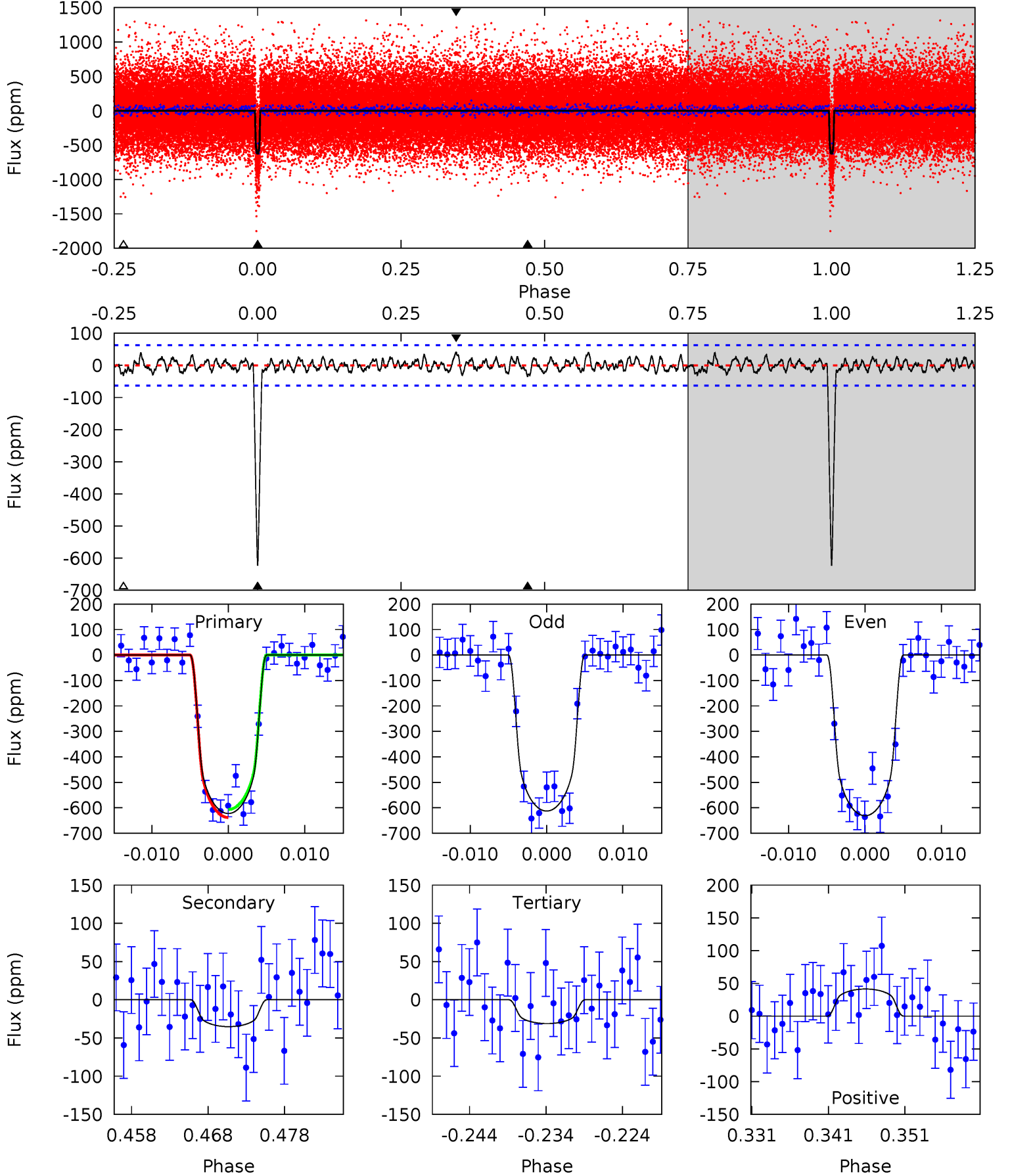
TCE 003218908-01 P= 18.925269 Days $T_0=149.498764$ (BKJD)



DV Model-Shift Uniqueness Test

003218908-01, $P = 18.925401$ Days, $E = 130.568854$ Days

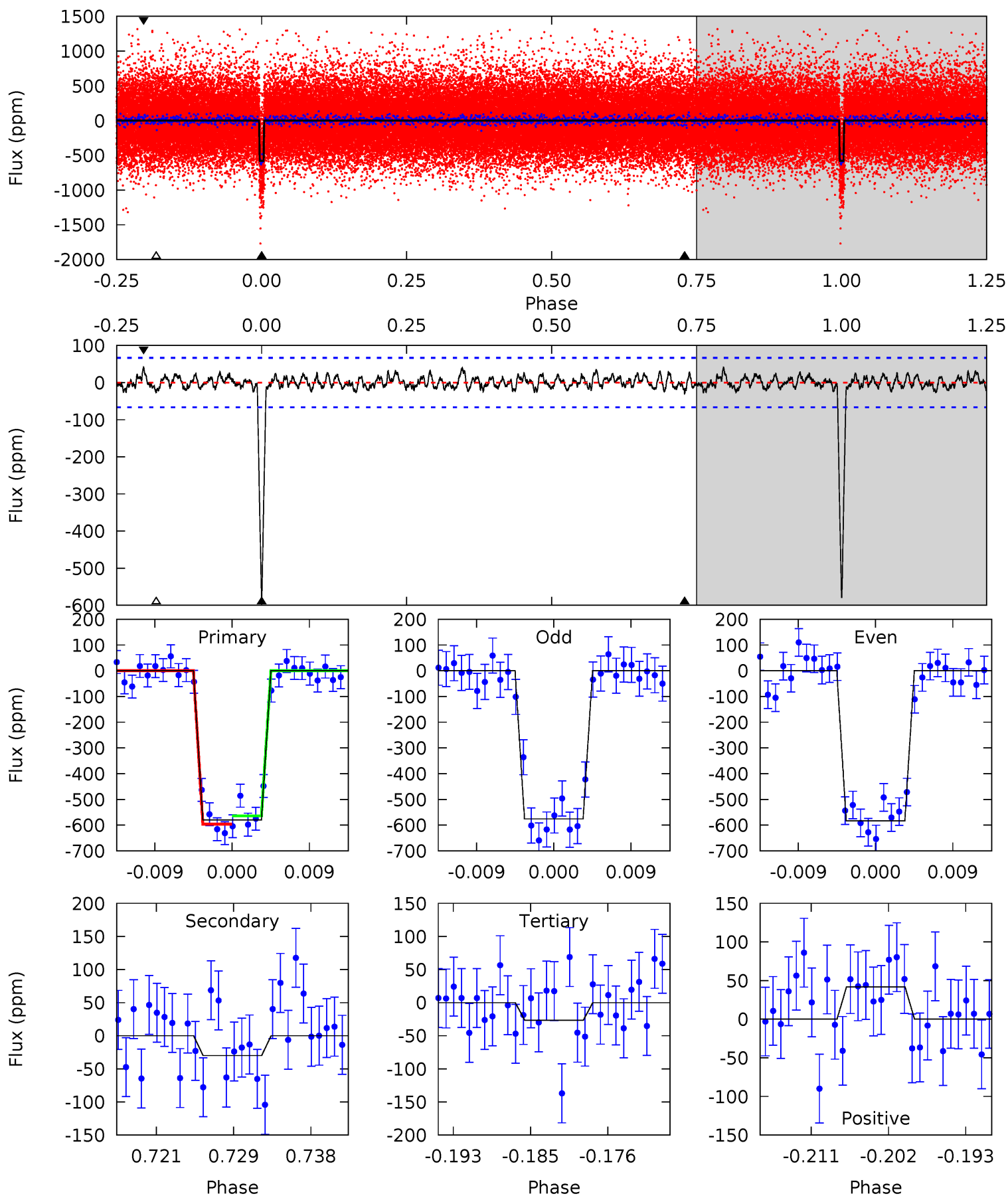
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.7	2.81	2.49	3.31	5.03	2.58	1.11	47.2	46.4	0.33	-0.49	0.74	0.99	0.06	1.26



Alt Model-Shift Uniqueness Test

003218908-01, $P = 18.925269$ Days, $E = 130.573495$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.0	2.27	2.02	3.17	5.05	2.62	0.98	42.0	40.8	0.25	-0.90	0.29	0.99	0.07	1.22



Stellar Parameters For KIC 003218908

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4941^{+49}_{-118}	$3.317^{+0.210}_{-0.105}$	$0.400^{+0.050}_{-0.250}$	$4.885^{+0.701}_{-1.636}$	$1.808^{+0.181}_{-0.578}$	$0.022^{+0.028}_{-0.007}$
	+1%/-2%	+6%/-3%	+12%/-62%	+14%/-33%	+10%/-32%	+130%/-30%
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 003218908-01 / KOI 1108.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-35 ± 13	$13.36^{+3.39}_{-3.04}$	1620^{+76}_{-112}	2934^{+232}_{-250}	$3.013^{+2.291}_{-1.369}$
Alt.	-30 ± 13	$12.35^{+3.20}_{-3.13}$	1619^{+78}_{-106}	2934^{+287}_{-300}	$3.026^{+2.483}_{-1.460}$

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

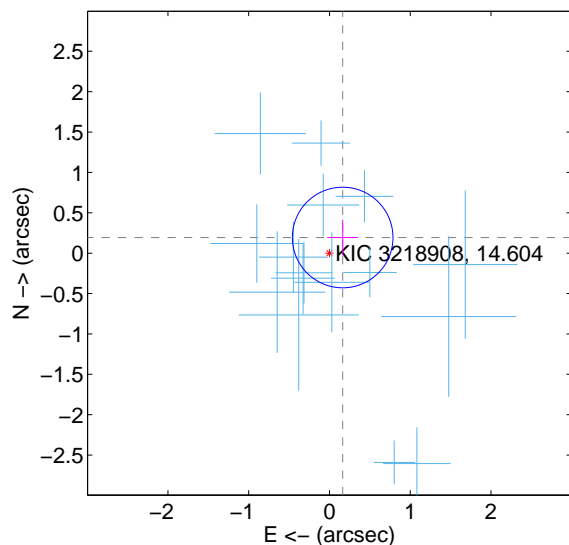
Supplemental centroid analysis for 003218908-01. Kepler magnitude: 14.60. Transit SNR 35.68

There are 16 quarters with good PRF difference image offsets

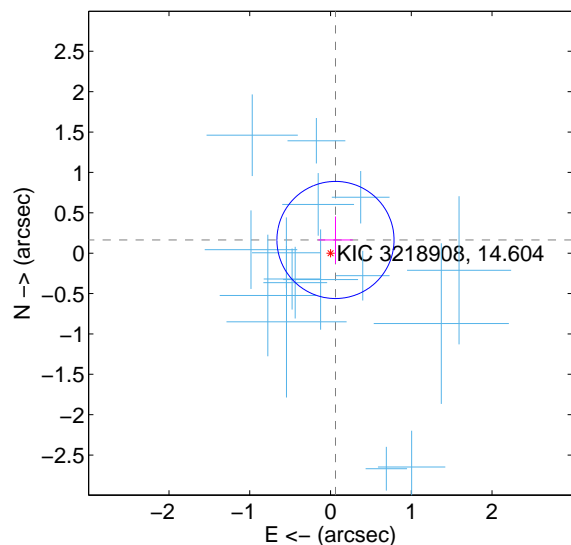
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.254 ± 0.208	1.22	-0.163 ± 0.190	0.194 ± 0.219
PRF-fit source offset from KIC position	0.175 ± 0.242	0.72	-0.061 ± 0.214	0.163 ± 0.291
photometric centroid source offset	1.29 ± 0.40	3.19	0.35 ± 0.38	-1.24 ± 0.40

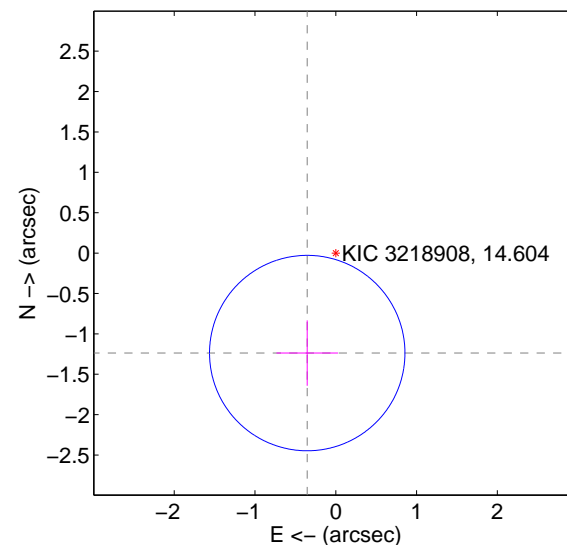
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

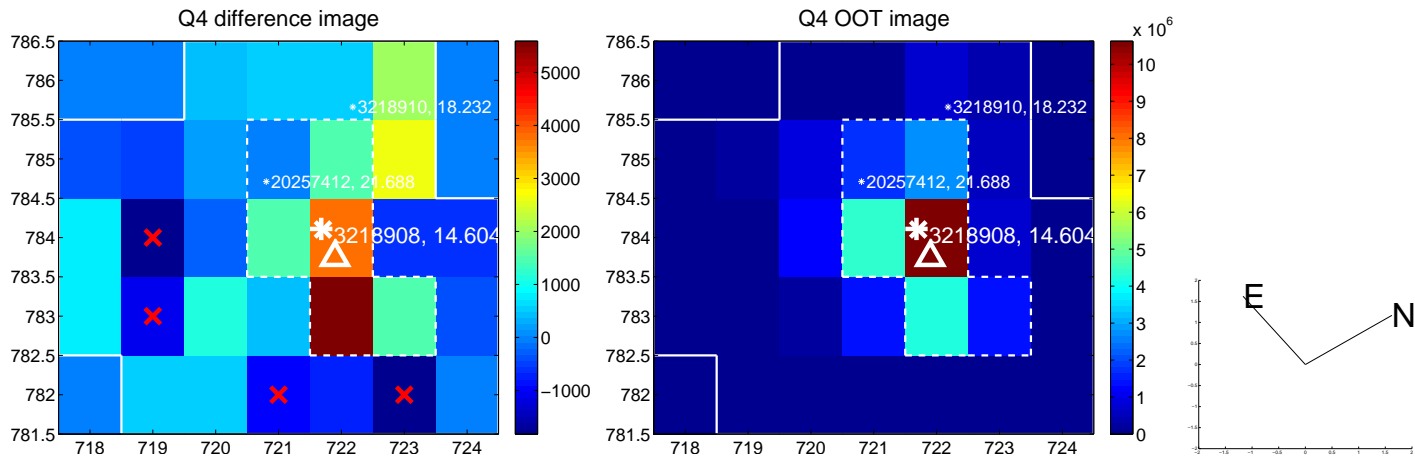
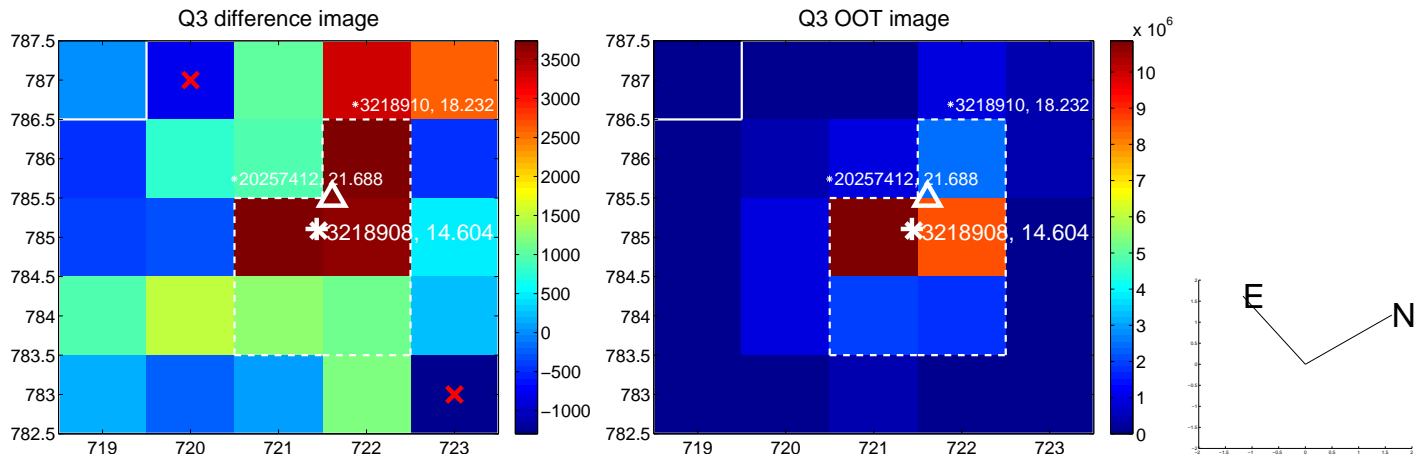
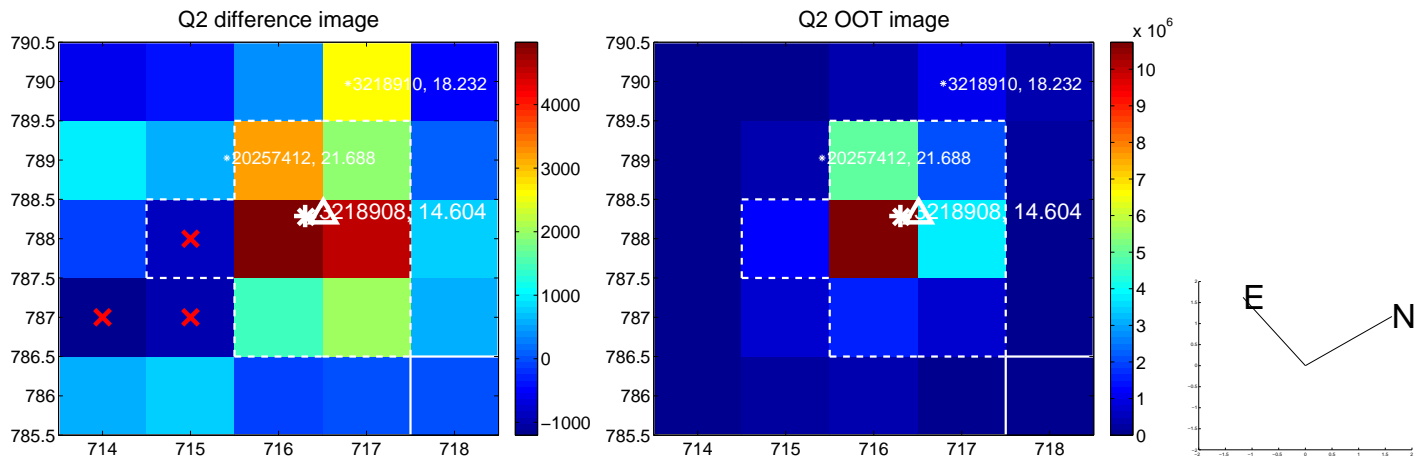
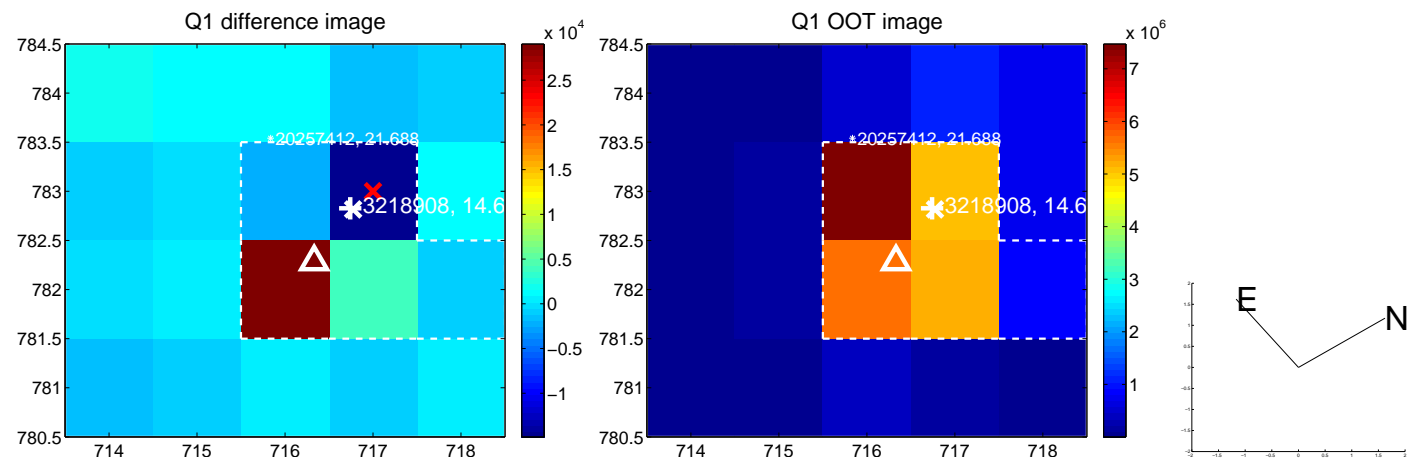


offset from photometric centroids

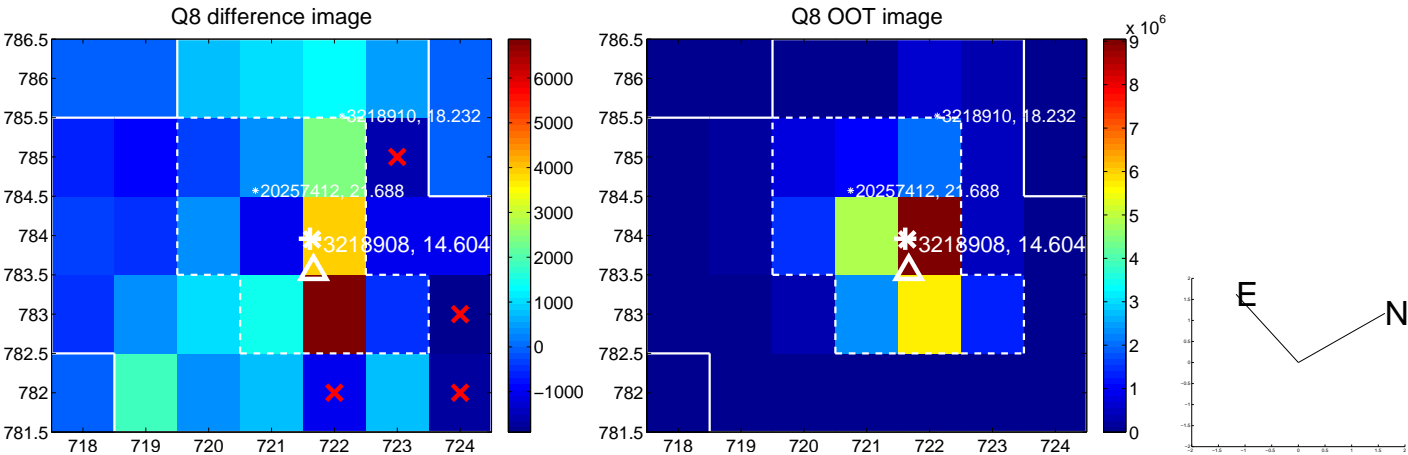
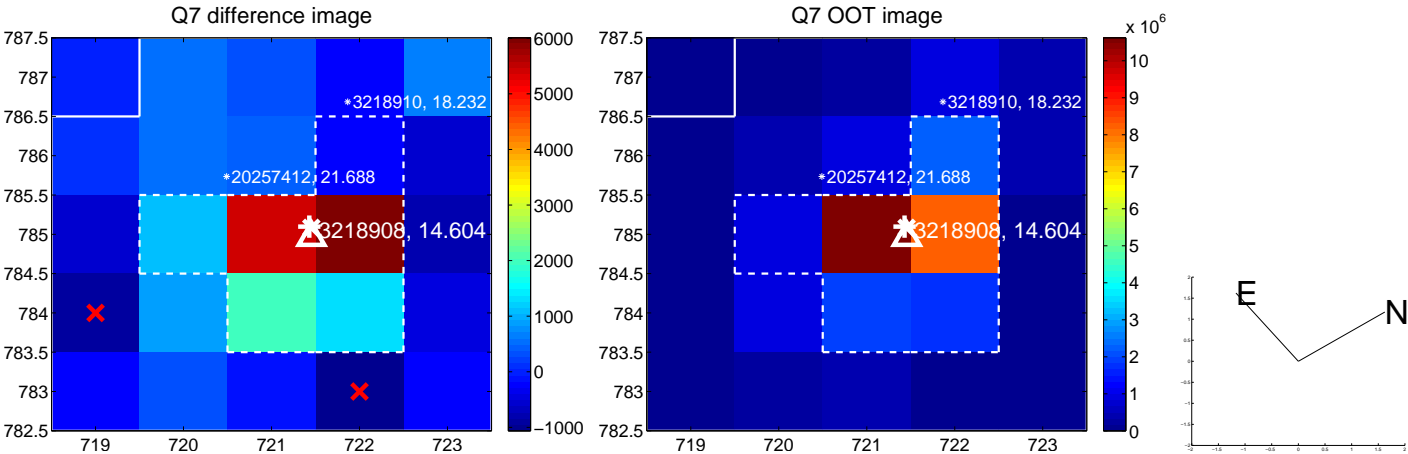
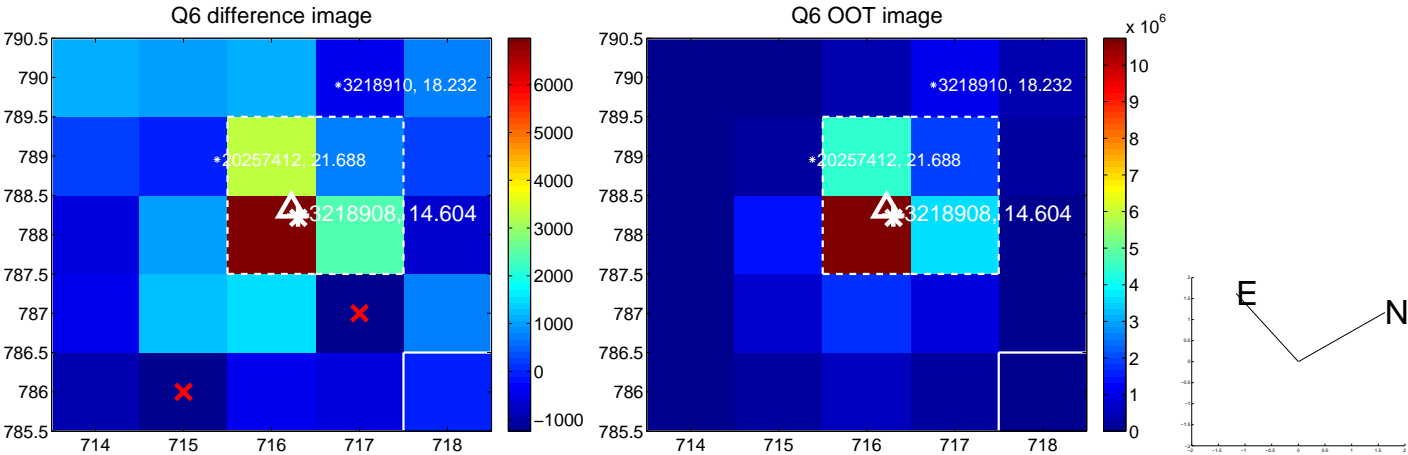
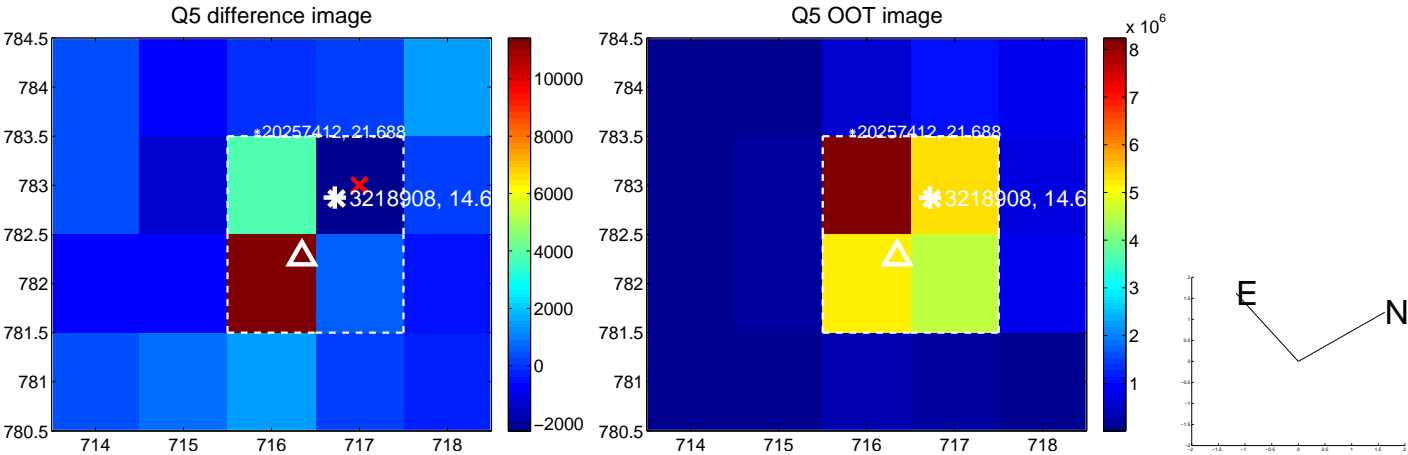


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

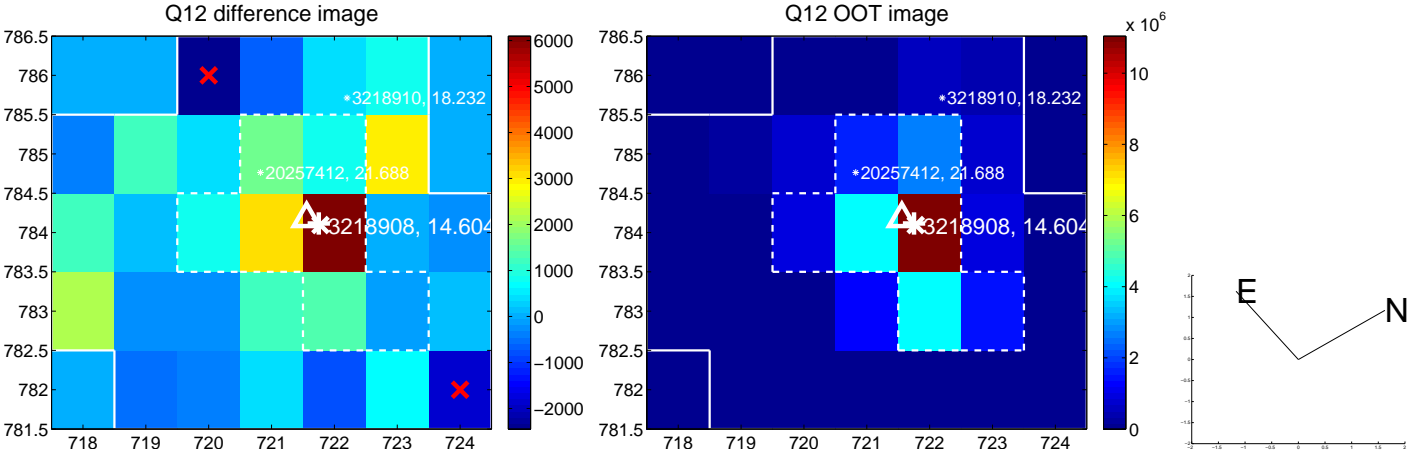
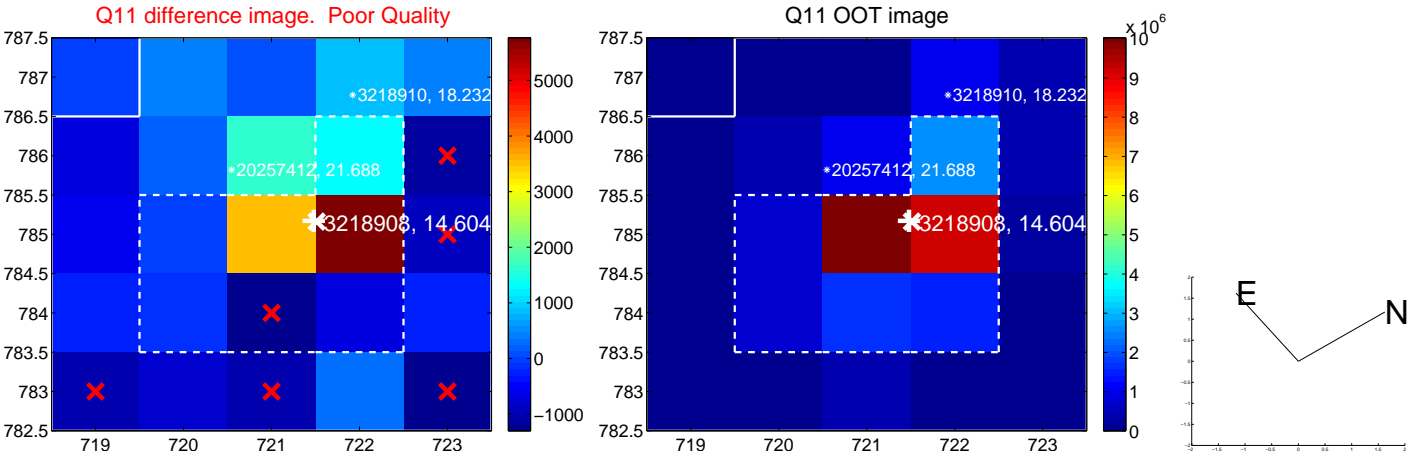
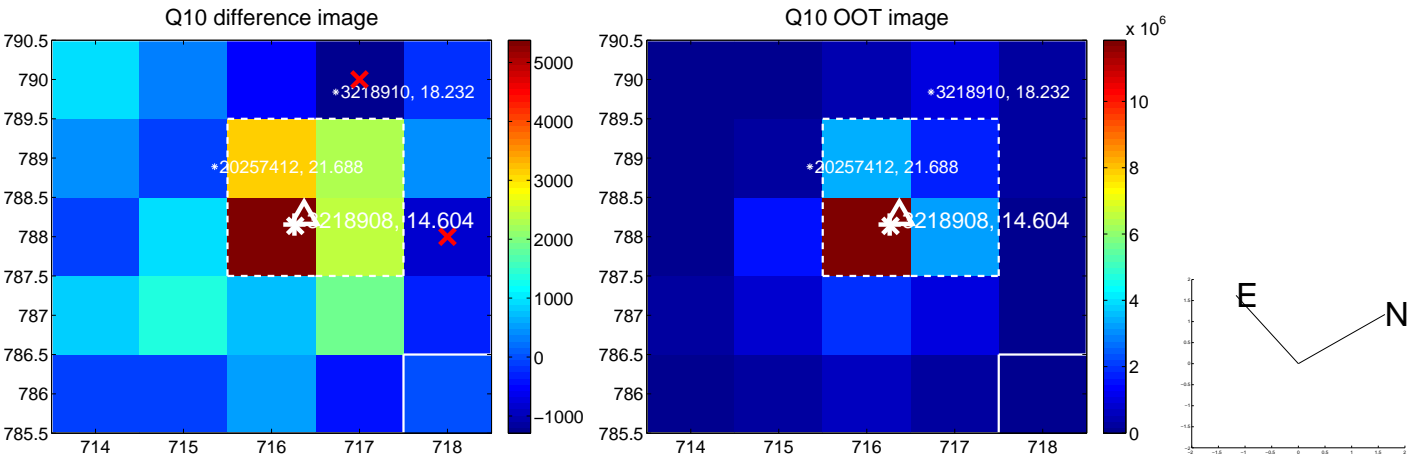
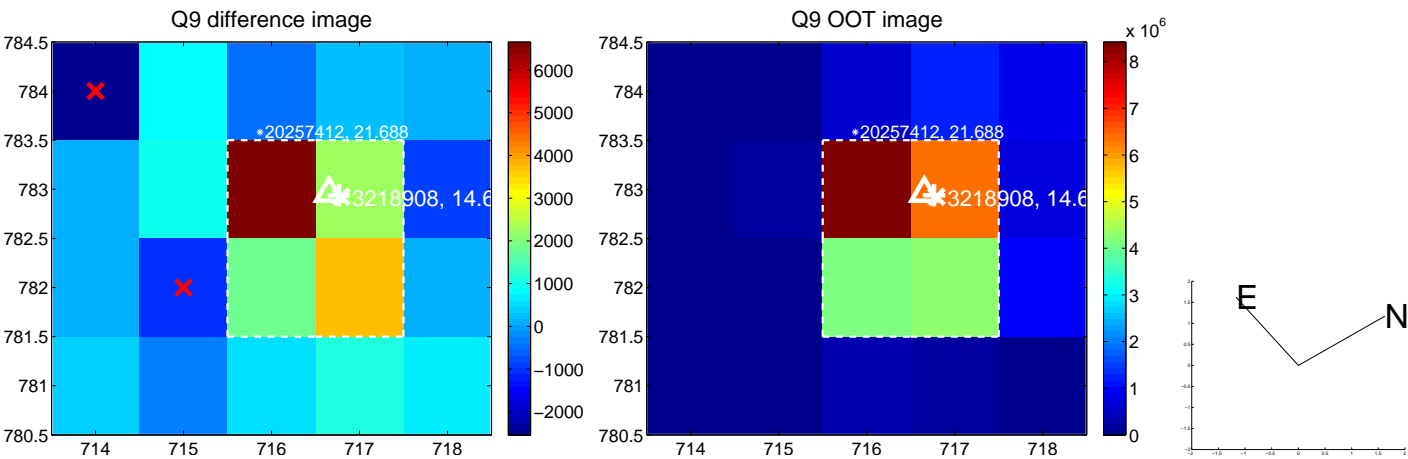
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



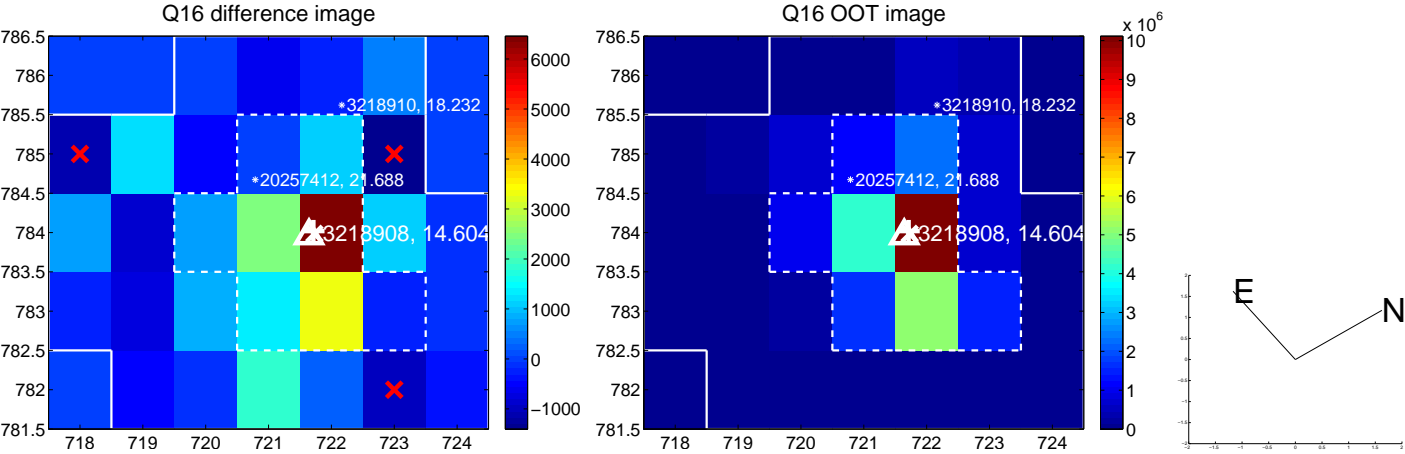
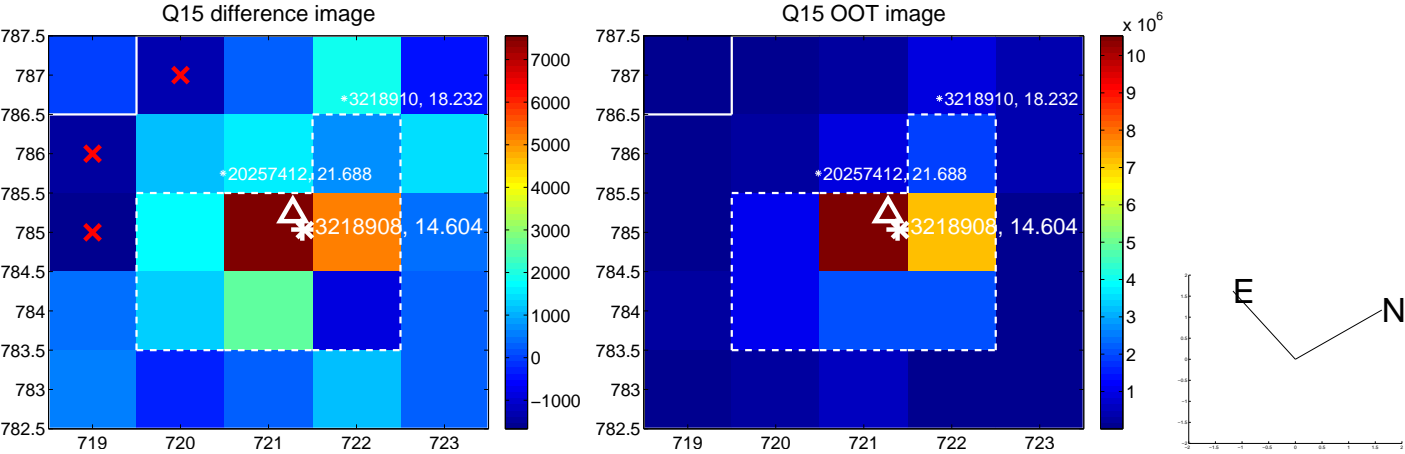
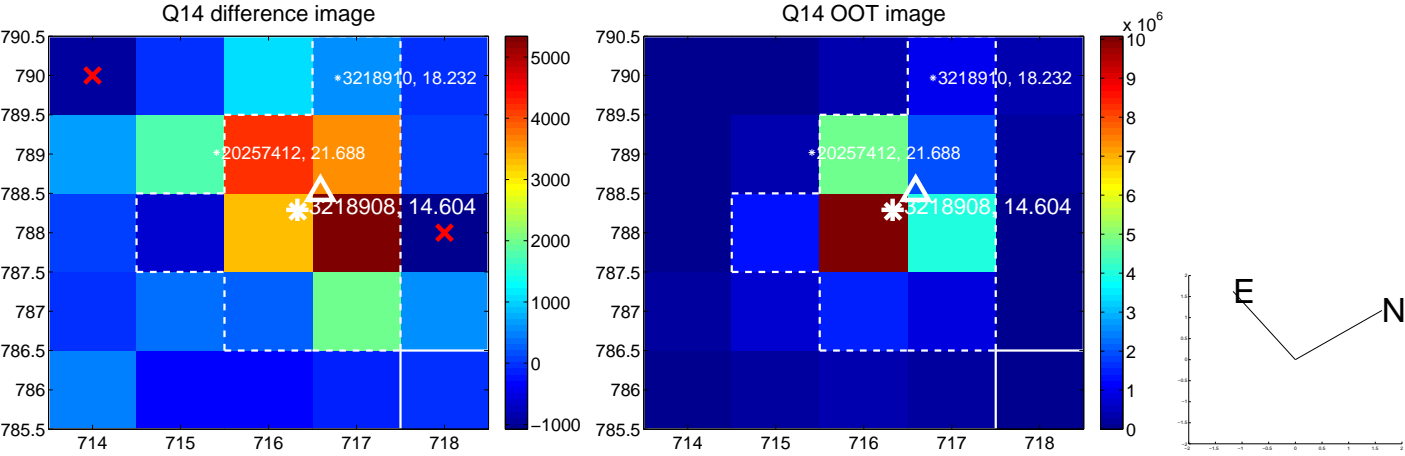
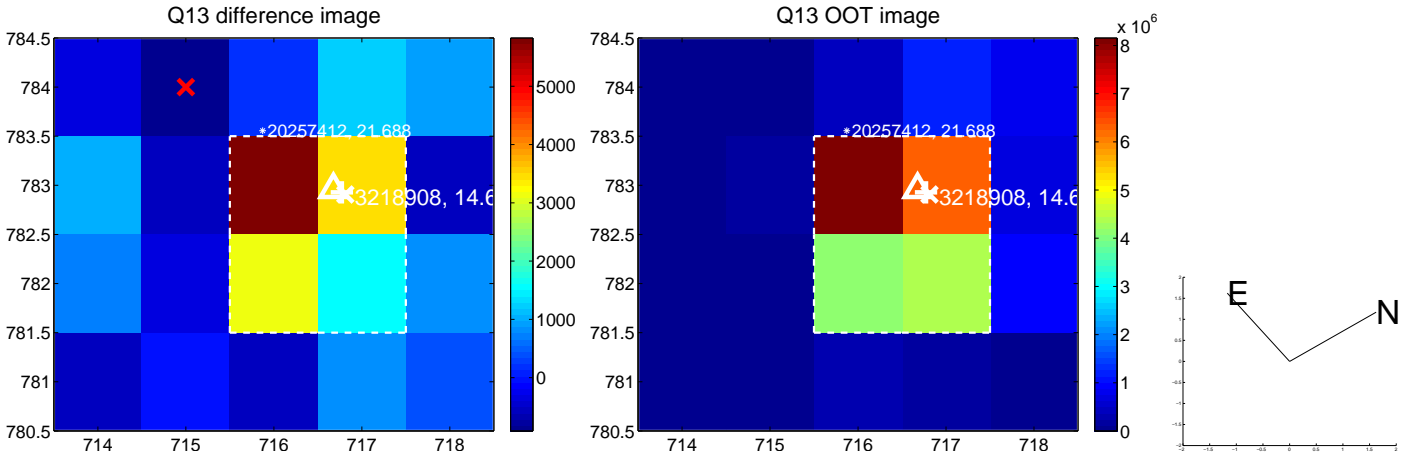
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



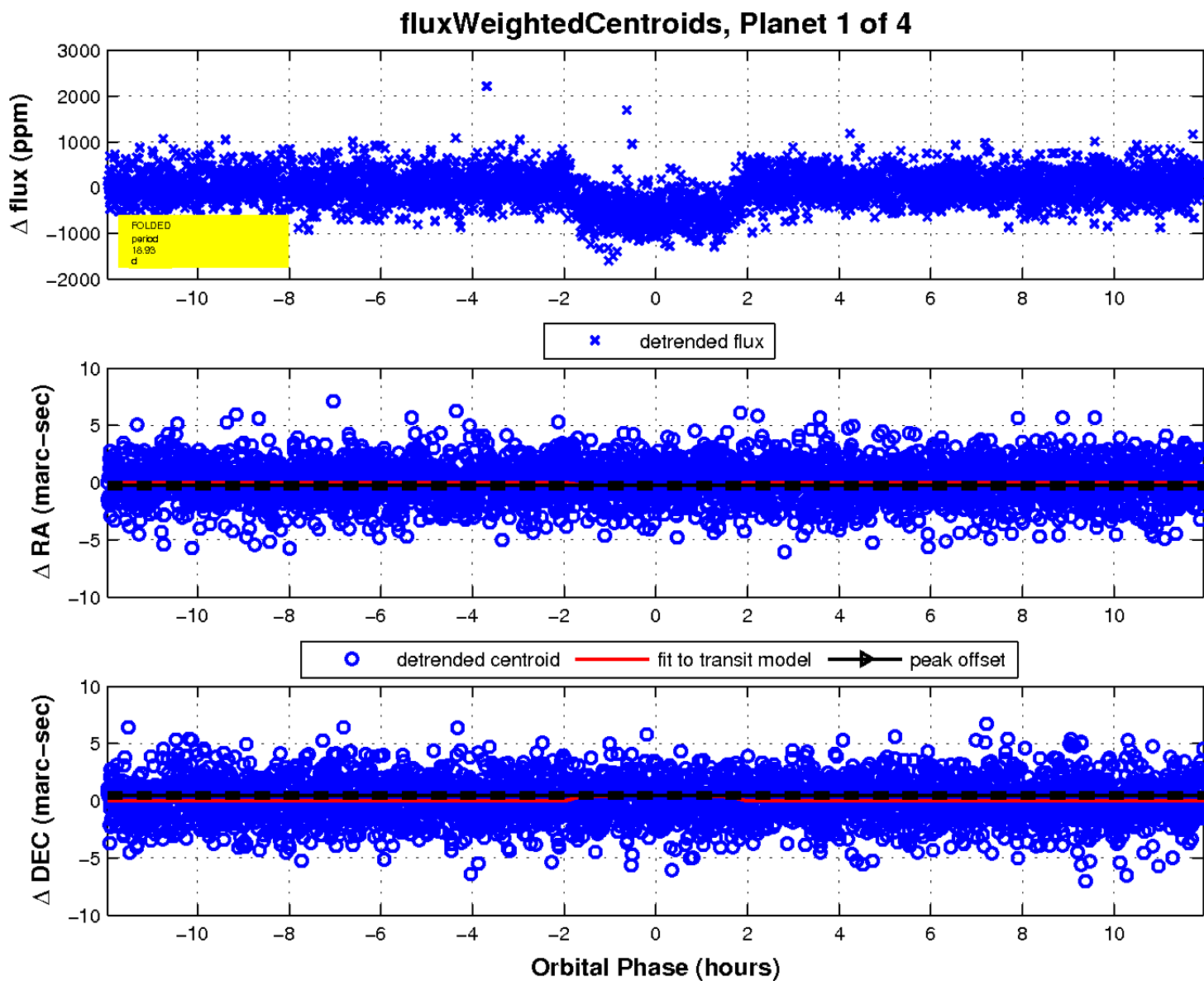
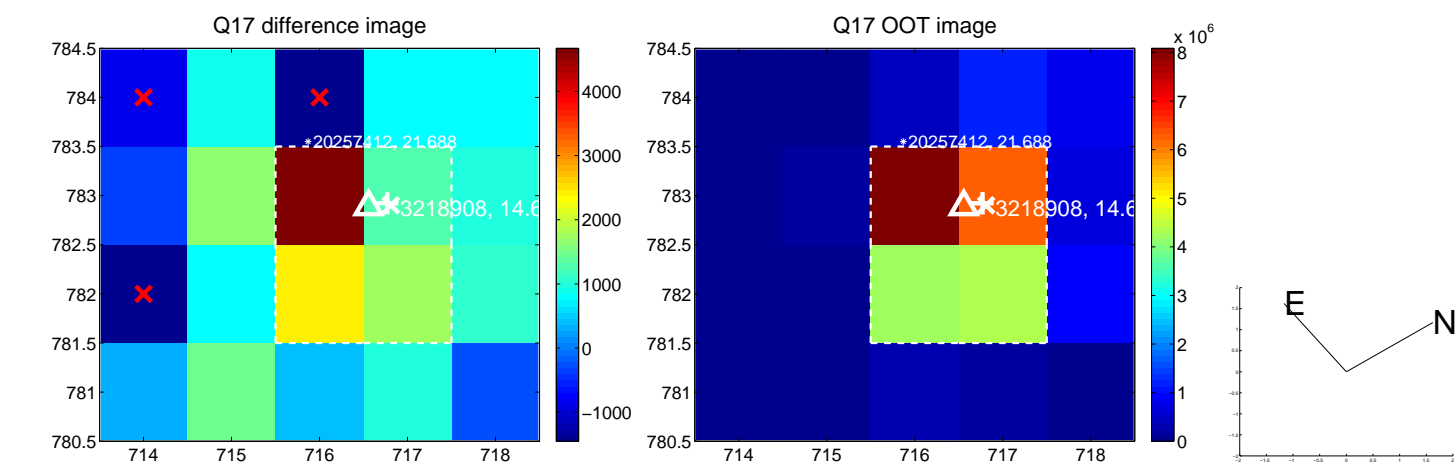
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

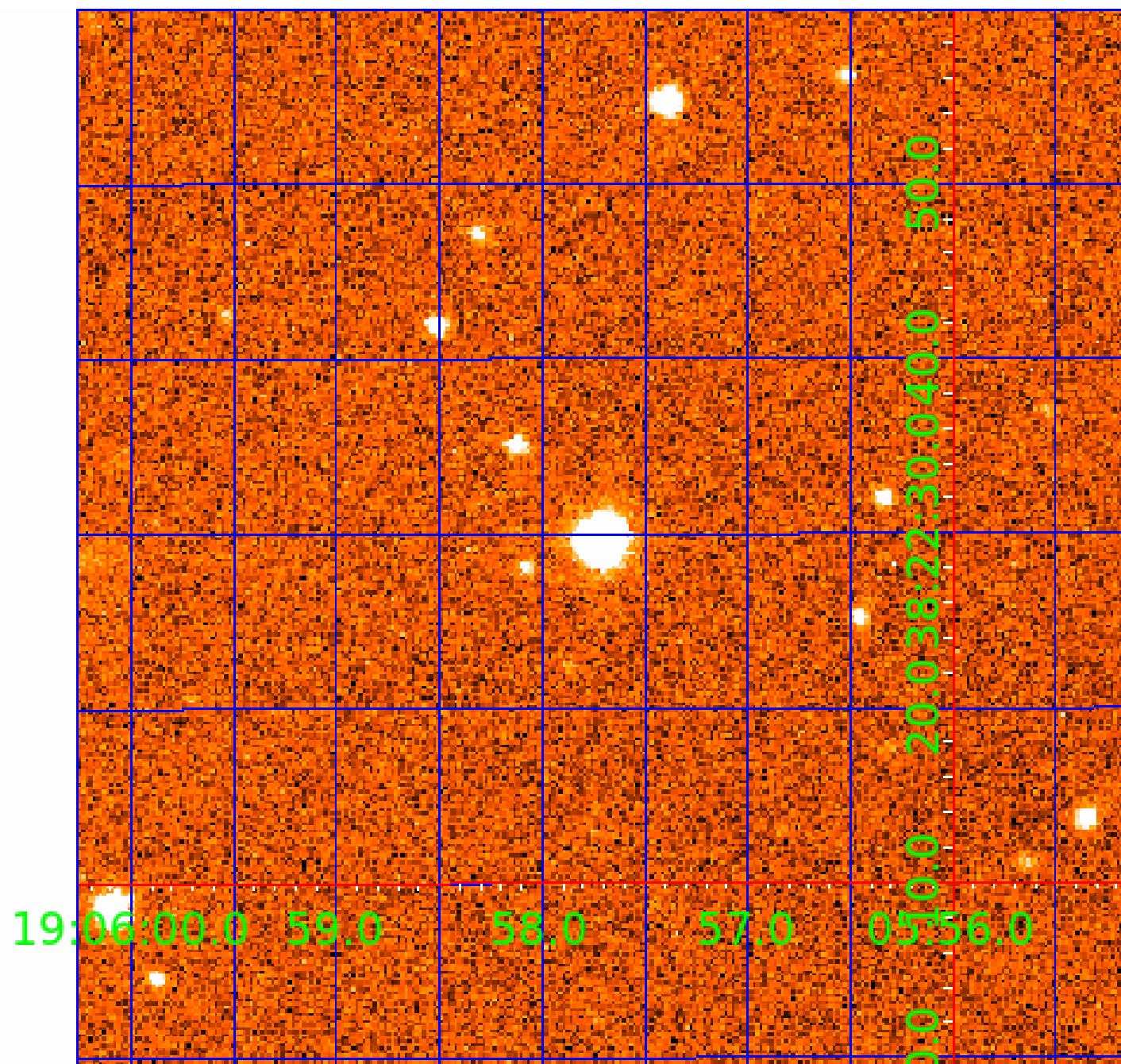


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003218908

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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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003218908-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003218908-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003218908-03	OBS	PC	0.99	0	0	0	0	NO_COMMENT
003218908-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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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.

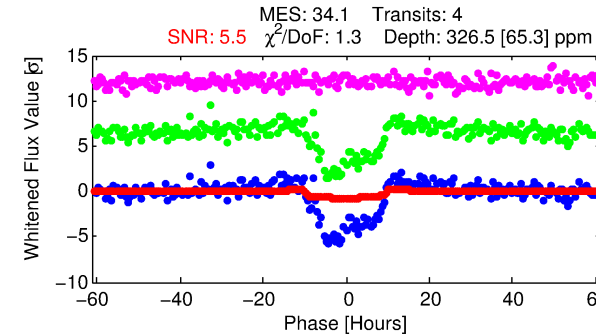
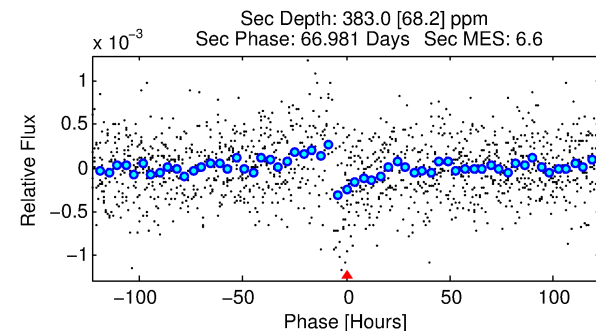
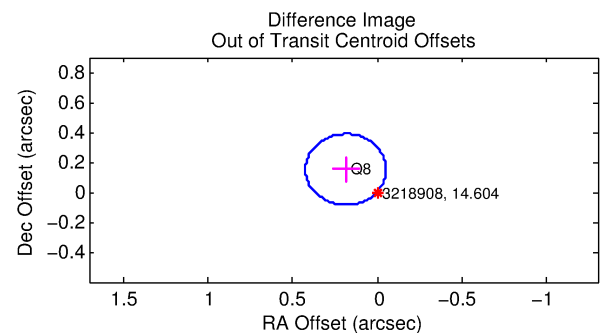
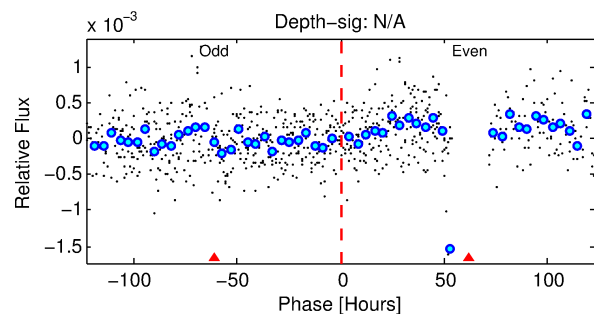
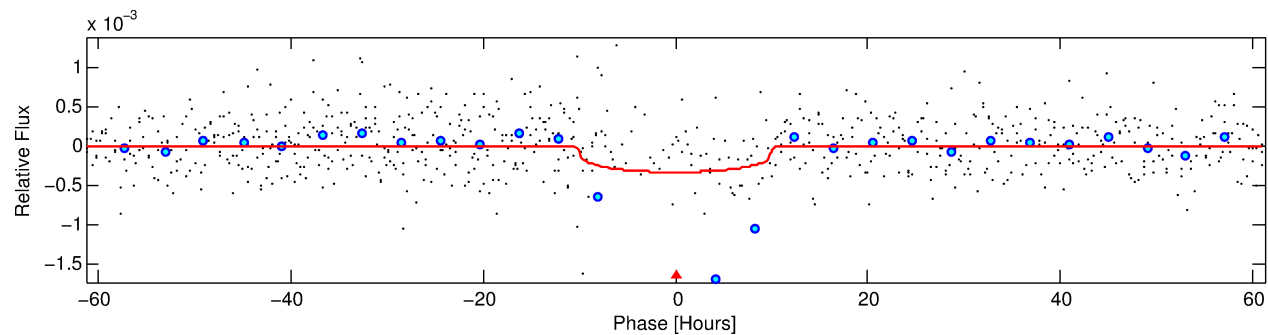
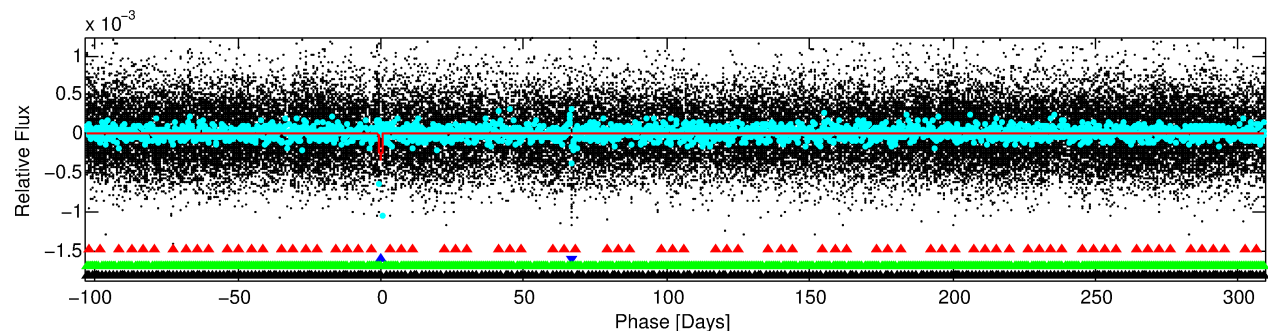
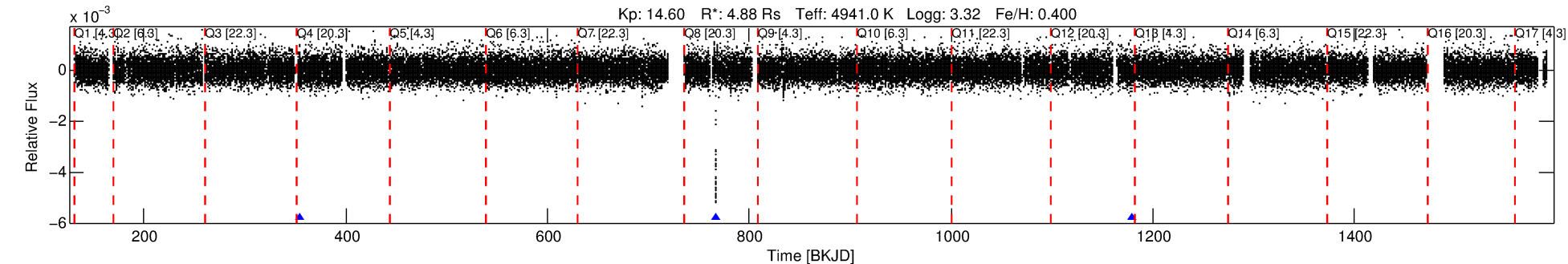
Ephemeris Match Information For 003218908-02

No Significant Match Found

DV One-Page Summary

KIC: 3218908 Candidate: 2 of 4 Period: 412.312 d
KOI: K01108 Corr: No Ephemeris Match

Kp: 14.60 R*: 4.88 Rs Teff: 4941.0 K Logg: 3.32 Fe/H: 0.400



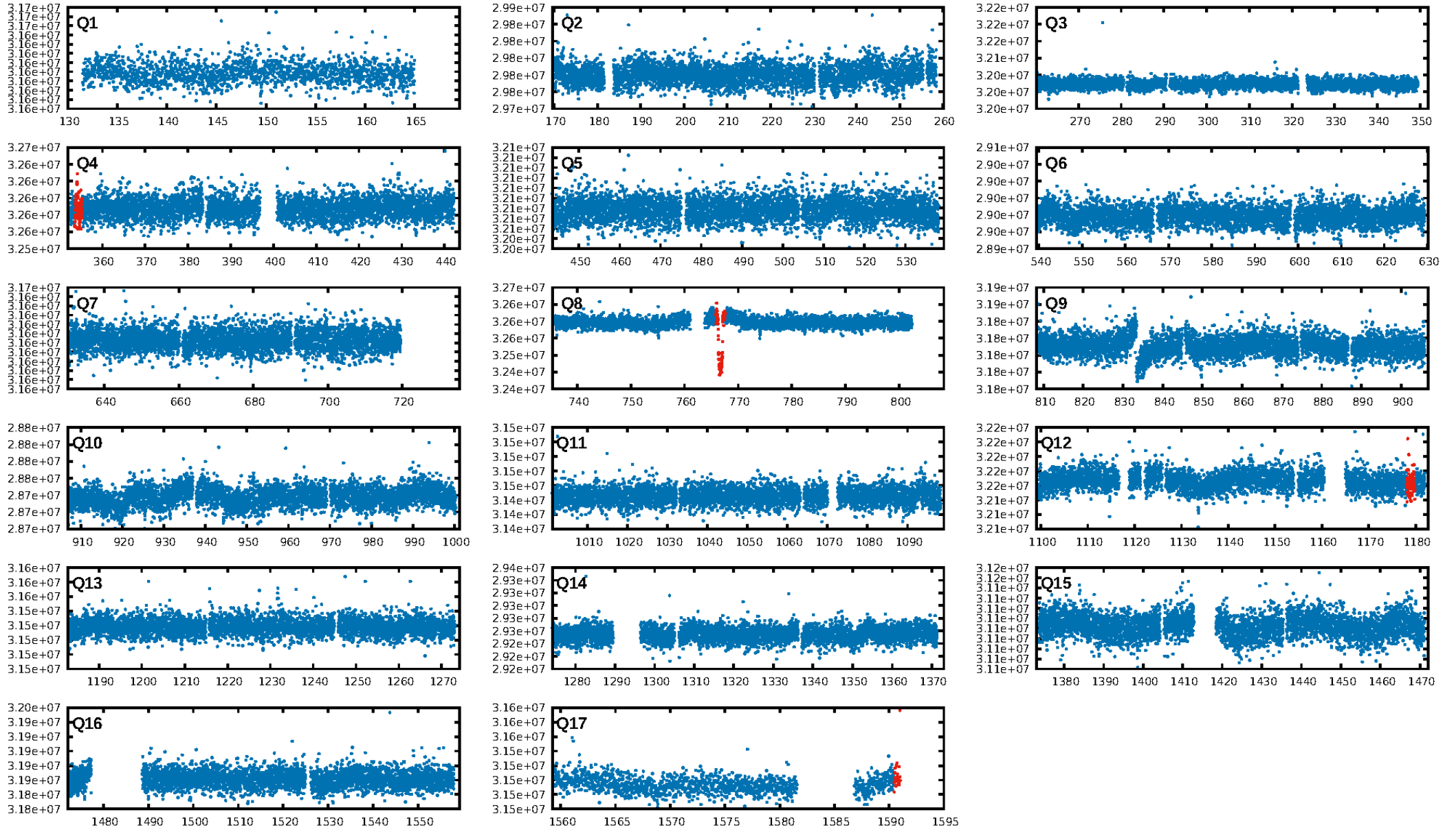
DV Fit Results:

Period = 412.31250 [0.02320] d
Epoch = 354.3679 [0.0386] BKJD
Rp/R* = 0.0170 [0.0164]
a/R* = 128.23 [410.46]
b = 0.59 [3.65]
Seff = 7.31 [2.95]
Teq = 419 [42] K
Rp = 9.05 [9.27] Re
a = 1.3206 [0.3636] AU
Ag = 4484.15 [8888.52] [0.50σ]
Teffp = 5304 [2580] K [1.89σ]

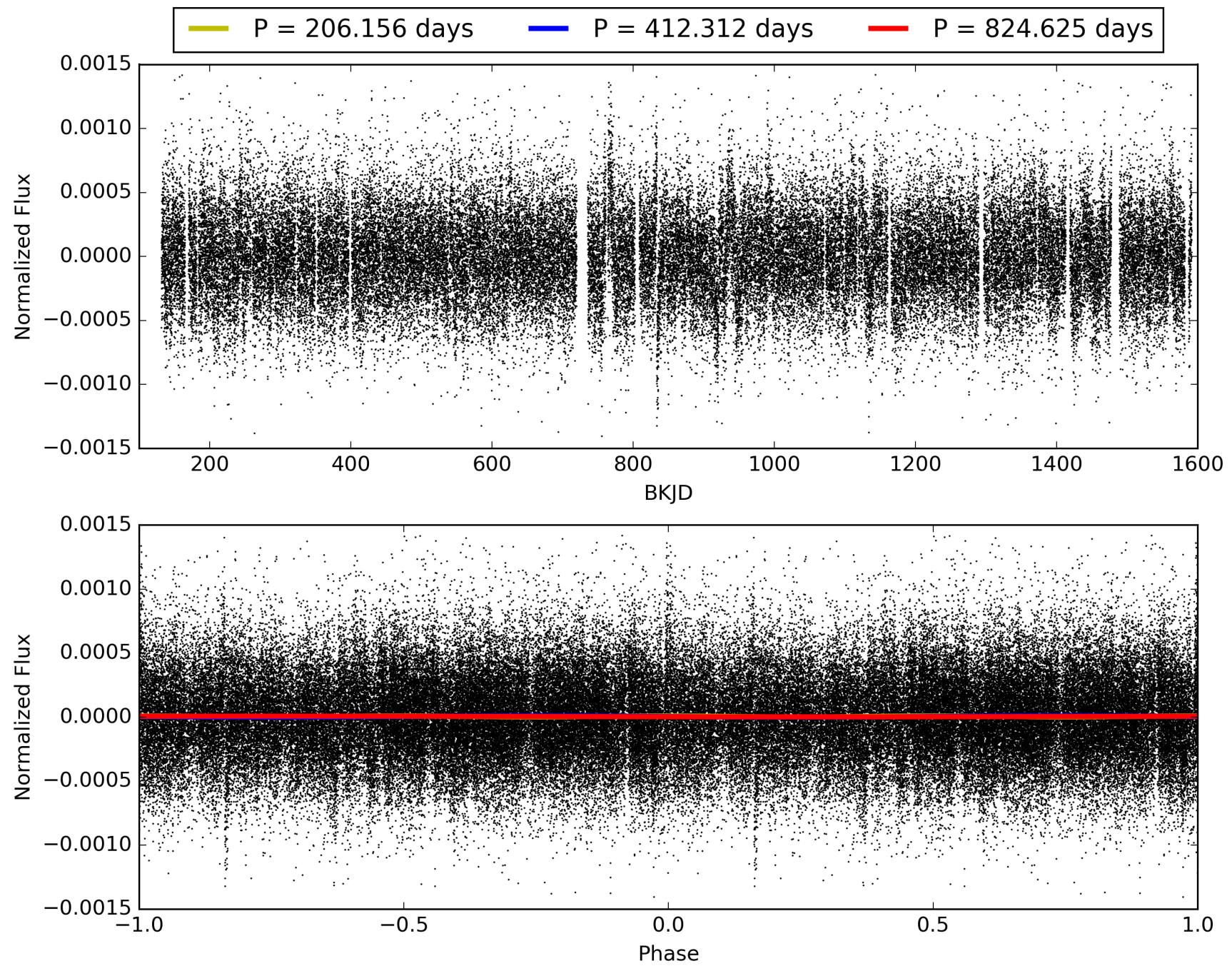
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [453.49σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.29e-112
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.01609
Centroid-sig: 0.9%
Centroid-so: 3.504 arcsec [1.85σ]
OotOffset-rm: 0.241 arcsec [3.05σ]
KicOffset-rm: 0.307 arcsec [3.98σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/1]

TCE 003218908-02, PDC Light Curves

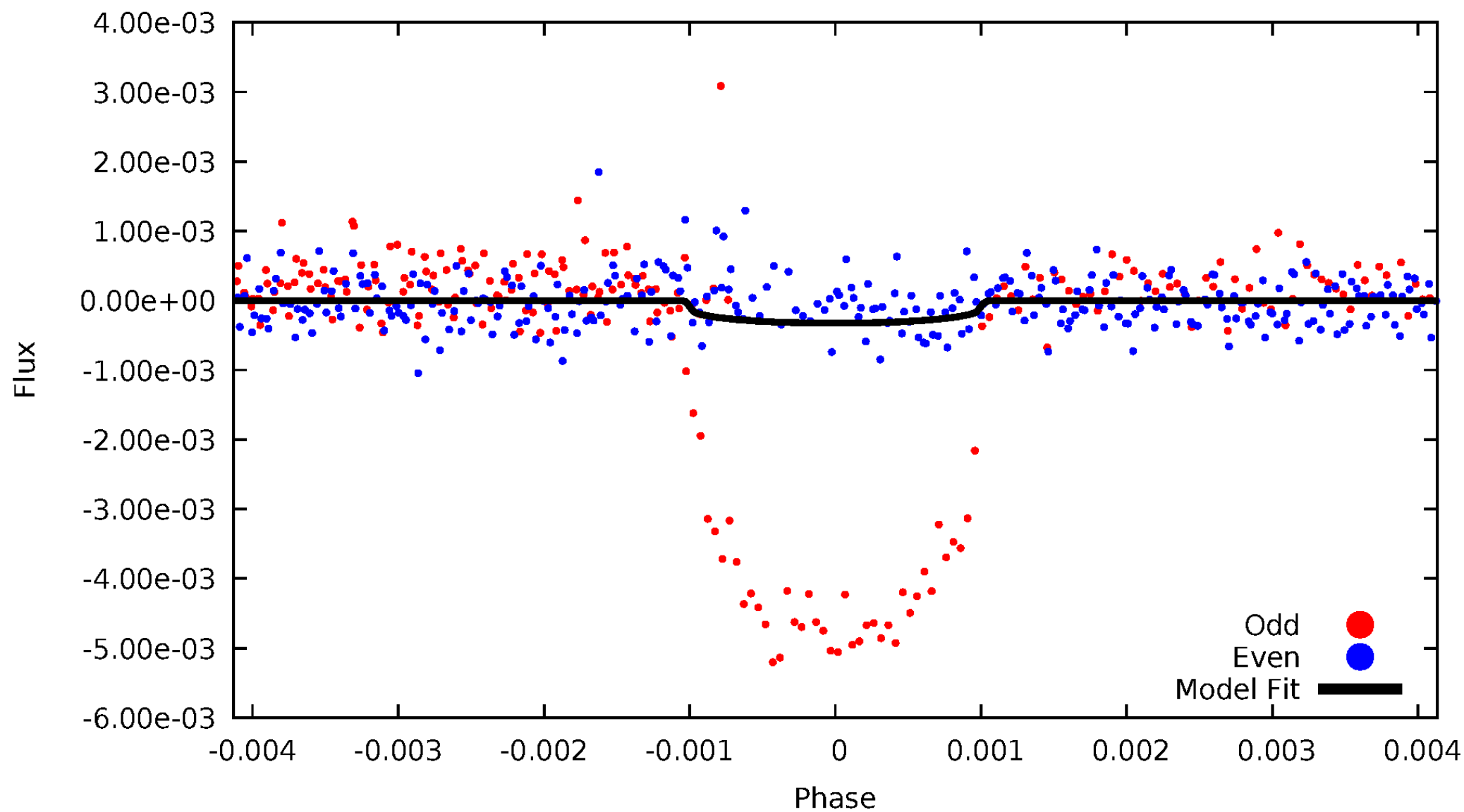


TCE 003218908-02



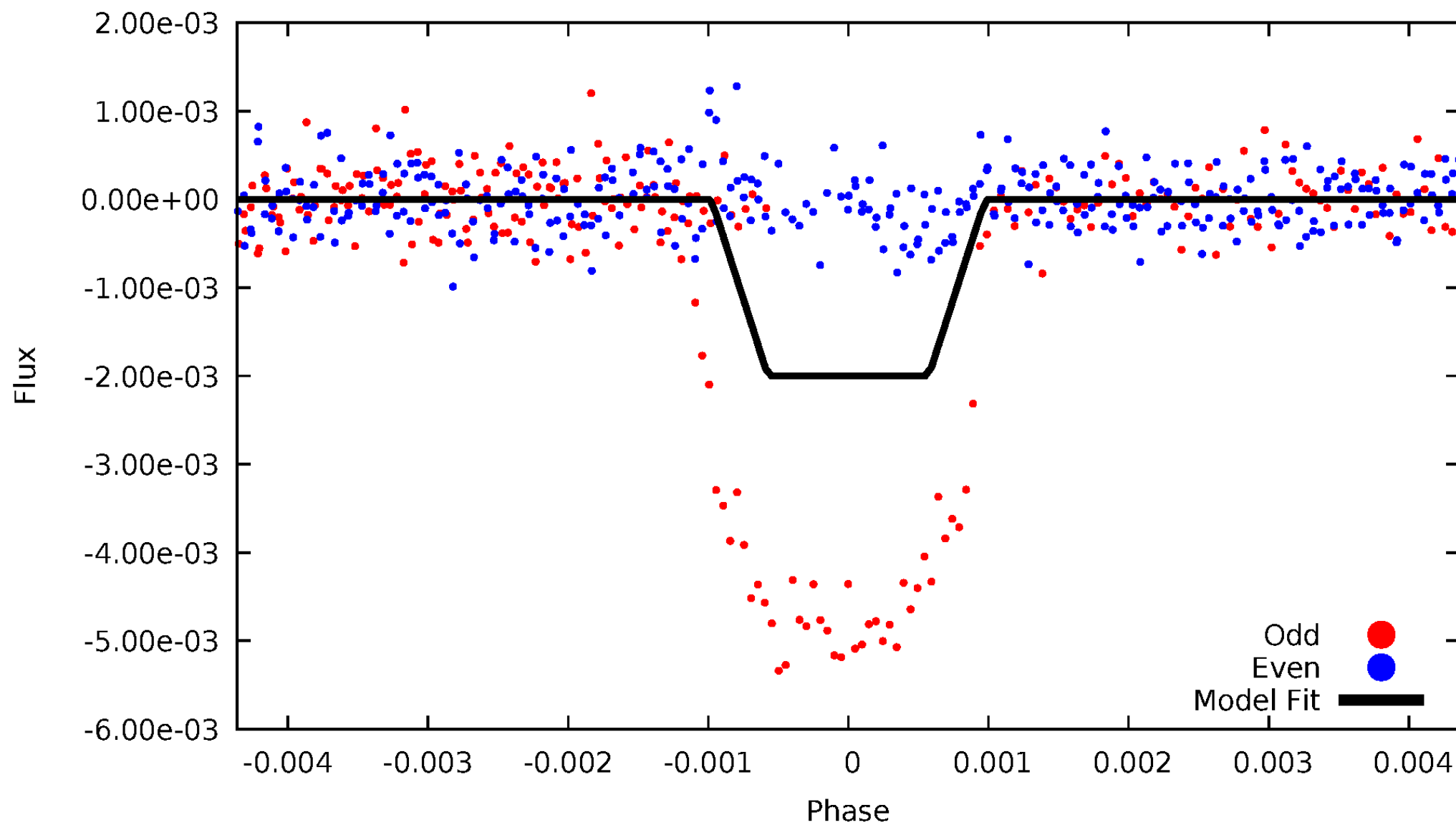
DV Odd/Even

TCE 003218908-02



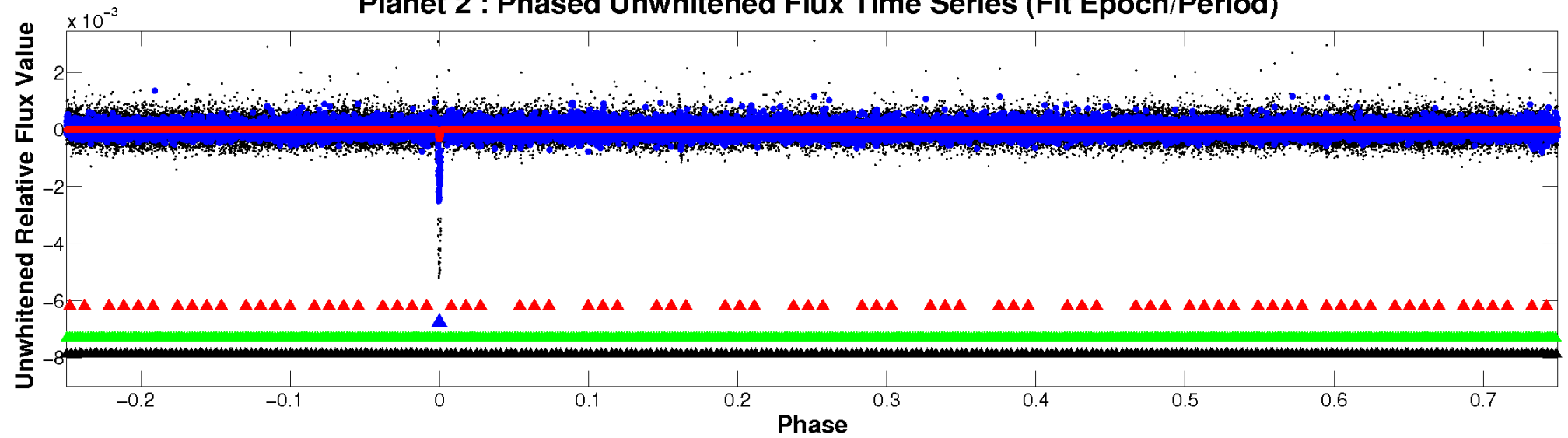
ALT Odd/Even

TCE 003218908-02

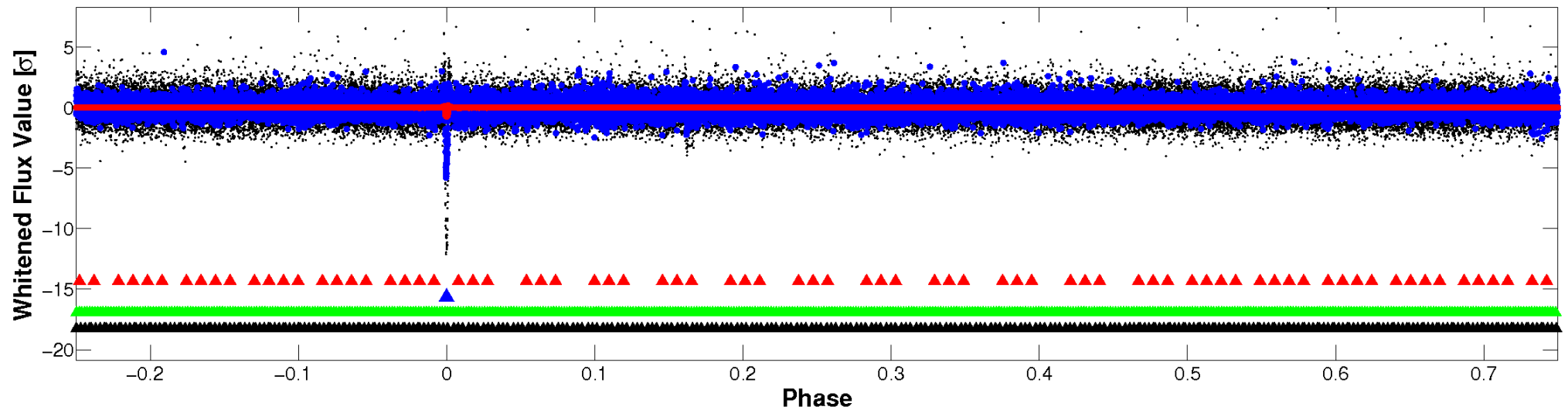


Non-Whitened Vs. Whitened Light Curve

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

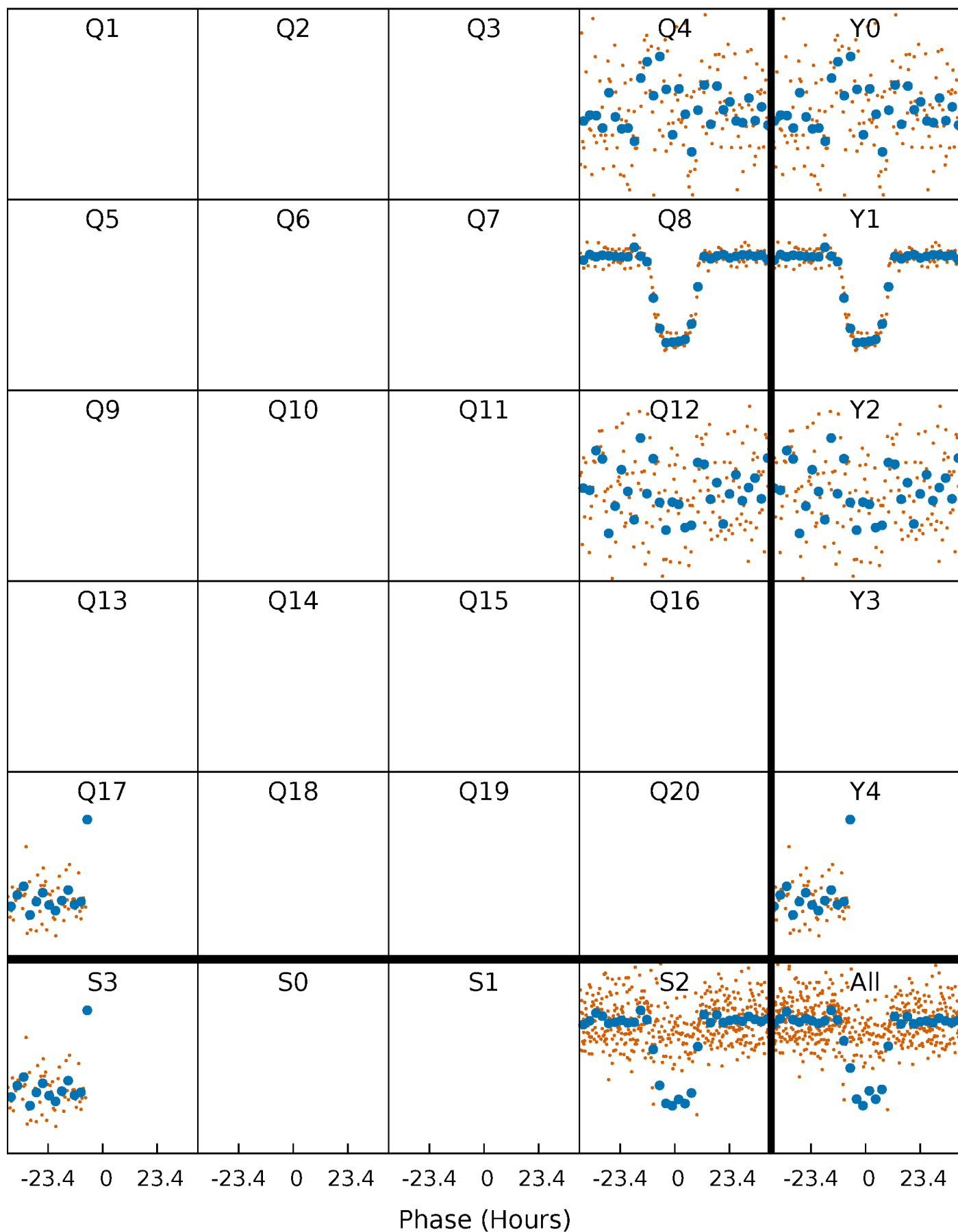


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



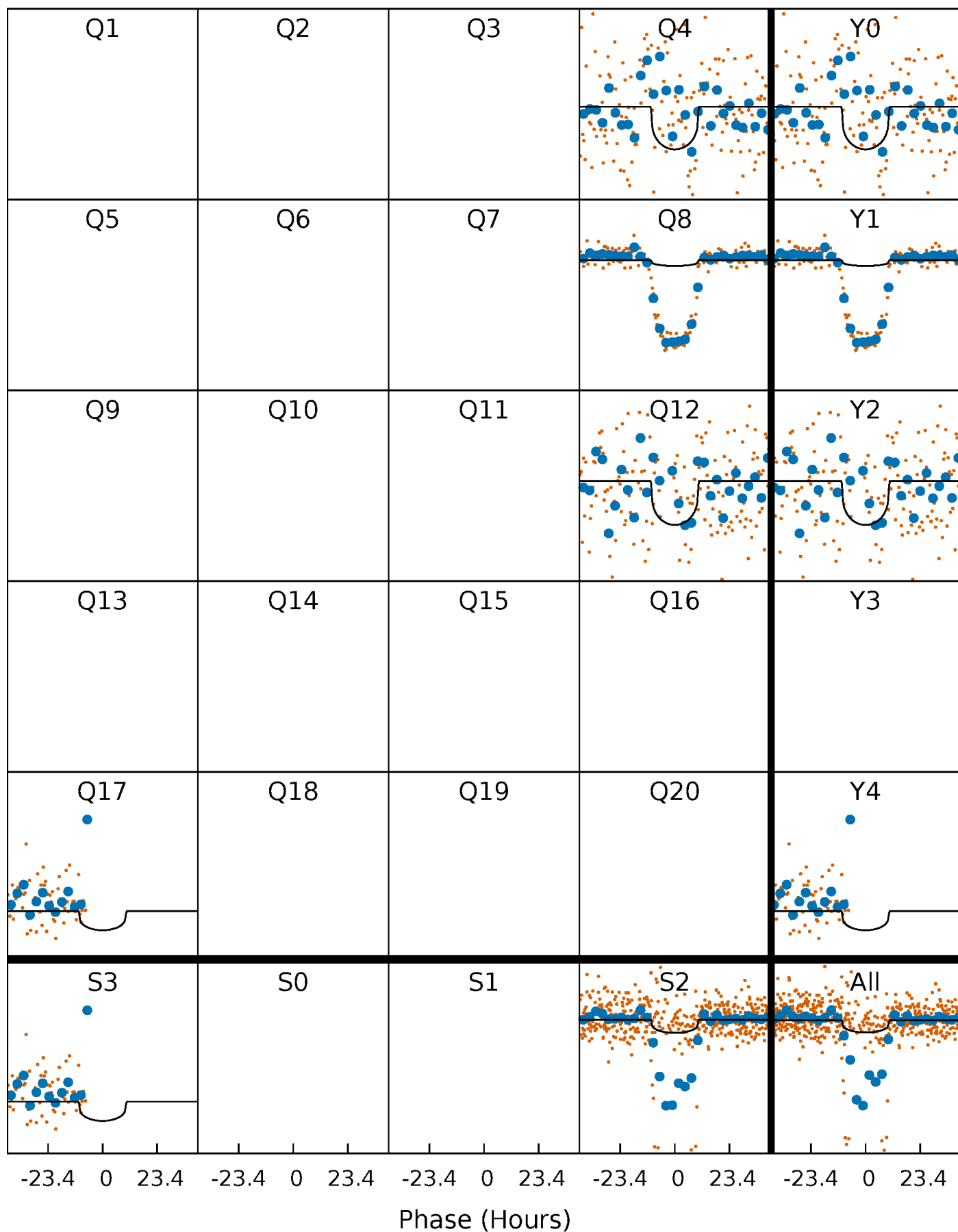
PDC Quarter-Phased Transit Curves

TCE 003218908-02 $P=412.312499$ Days $T_0=354.367938$ (BKJD)



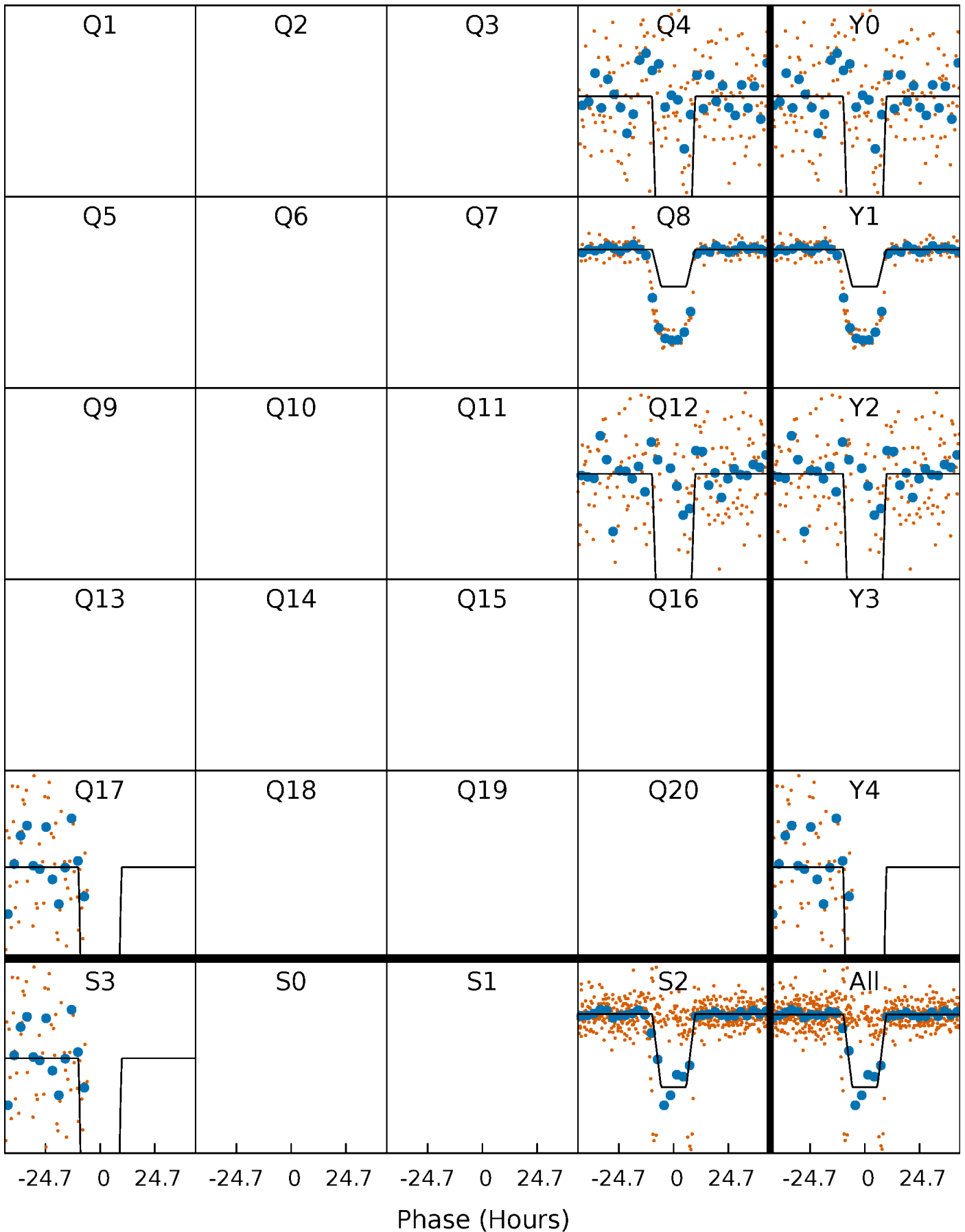
DV Quarter-Phased Transit Curves

TCE 003218908-02 $P=412.312499$ Days $T_0=354.367938$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

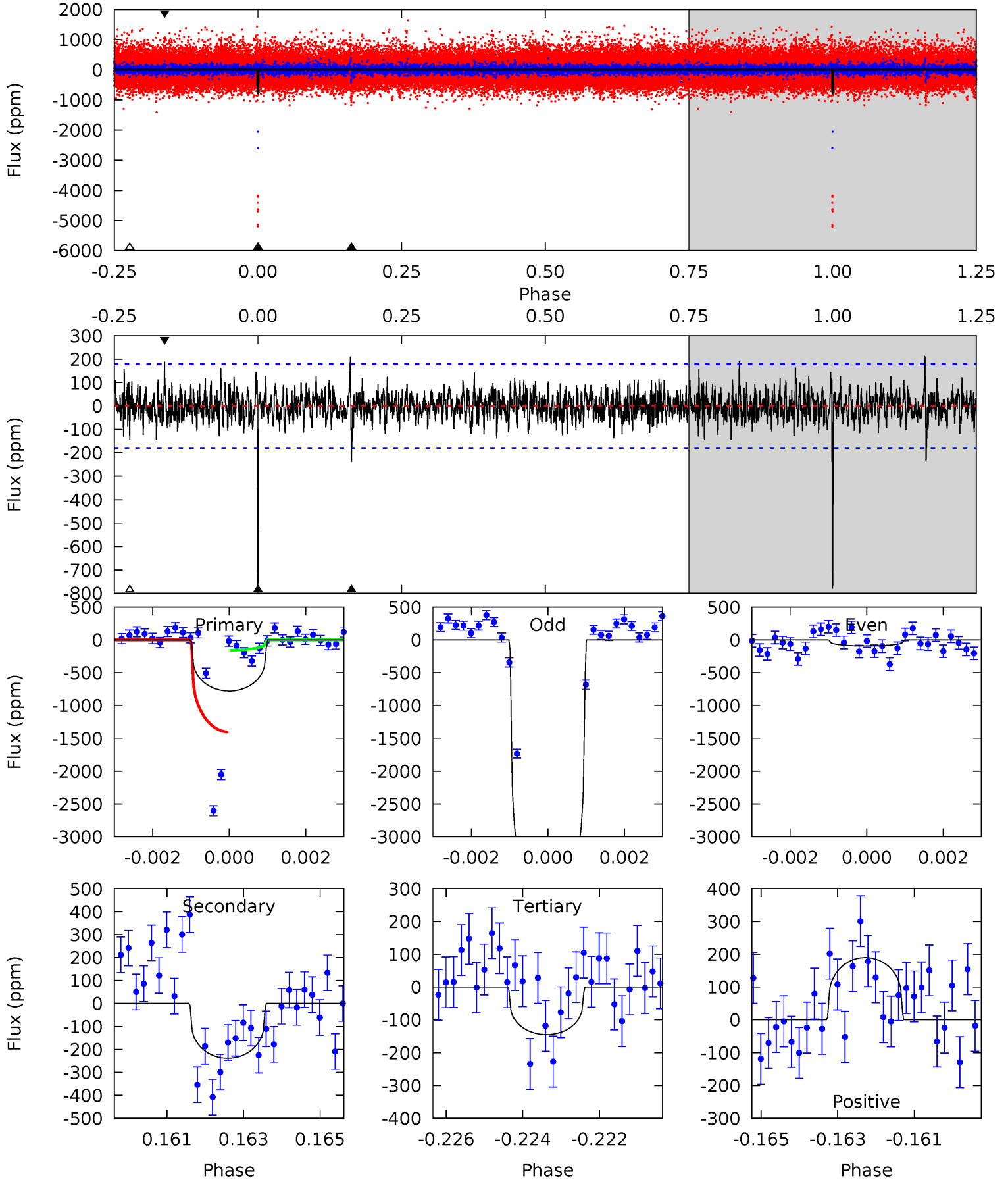
TCE 003218908-02 P=412.267507 Days $T_0=354.440956$ (BKJD)



DV Model-Shift Uniqueness Test

003218908-02, P = 412.312499 Days, E = 354.367938 Days

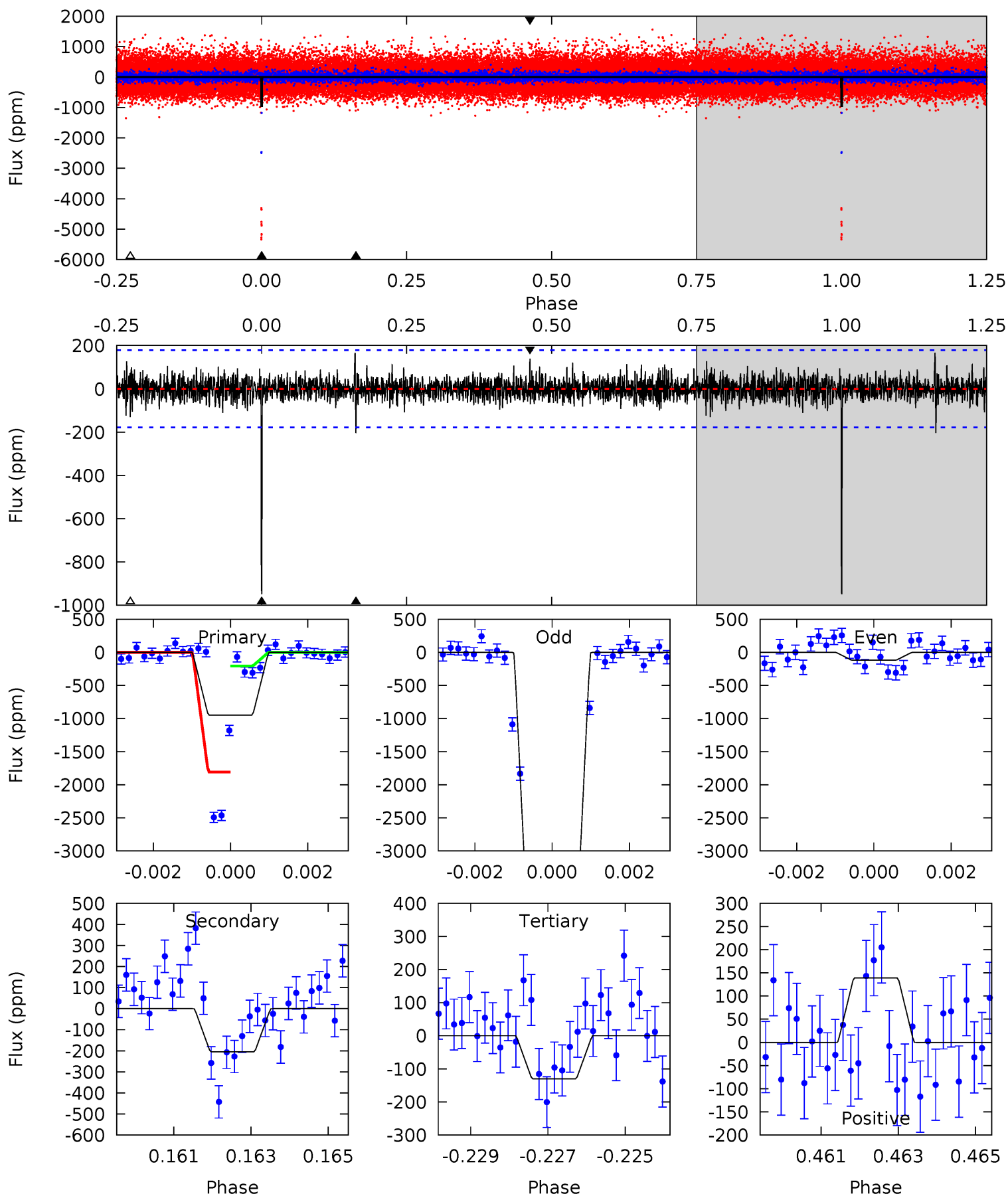
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	7.09	4.31	5.64	5.32	3.08	1.37	18.9	17.5	2.78	1.45	74.1	10.3	0.21	18.5



Alt Model-Shift Uniqueness Test

003218908-02, P = 412.267507 Days, E = 354.440956 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.4	6.13	3.90	4.16	5.33	3.09	1.03	24.5	24.2	2.23	1.97	80.4	10.2	0.15	23.9



Stellar Parameters For KIC 003218908

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4941^{+49}_{-118}	$3.317^{+0.210}_{-0.105}$	$0.400^{+0.050}_{-0.250}$	$4.885^{+0.701}_{-1.636}$	$1.808^{+0.181}_{-0.578}$	$0.022^{+0.028}_{-0.007}$
	+1%/-2%	+6%/-3%	+12%/-62%	+14%/-33%	+10%/-32%	+130%/-30%
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 003218908-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-238 ± 34	$10.25^{+7.41}_{-6.32}$	580^{+27}_{-43}	4401^{+2240}_{-750}	2153^{+11871}_{-1439}
Alt.	-205 ± 33	$23.12^{+9.83}_{-9.44}$	580^{+27}_{-41}	3258^{+516}_{-288}	362^{+611}_{-181}

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

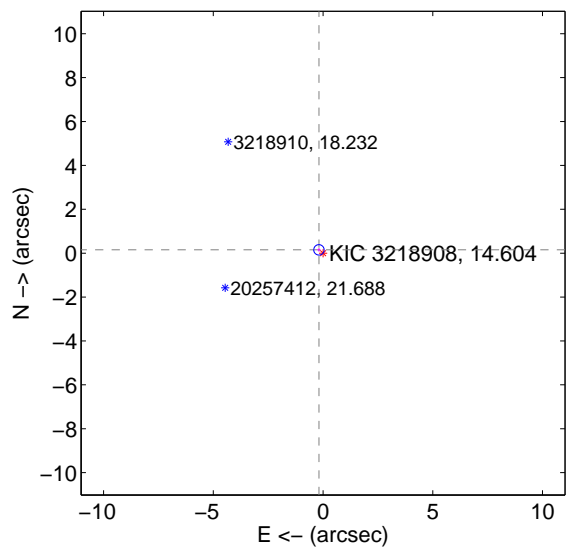
Supplemental centroid analysis for 003218908-02. Kepler magnitude: 14.60. Transit SNR 5.48

There are 1 quarters with good PRF difference image offsets

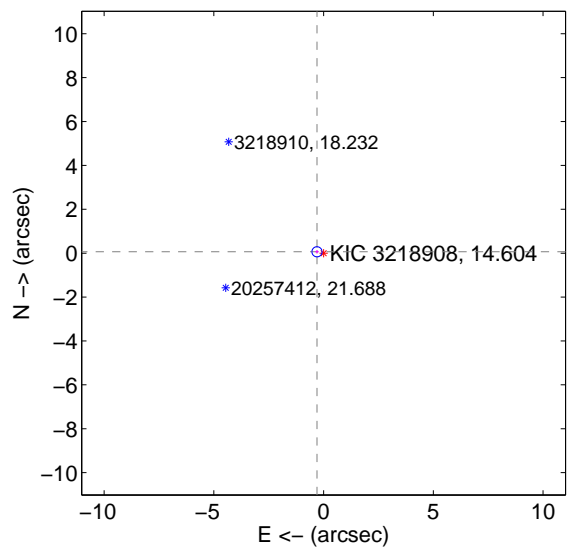
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.241 \pm 0.079	3.05	0.187 \pm 0.077	0.151 \pm 0.082
PRF-fit source offset from KIC position	0.307 \pm 0.077	3.98	0.300 \pm 0.077	0.063 \pm 0.082
photometric centroid source offset	3.50 \pm 1.89	1.85	0.15 \pm 2.13	-3.50 \pm 1.89

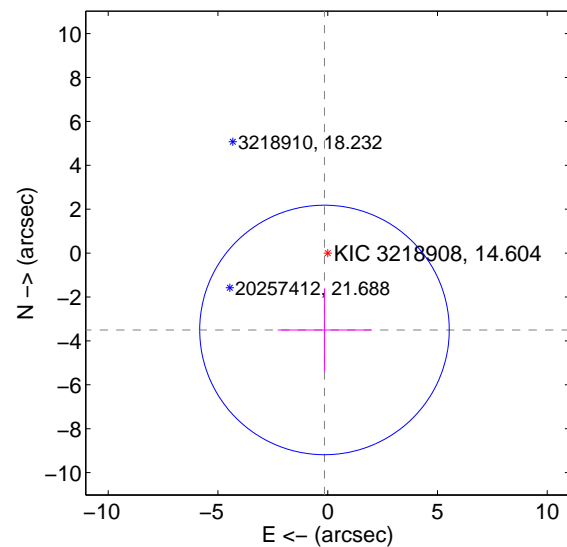
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

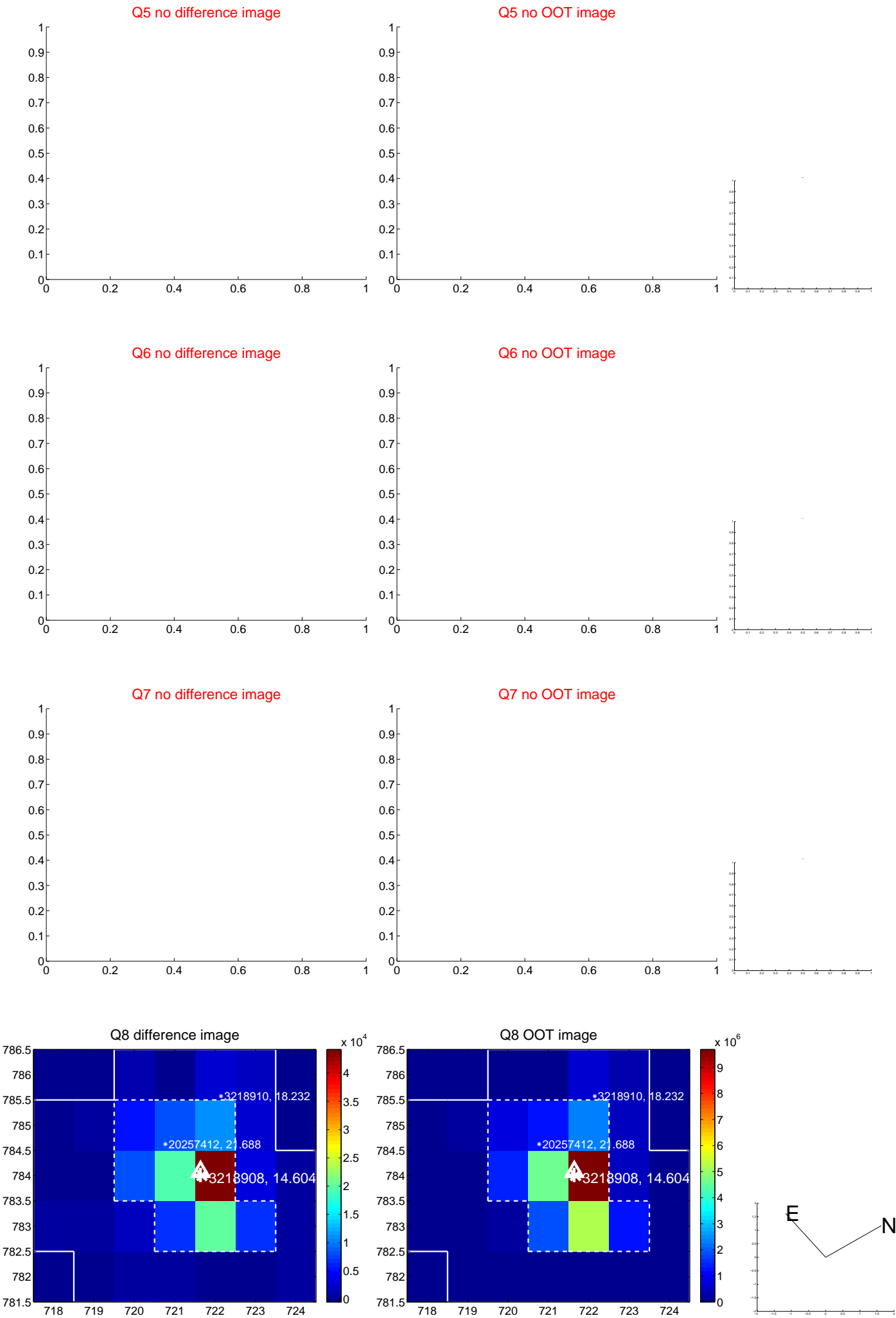


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

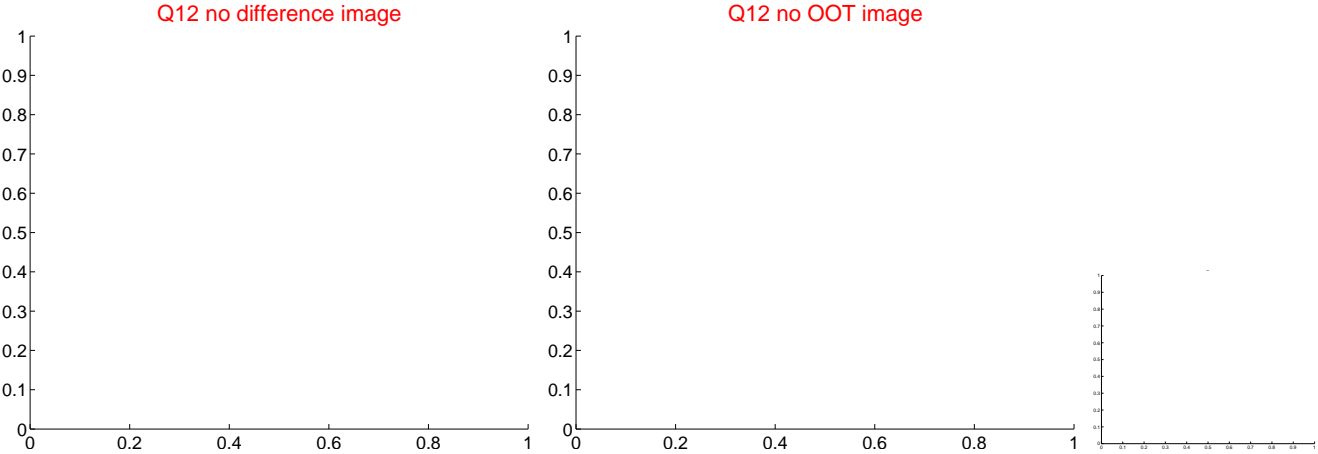
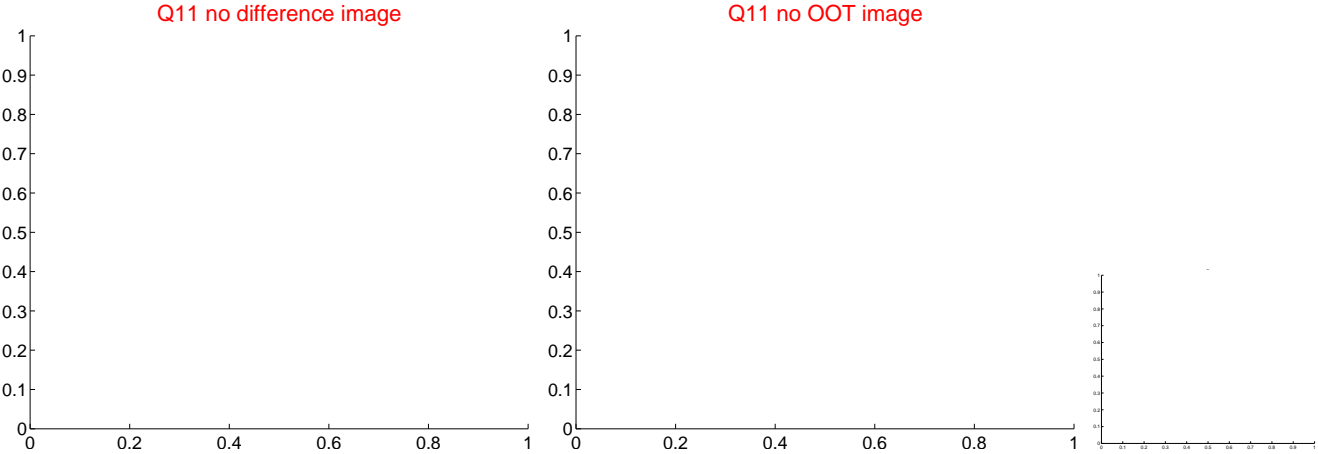
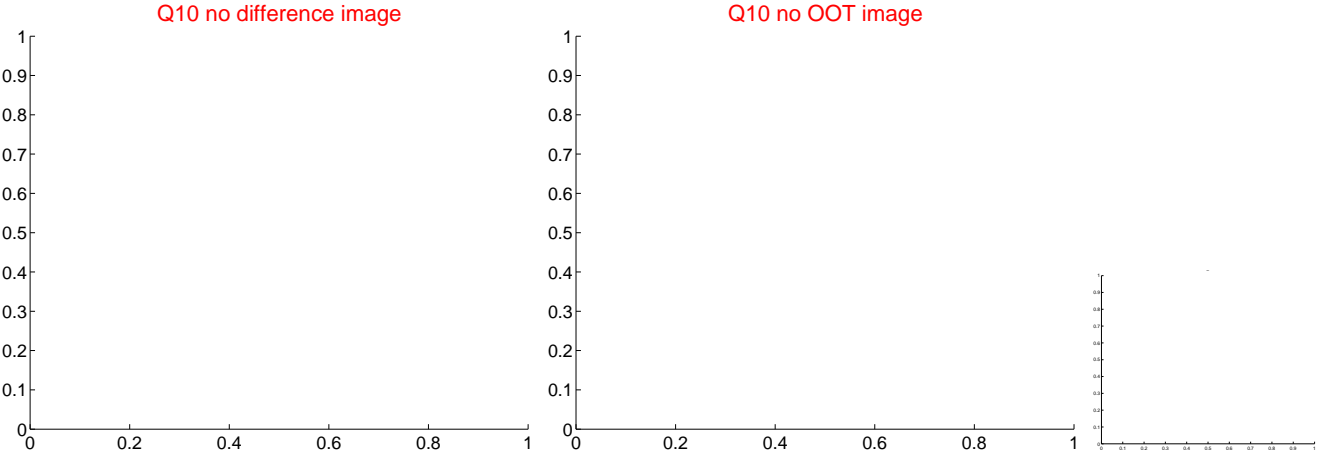
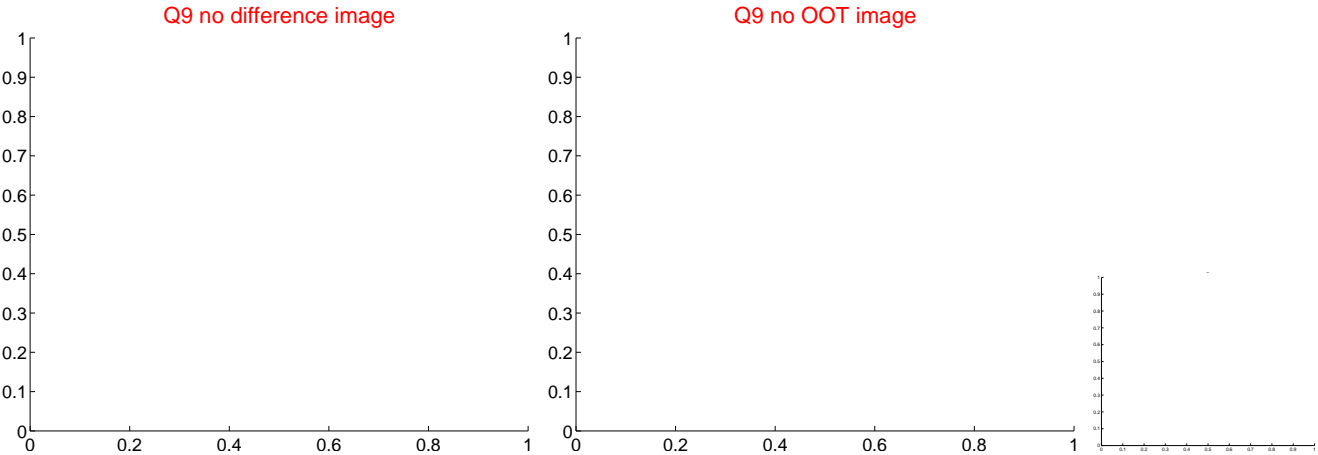
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



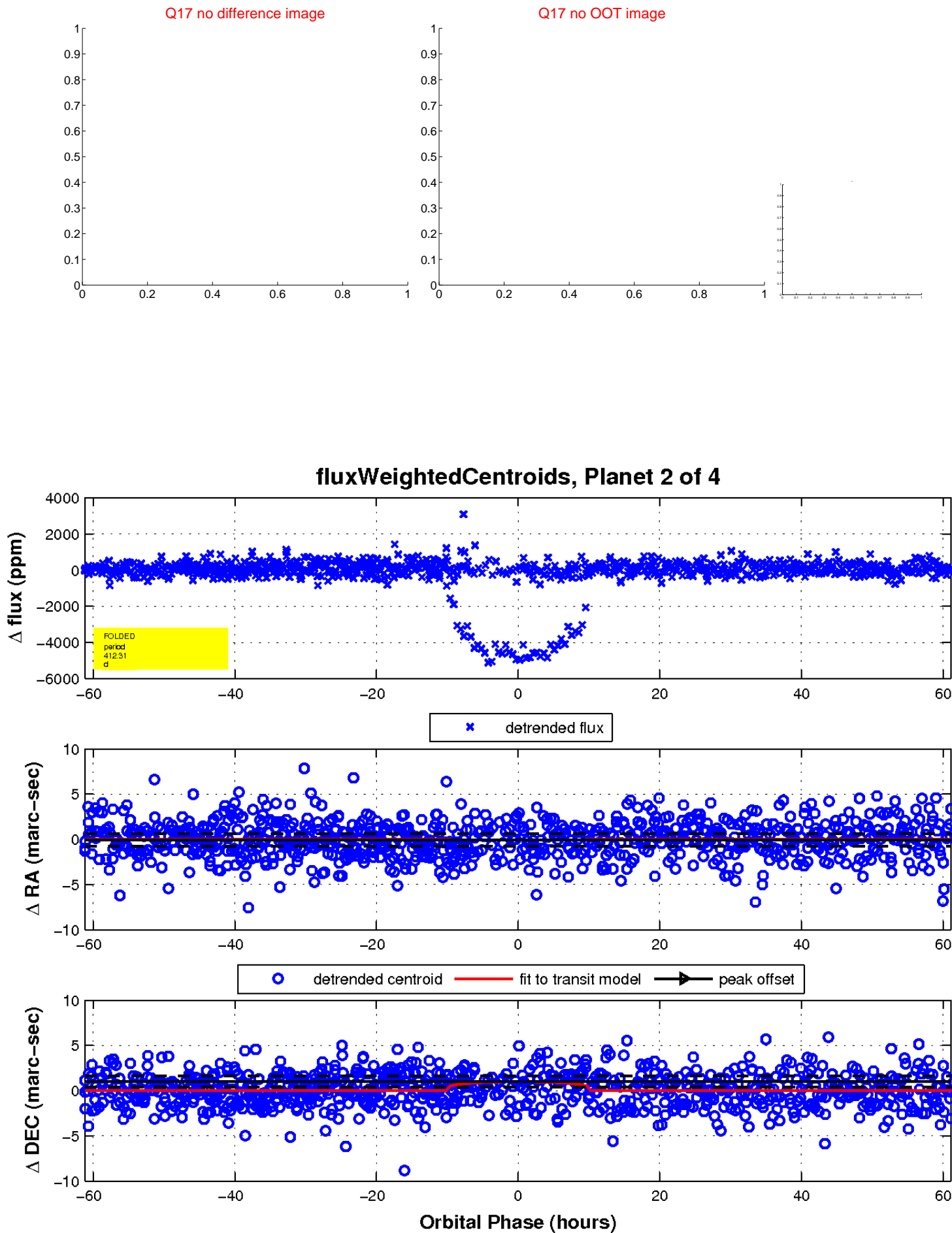
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

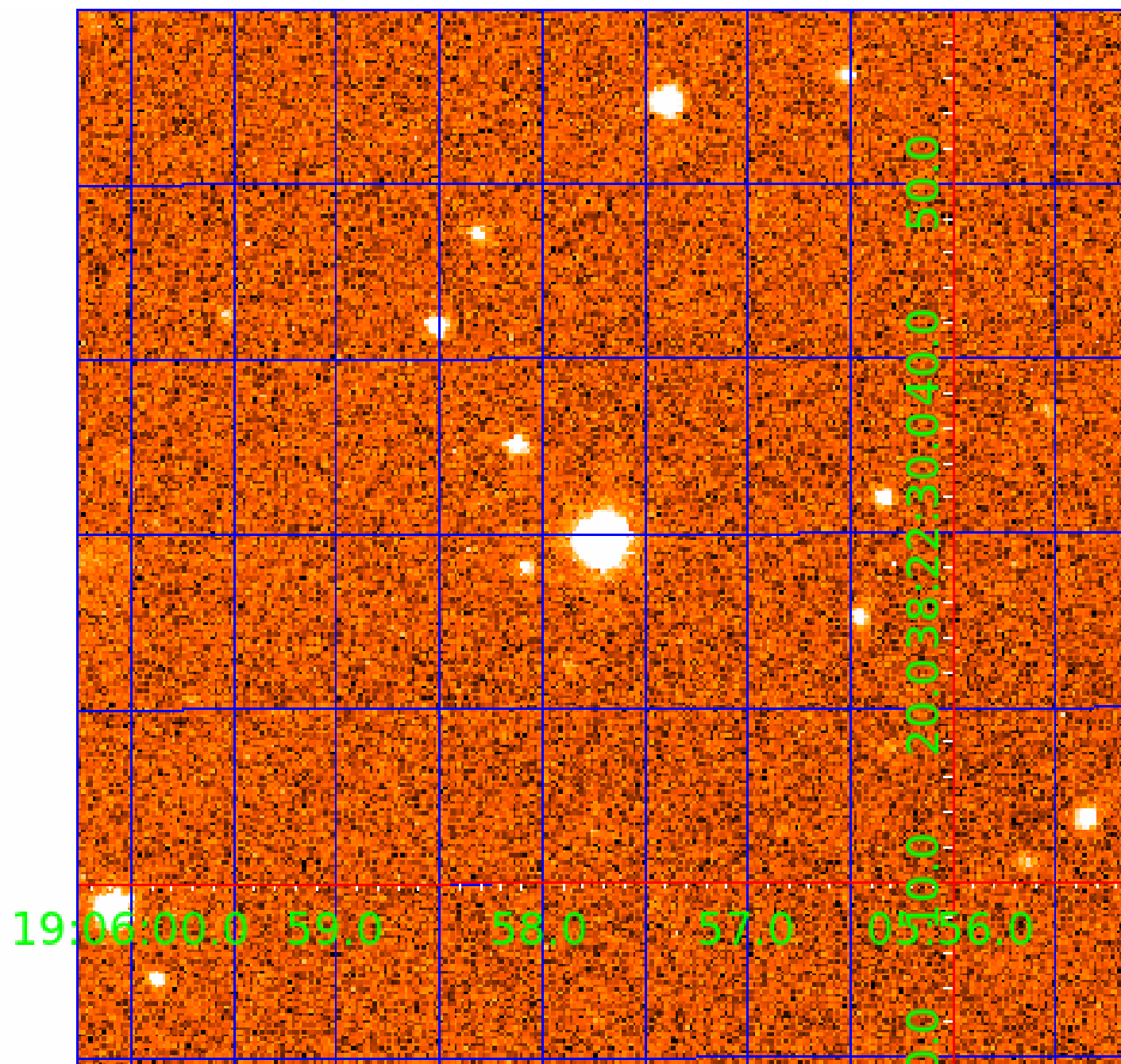


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003218908

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})
003218908-01	OBS	1108.01	18.925401	149.494255	621.0	3.989	33.5	35.7	4.88	4941	13.95	444.63
003218908-02	OBS	No	412.312499	354.367938	326.5	20.433	34.1	5.5	4.88	4941	9.05	7.31
003218908-03	OBS	1108.02	1.475304	131.838288	121.8	2.325	21.0	20.1	4.88	4941	6.57	13352.26
003218908-04	OBS	1108.03	4.152456	134.578583	198.7	2.635	16.0	19.2	4.88	4941	7.70	3359.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003218908-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003218908-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003218908-03	OBS	PC	0.99	0	0	0	0	NO_COMMENT
003218908-04	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.

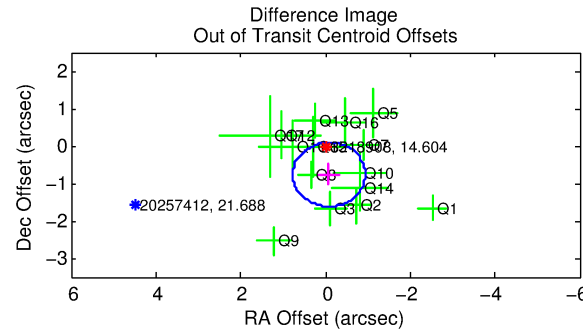
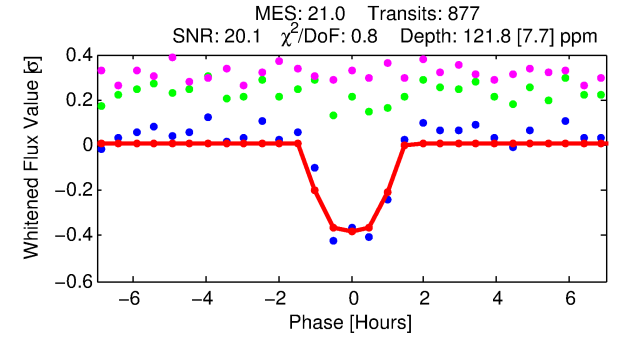
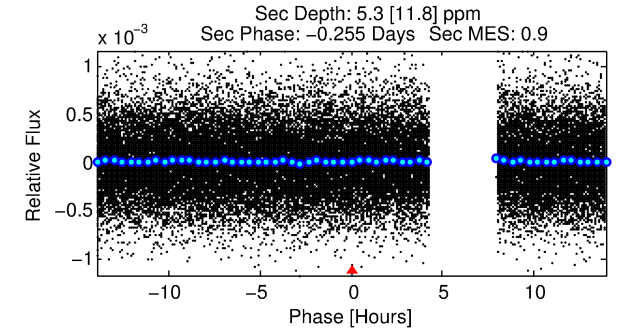
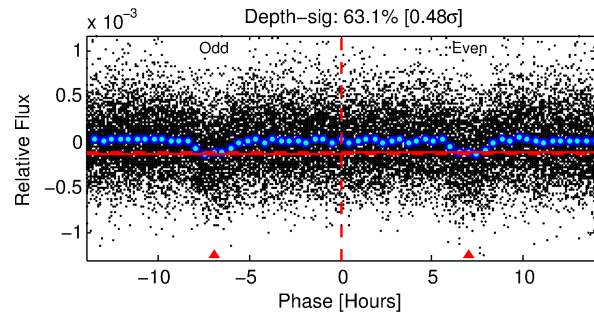
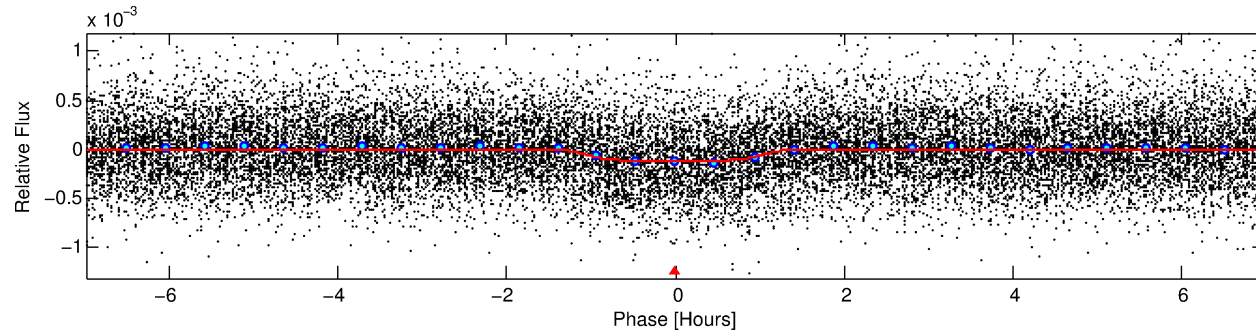
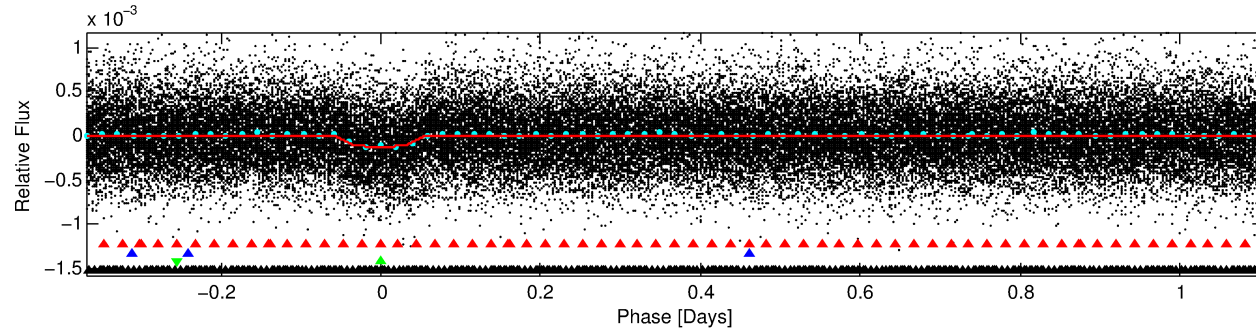
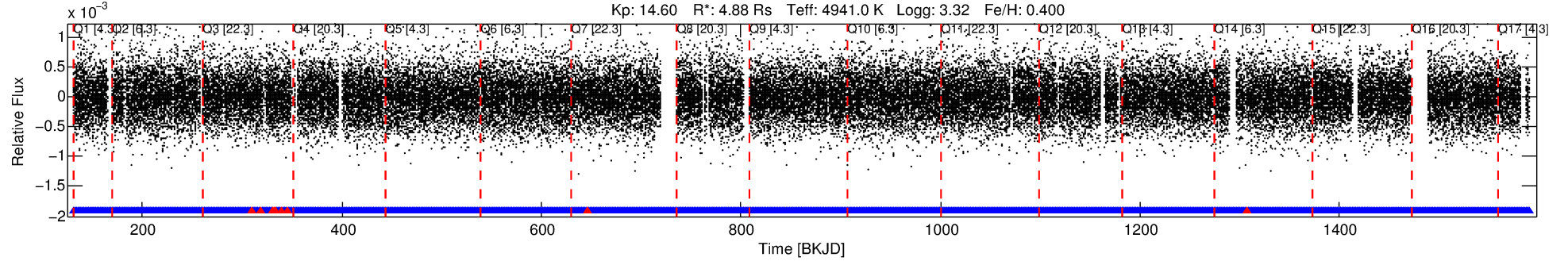
Ephemeris Match Information For 003218908-03

No Significant Match Found

DV One-Page Summary

KIC: 3218908 Candidate: 3 of 4 Period: 1.475 d

KOI: K01108.02 Corr: 0.945



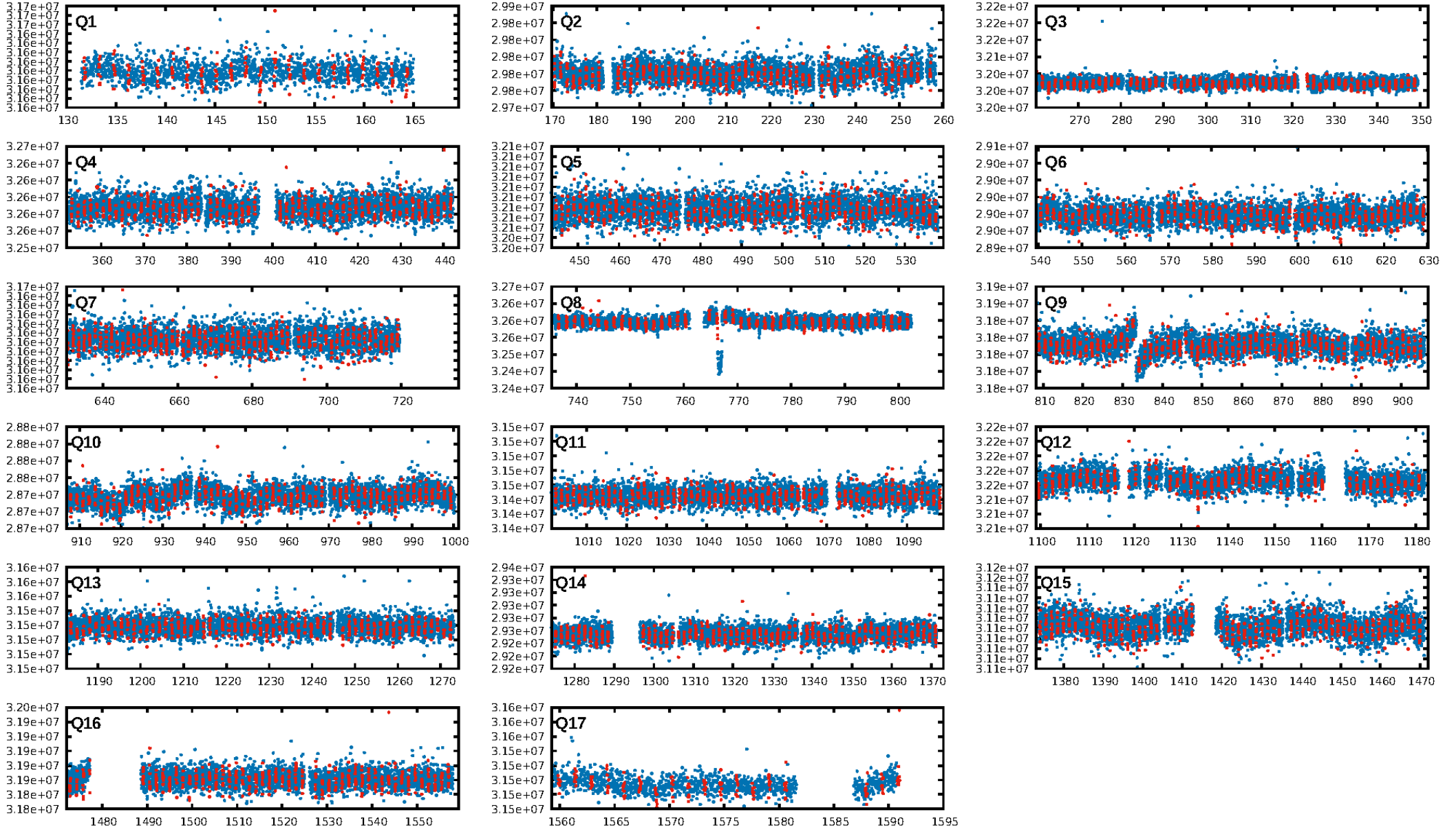
DV Fit Results:

Period = 1.47530 [0.00001] d
Epoch = 131.8383 [0.0017] BKJD
Rp/R* = 0.0123 [0.0059]
a/R* = 2.47 [3.83]
b = 0.90 [0.42]
Seff = 13352.26 [5388.95]
Teff = 2741 [277] K
Rp = 6.57 [3.84] Re
a = 0.0309 [0.0085] AU
Ag = 0.06 [0.16] [-5.91 σ]
Teffp = 2139 [1288] K [-0.46 σ]

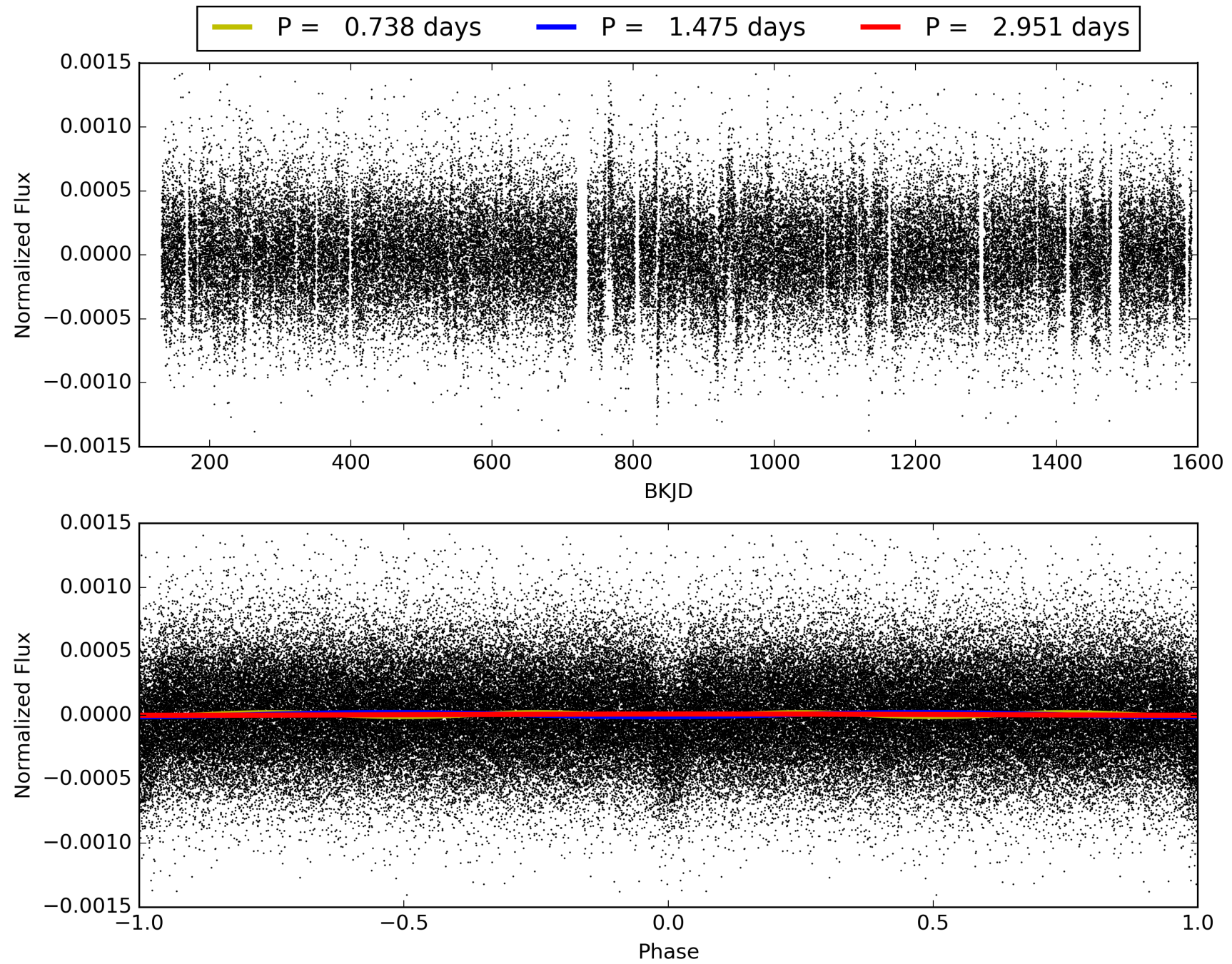
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [18.28 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.35e-96
RollingBand-fgt: 0.99 [831/840]
GhostDiagnostic-chr: 2.611
Centroid-sig: 12.4%
Centroid-so: 0.897 arcsec [1.31 σ]
OotOffset-rm: 0.768 arcsec [2.69 σ]
KicOffset-rm: 0.801 arcsec [2.79 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003218908-03, PDC Light Curves

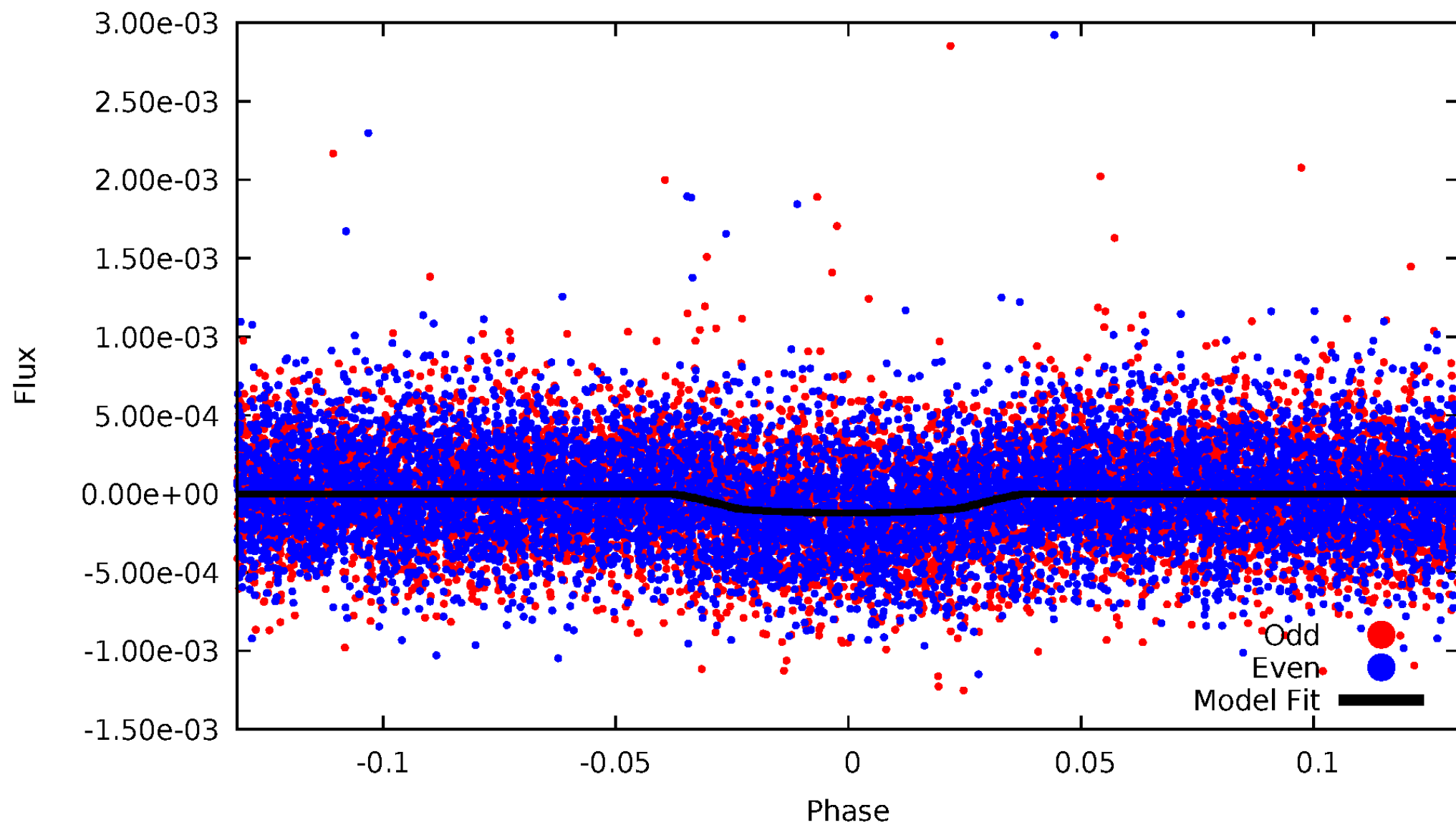


TCE 003218908-03



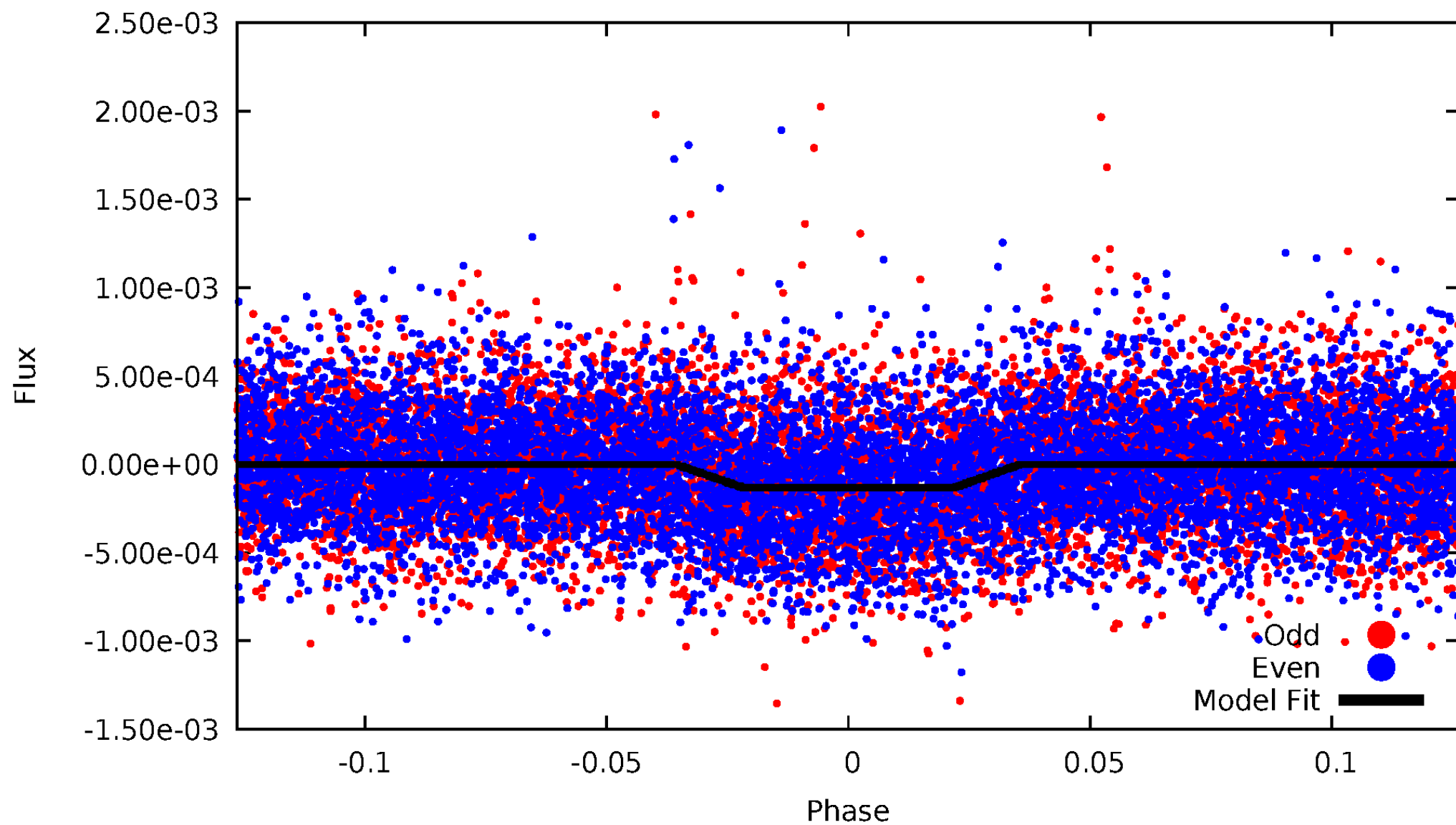
DV Odd/Even

TCE 003218908-03



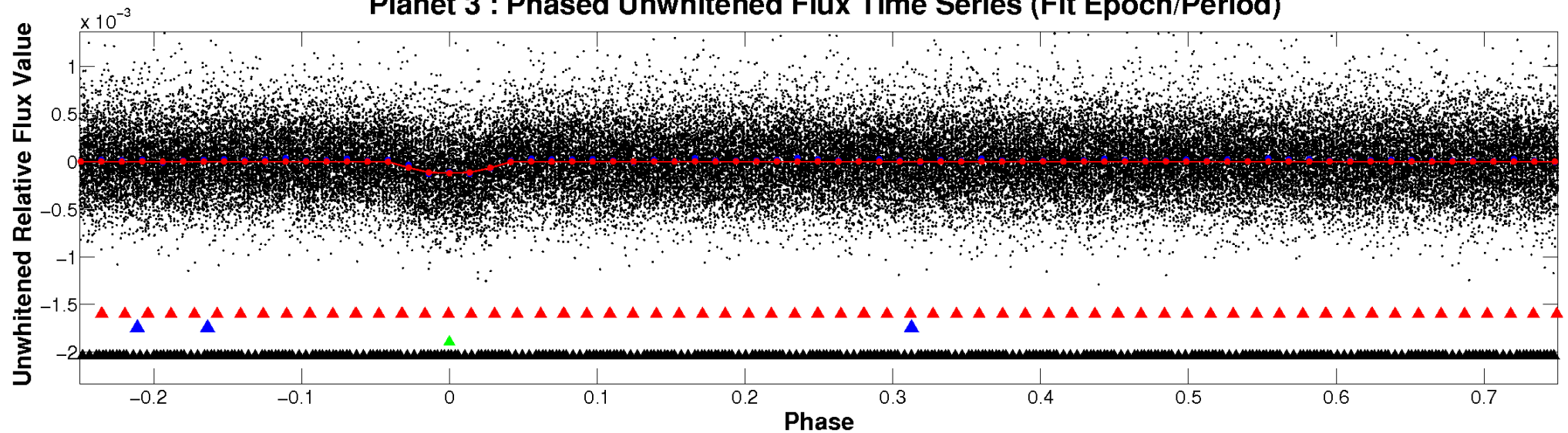
ALT Odd/Even

TCE 003218908-03

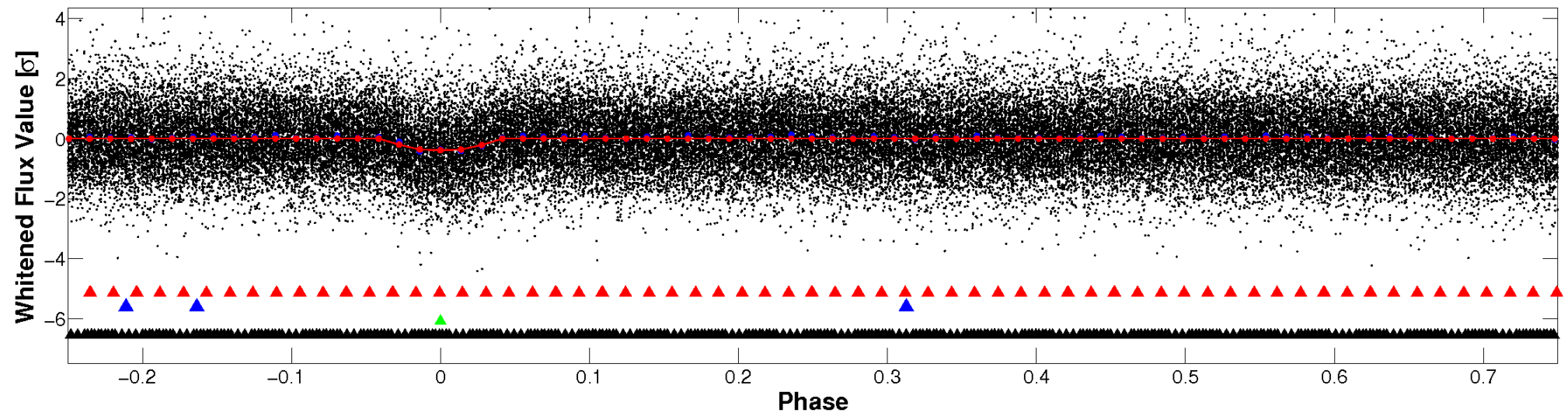


Non-Whitened Vs. Whitened Light Curve

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

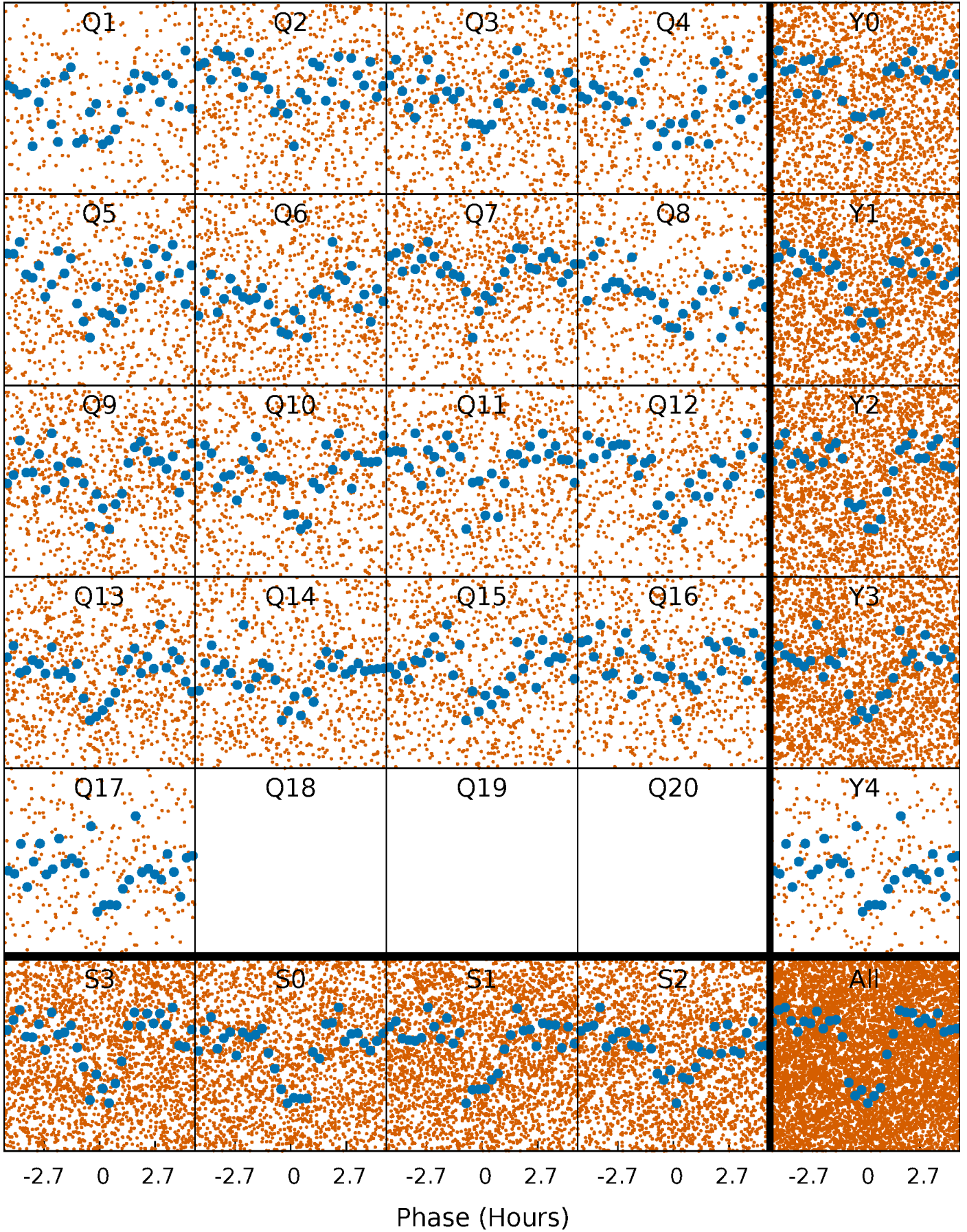


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



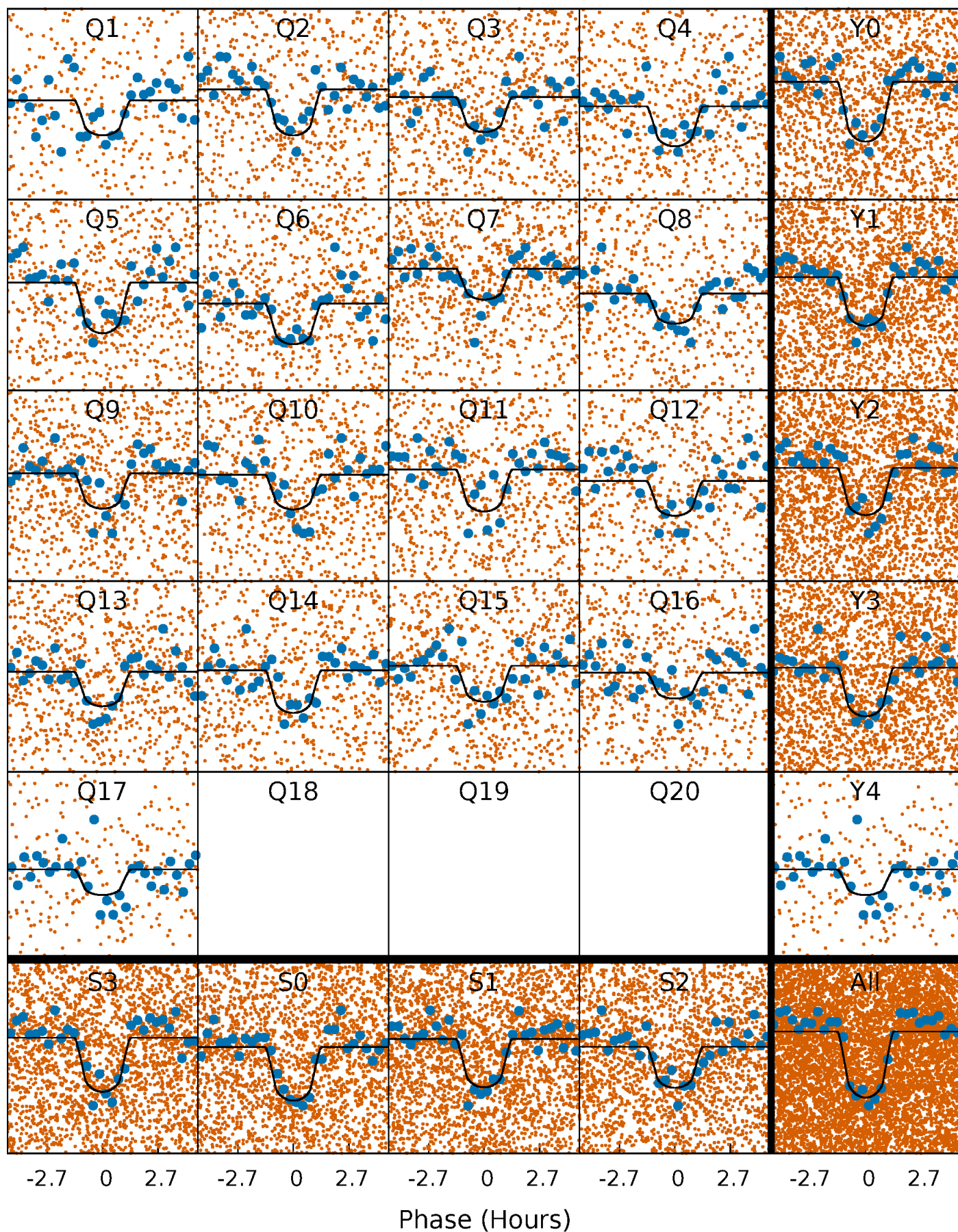
PDC Quarter-Phased Transit Curves

TCE 003218908-03 $P = 1.475304$ Days $T_0 = 131.838288$ (BKJD)



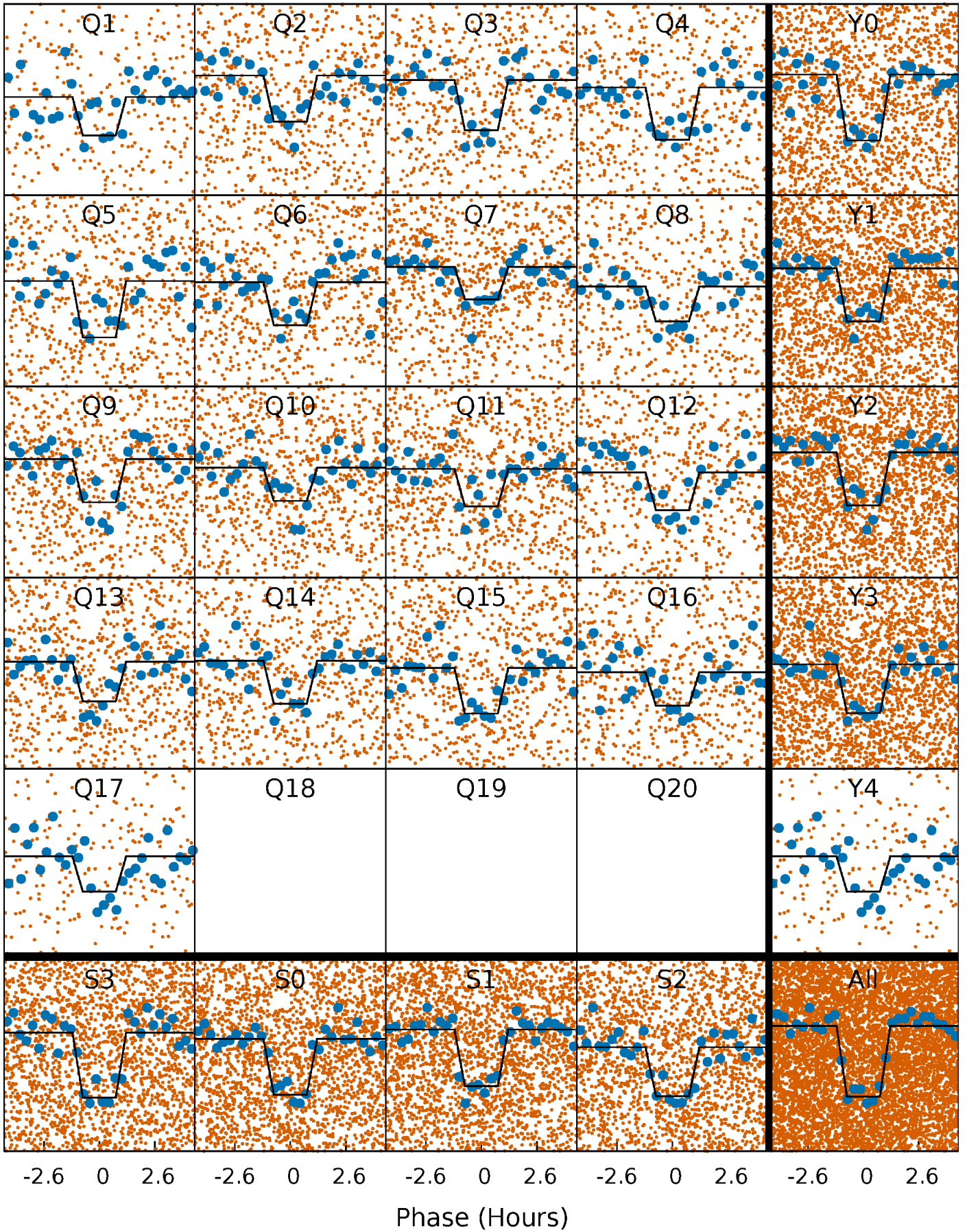
DV Quarter-Phased Transit Curves

TCE 003218908-03 P= 1.475304 Days $T_0=131.838288$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

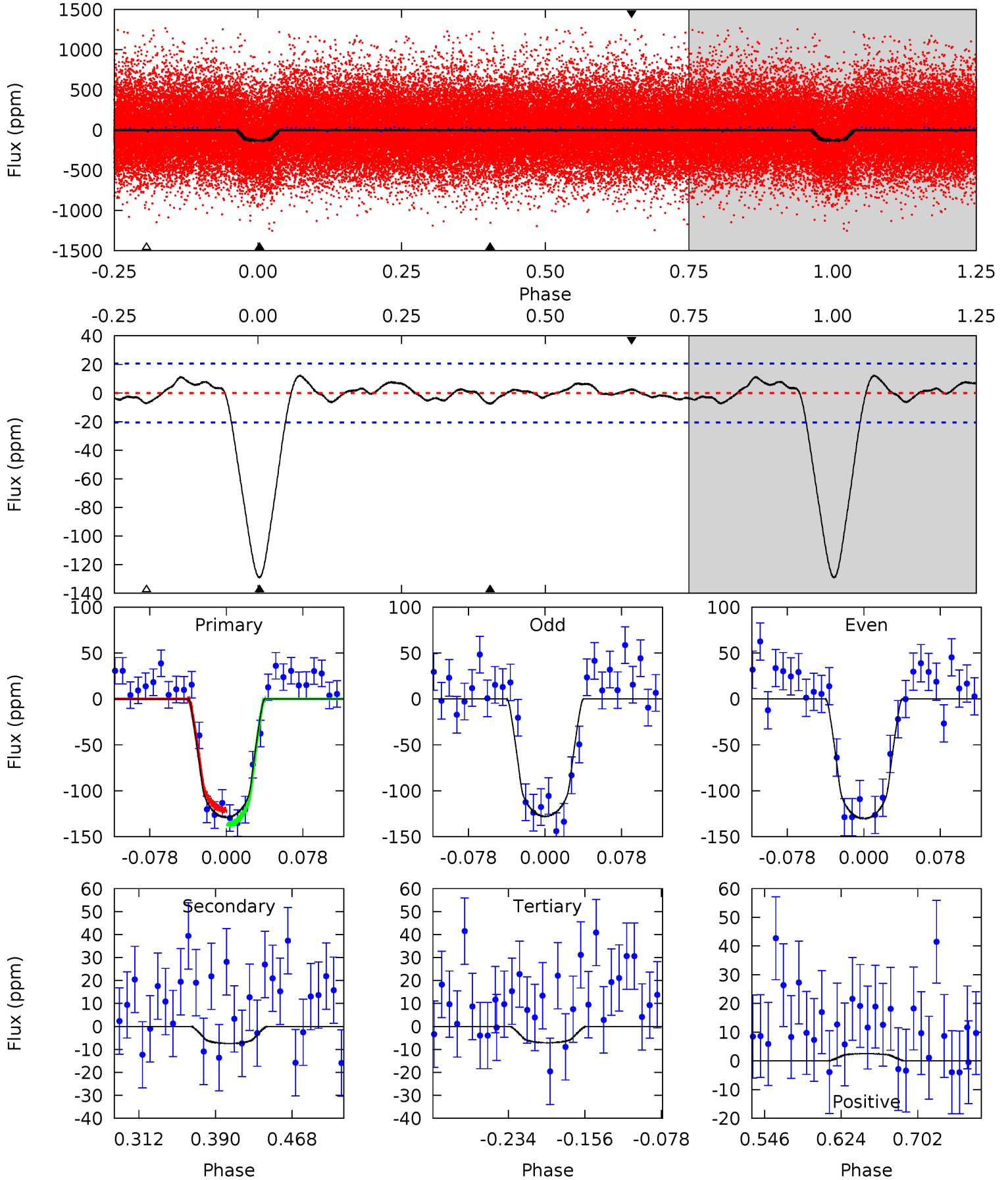
TCE 003218908-03 P= 1.475315 Days $T_0=131.836733$ (BKJD)



DV Model-Shift Uniqueness Test

003218908-03, P = 1.475304 Days, E = 130.362984 Days

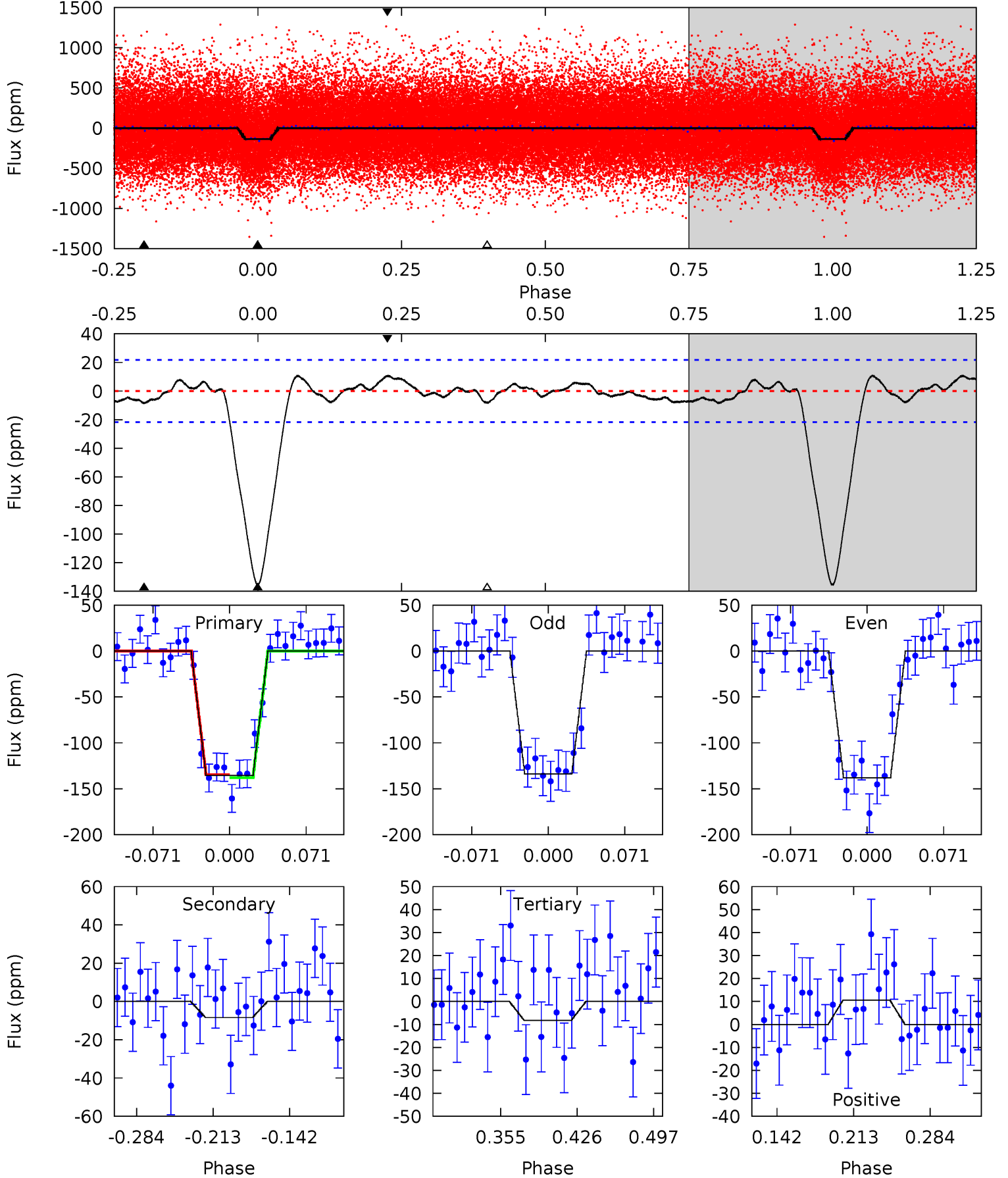
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.9	1.67	1.60	0.56	4.62	1.76	0.96	27.3	28.3	0.07	1.11	0.28	0.90	0.09	1.80



Alt Model-Shift Uniqueness Test

003218908-03, P = 1.475315 Days, E = 130.361418 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.9	1.79	1.76	2.25	4.64	1.81	0.94	27.1	26.6	0.03	-0.45	0.43	0.91	0.07	0.33



Stellar Parameters For KIC 003218908

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4941^{+49}_{-118}	$3.317^{+0.210}_{-0.105}$	$0.400^{+0.050}_{-0.250}$	$4.885^{+0.701}_{-1.636}$	$1.808^{+0.181}_{-0.578}$	$0.022^{+0.028}_{-0.007}$
	+1%/-2%	+6%/-3%	+12%/-62%	+14%/-33%	+10%/-32%	+130%/-30%
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 003218908-03 / KOI 1108.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 4	$6.28^{+3.43}_{-3.04}$	3802^{+168}_{-283}	-3286^{+6071}_{-232}	$0.092^{+0.276}_{-0.068}$
Alt.	-8 ± 5	$6.09^{+3.12}_{-3.09}$	3800^{+183}_{-303}	-3218^{+6332}_{-273}	$0.112^{+0.349}_{-0.074}$

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 $A_{obs} \gg 1.0$

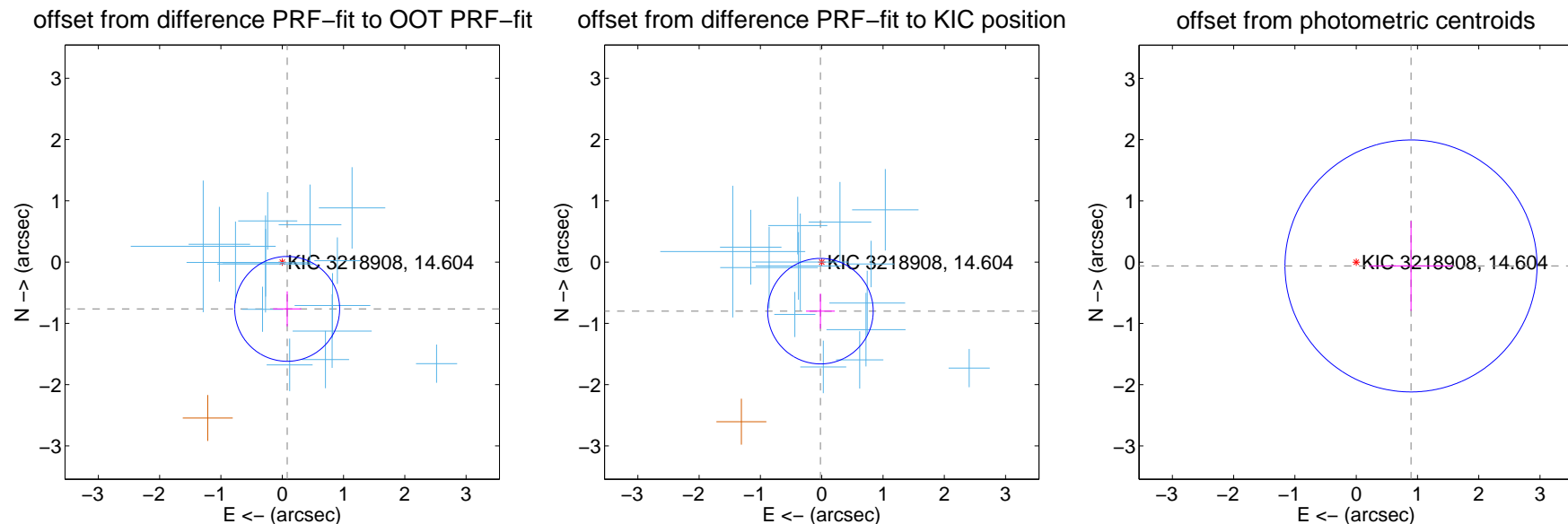
DV Centroid Data

Supplemental centroid analysis for 003218908-03. Kepler magnitude: 14.60. Transit SNR 20.13

There are 15 quarters with good PRF difference image offsets

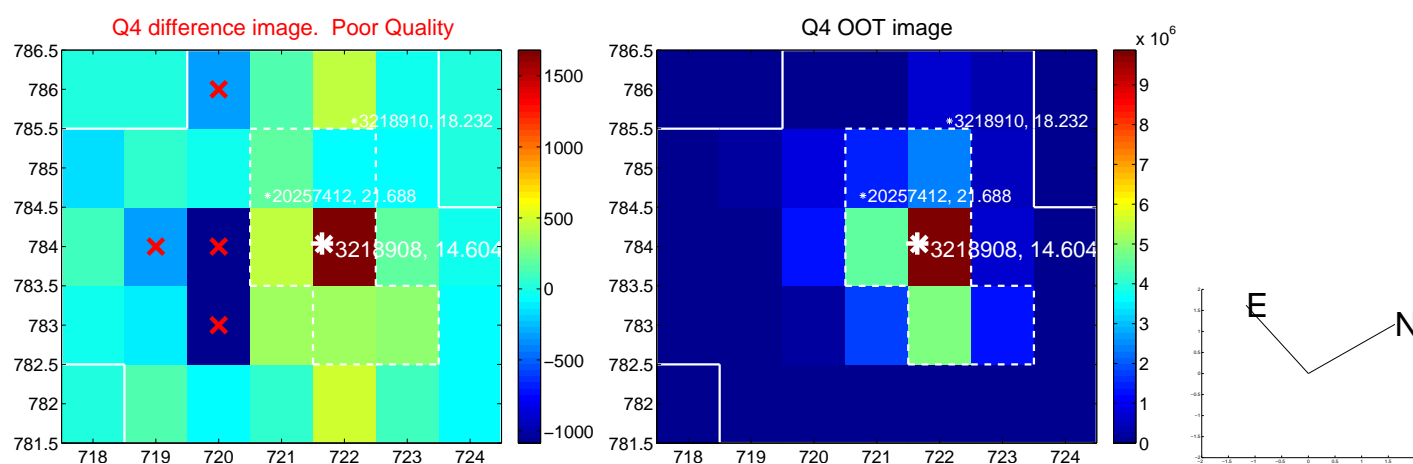
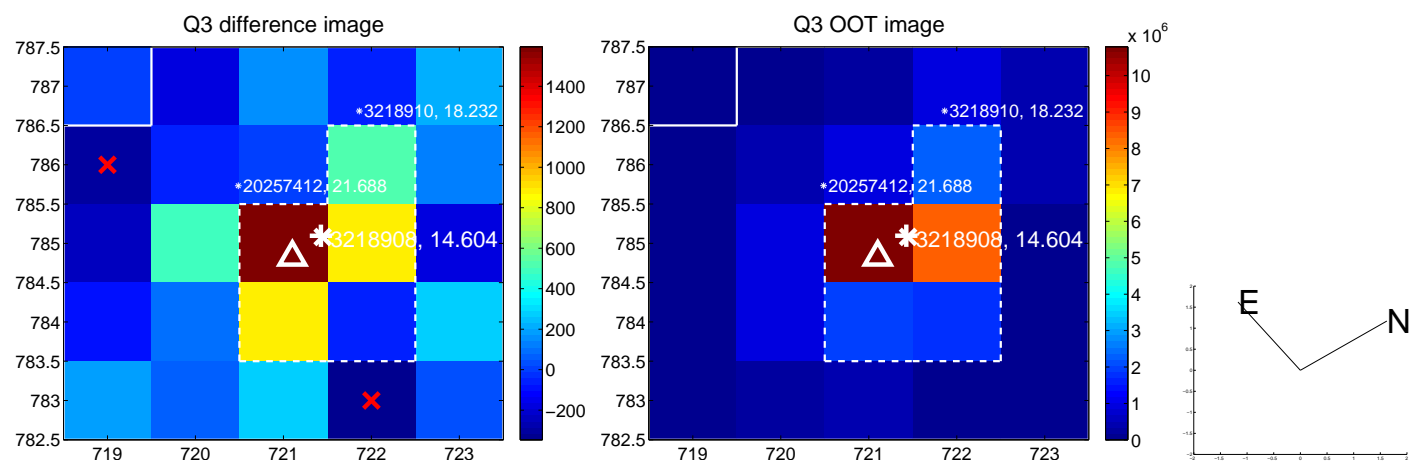
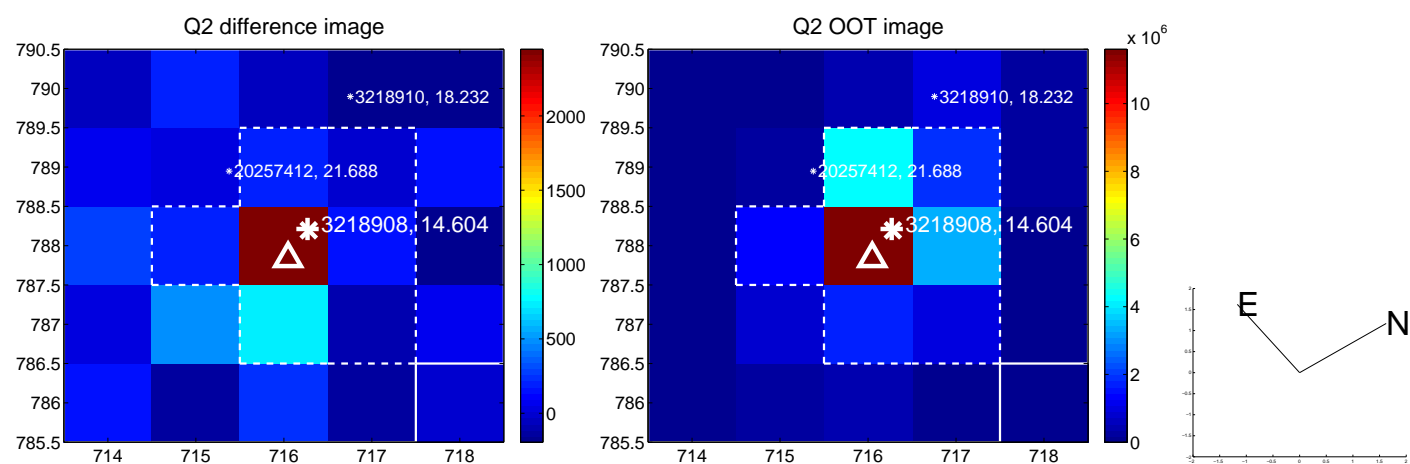
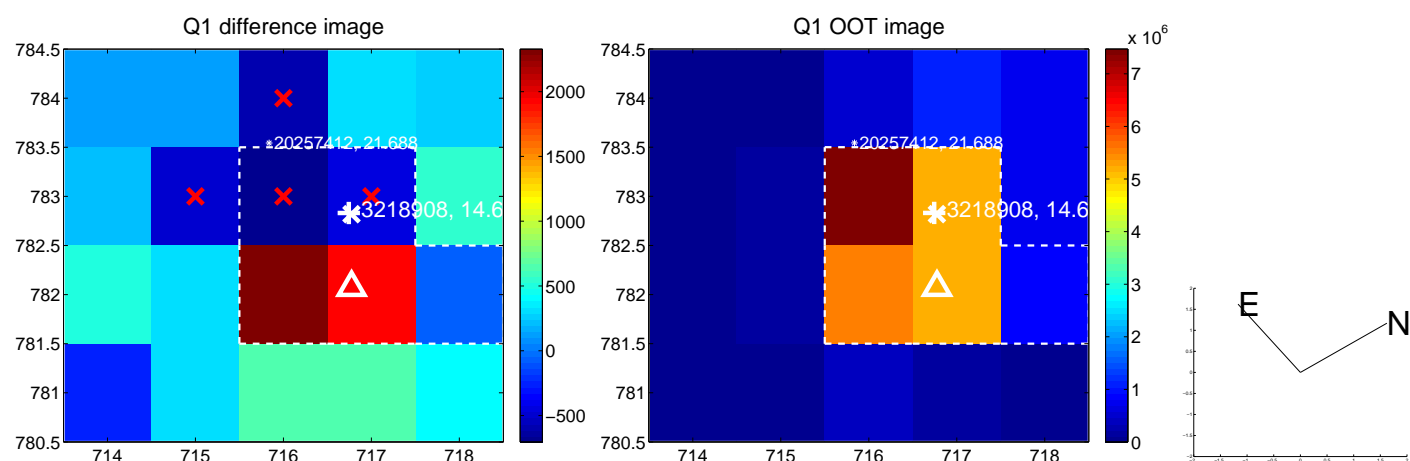
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.768 ± 0.285	2.69	-0.081 ± 0.229	-0.764 ± 0.286
PRF-fit source offset from KIC position	0.801 ± 0.287	2.79	0.021 ± 0.234	-0.801 ± 0.287
photometric centroid source offset	0.90 ± 0.69	1.31	-0.89 ± 0.69	-0.06 ± 0.73

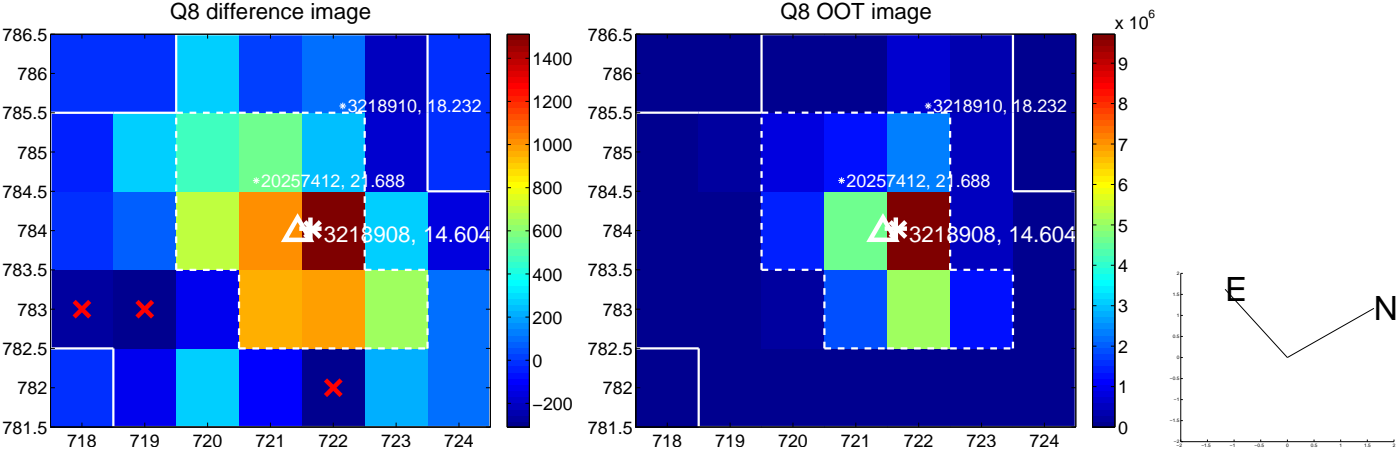
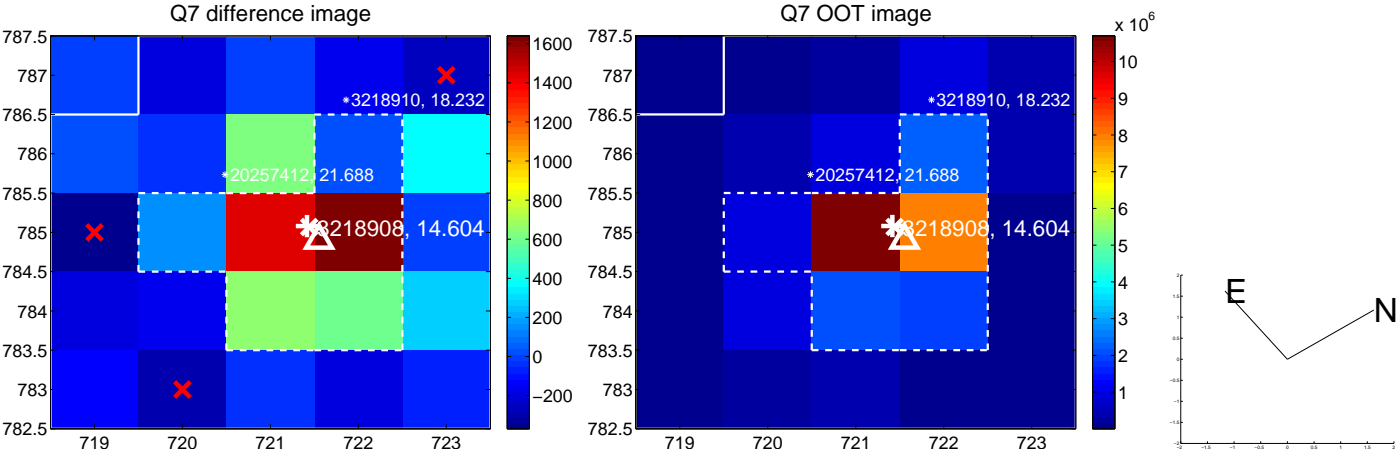
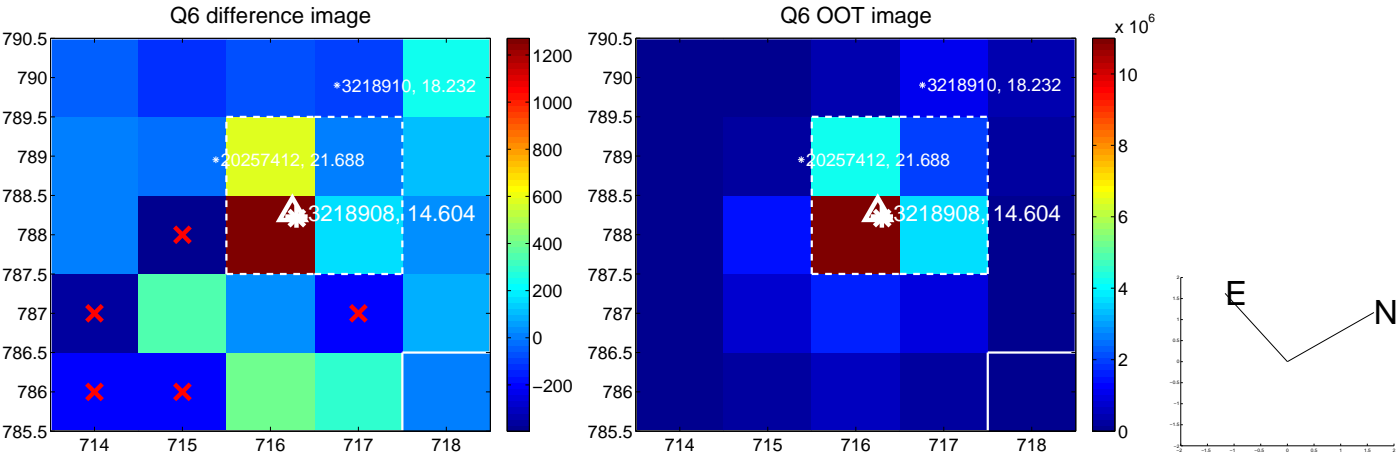
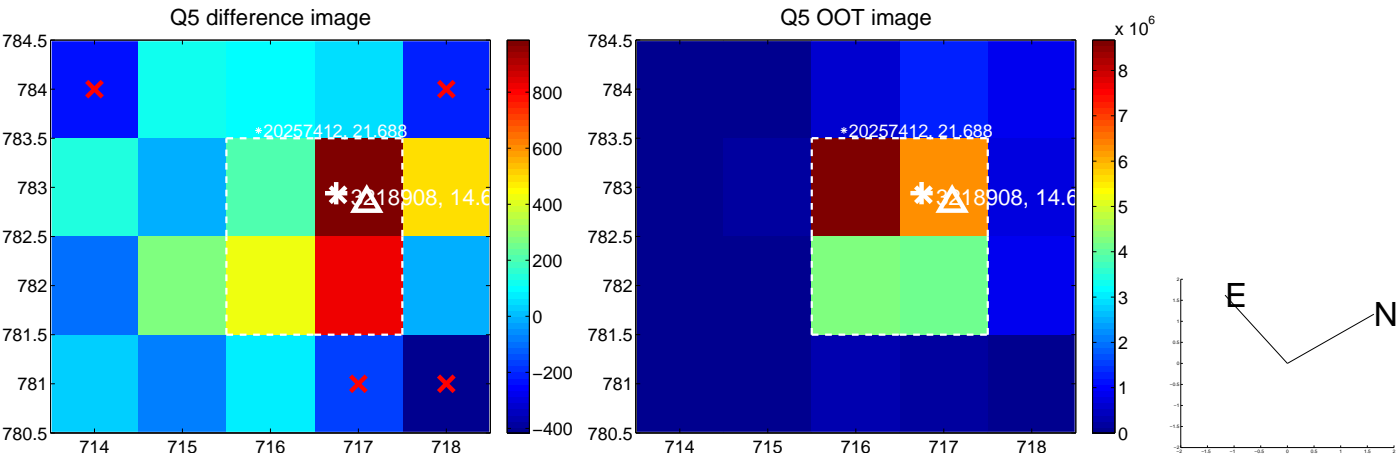


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

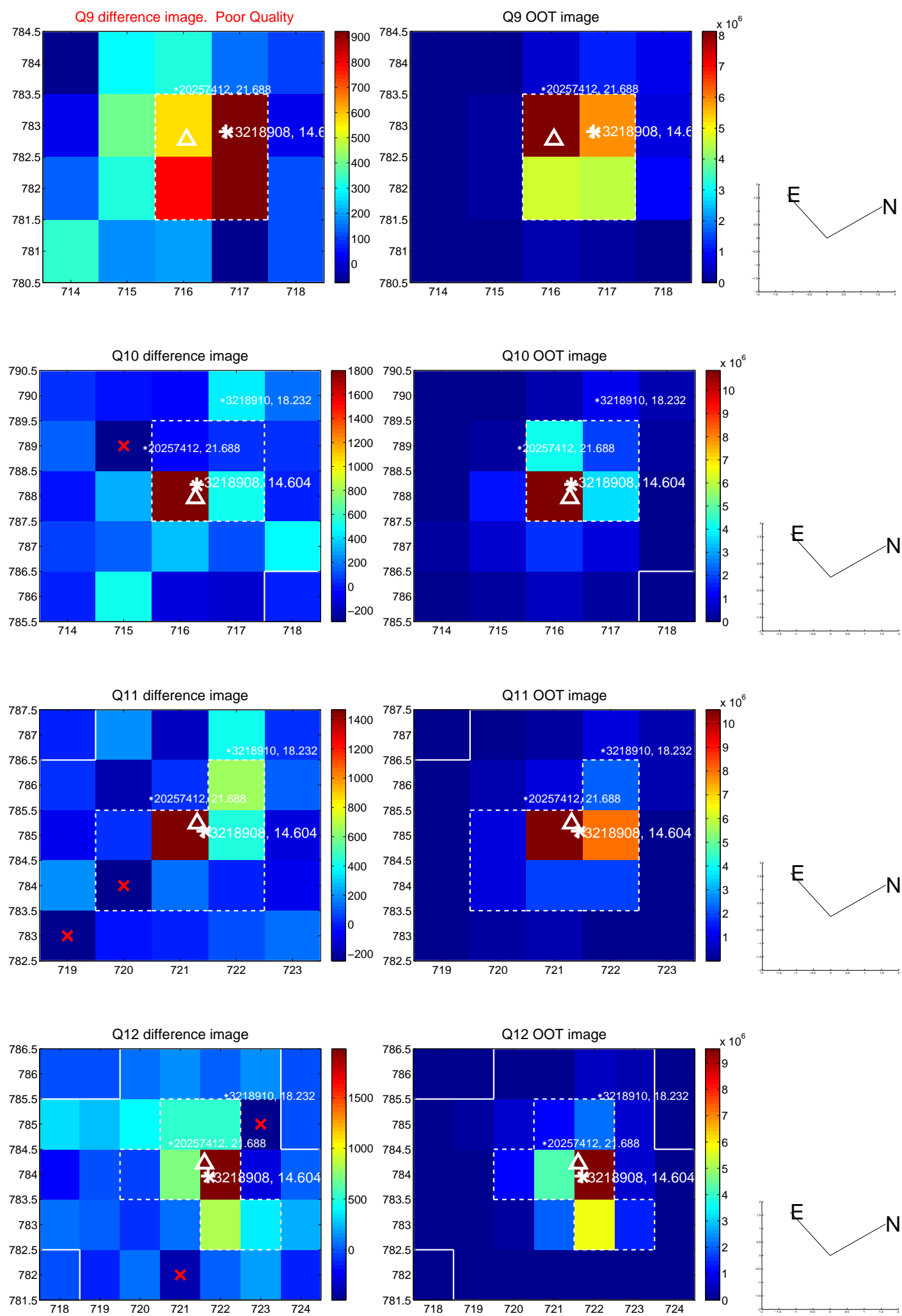
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



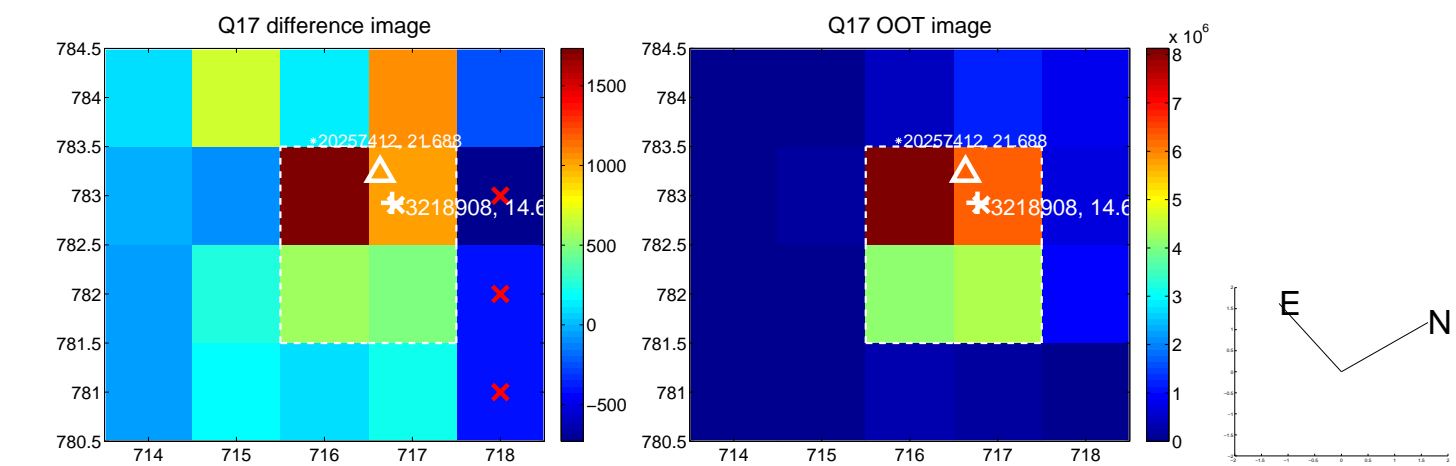
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



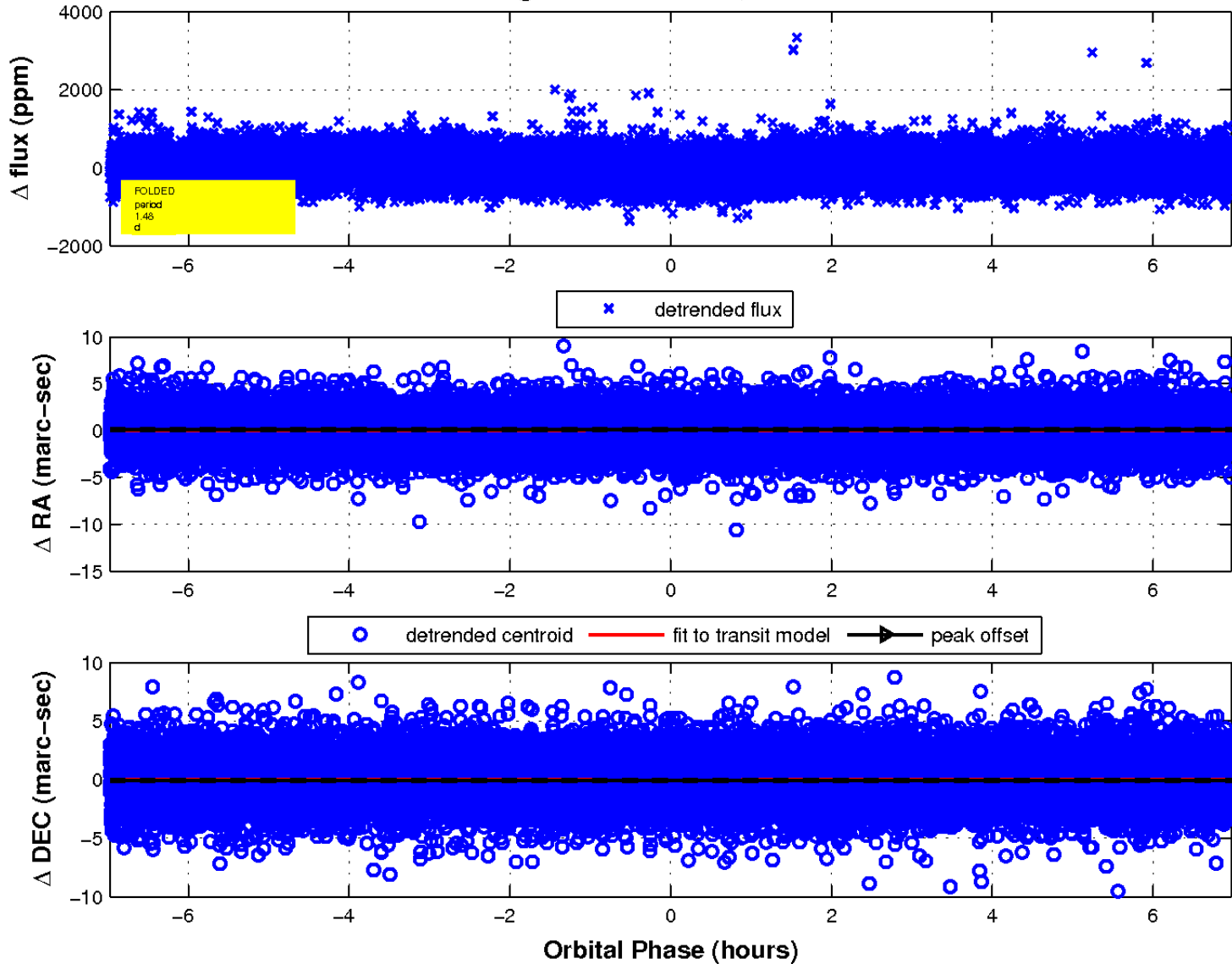
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

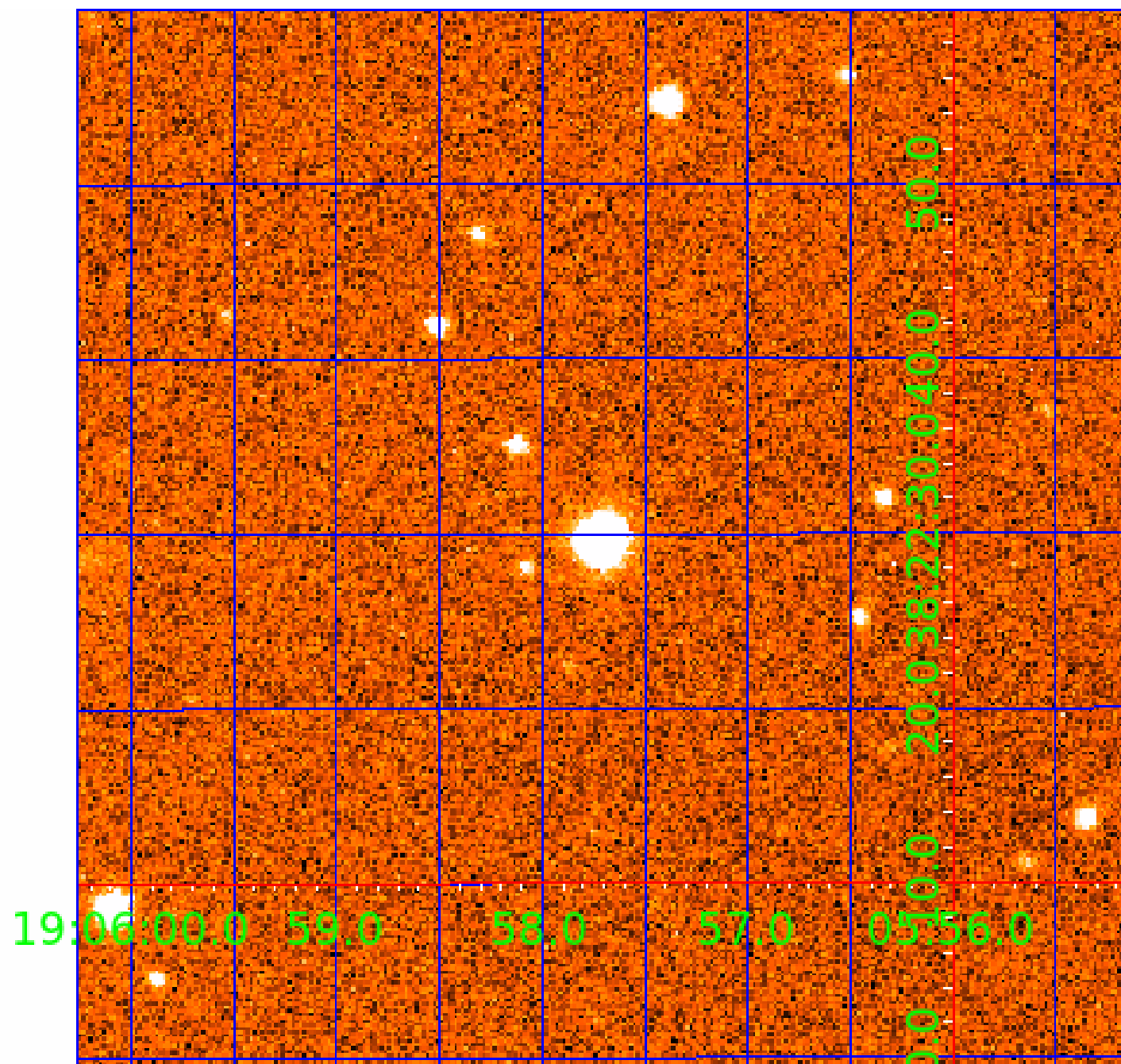


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 003218908

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})
003218908-01	OBS	1108.01	18.925401	149.494255	621.0	3.989	33.5	35.7	4.88	4941	13.95	444.63
003218908-02	OBS	No	412.312499	354.367938	326.5	20.433	34.1	5.5	4.88	4941	9.05	7.31
003218908-03	OBS	1108.02	1.475304	131.838288	121.8	2.325	21.0	20.1	4.88	4941	6.57	13352.26
003218908-04	OBS	1108.03	4.152456	134.578583	198.7	2.635	16.0	19.2	4.88	4941	7.70	3359.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003218908-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003218908-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003218908-03	OBS	PC	0.99	0	0	0	0	NO_COMMENT
003218908-04	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.

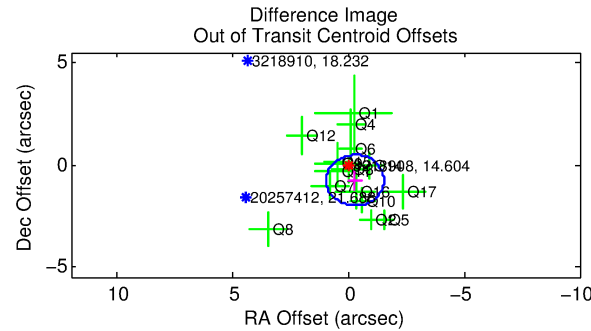
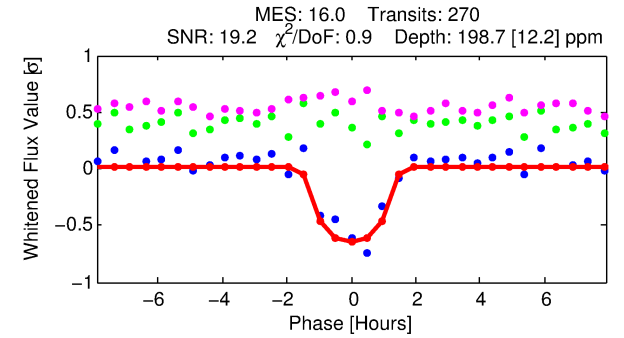
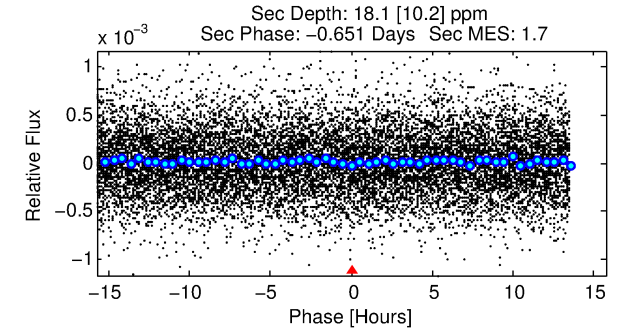
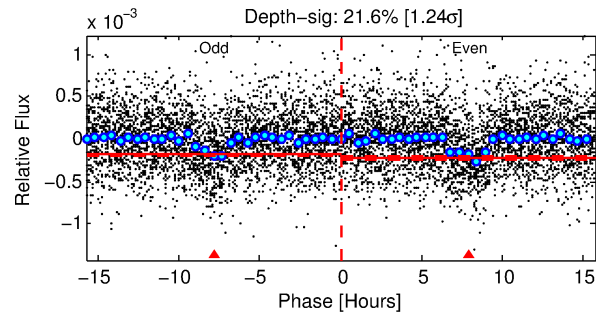
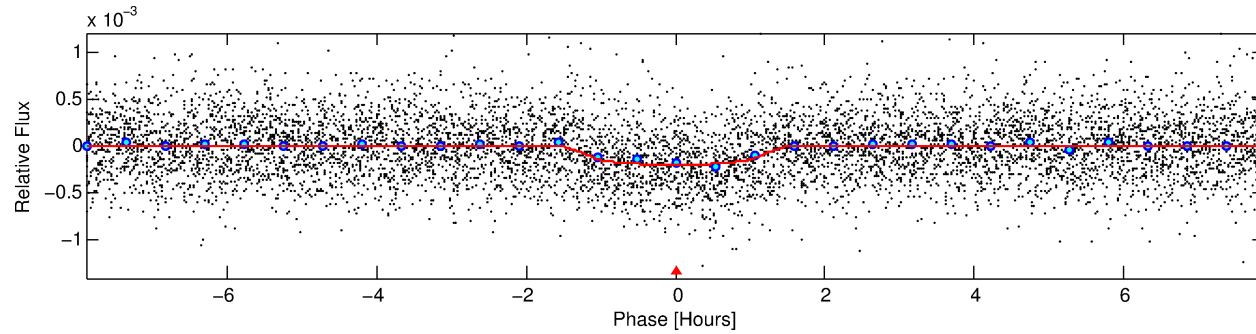
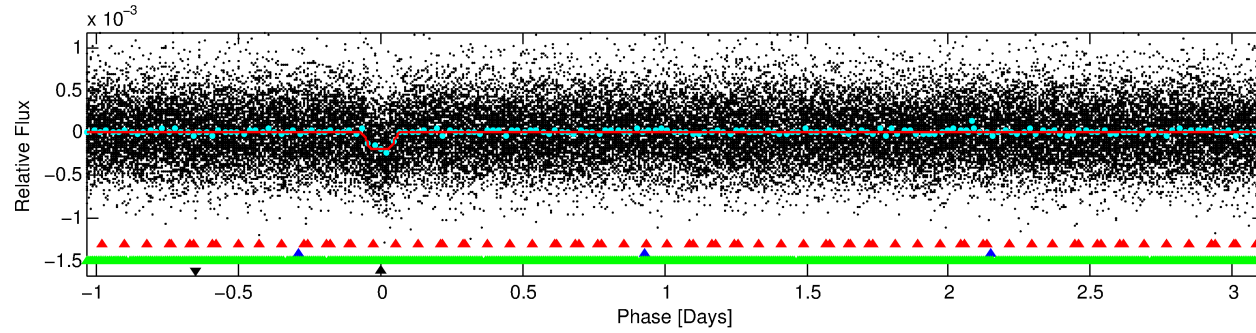
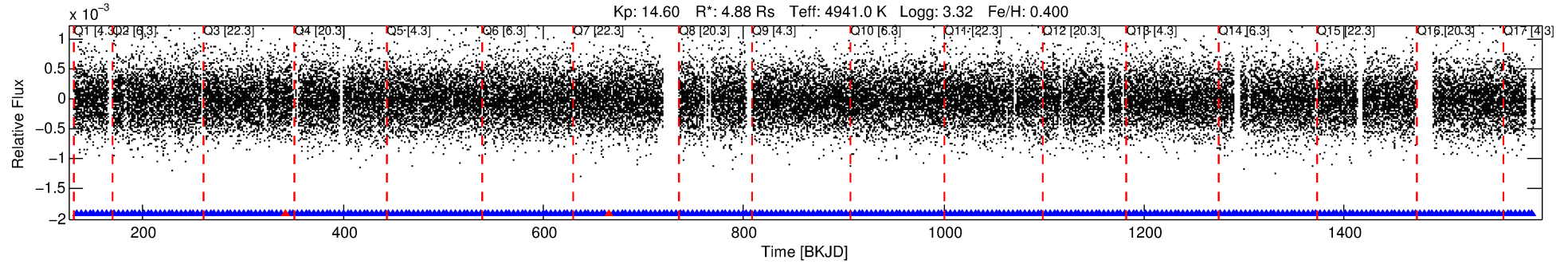
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003218908-04

No Significant Match Found

DV One-Page Summary

KIC: 3218908 Candidate: 4 of 4 Period: 4.152 d
KOI: K01108.03 Corr: 0.976



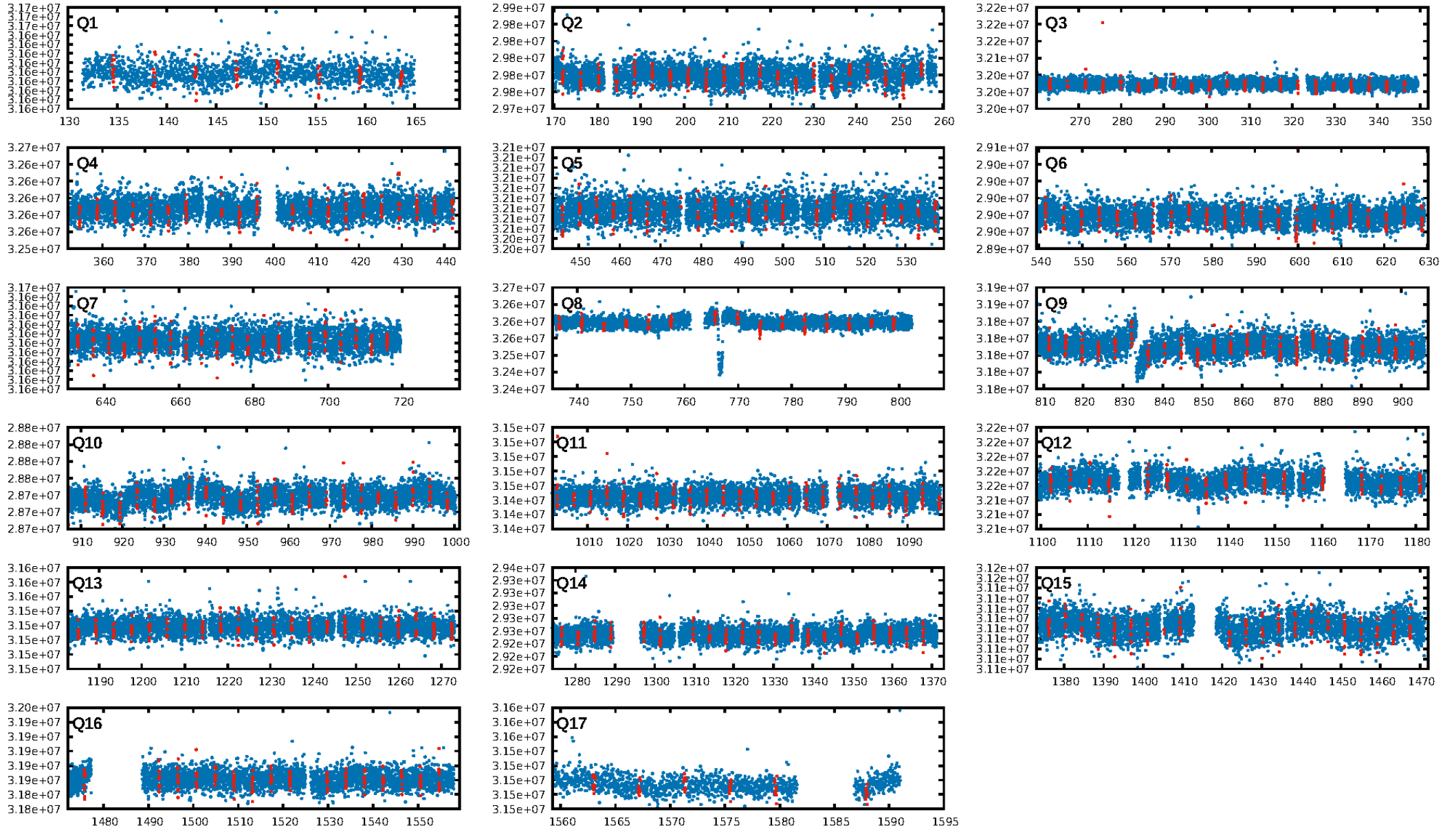
DV Fit Results:

Period = 4.15246 [0.00002] d
Epoch = 134.5786 [0.0027] BKJD
Rp/R* = 0.0144 [0.0093]
a/R* = 7.69 [16.88]
b = 0.79 [1.09]
Seff = 3359.88 [1356.04]
Teff = 1941 [196] K
Rp = 7.70 [5.60] Re
a = 0.0616 [0.0170] AU
Ag = 0.64 [0.93] [-0.39 σ]
Teffp = 2681 [946] K [0.77 σ]

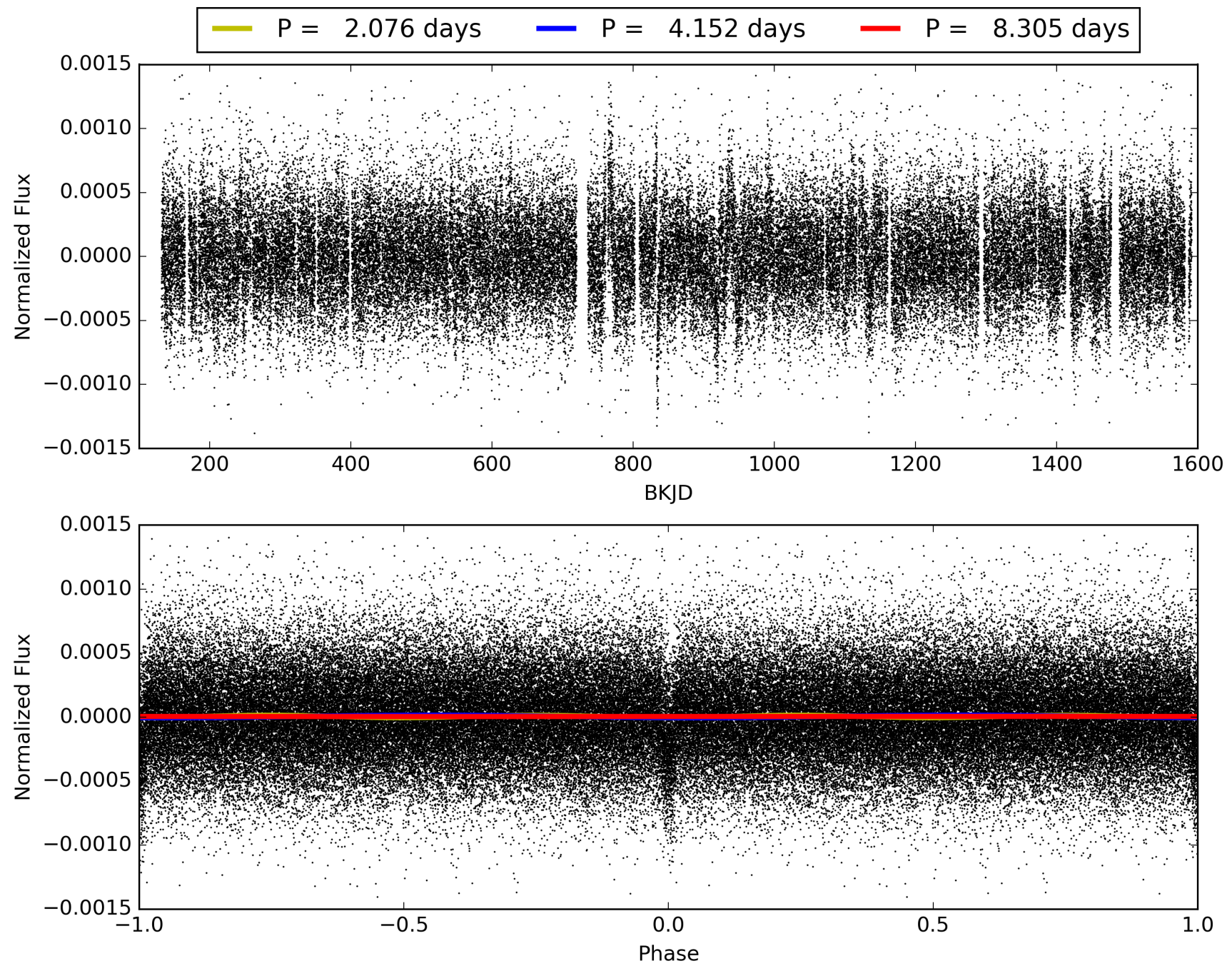
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.28 σ]
LongPeriod-sig: 100.0% [74.16 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.14e-57
RollingBand-fgt: 0.99 [256/258]
GhostDiagnostic-chr: 3.946
Centroid-sig: 64.8%
Centroid-so: 0.859 arcsec [1.21 σ]
OotOffset-rm: 0.817 arcsec [1.97 σ]
KicOffset-rm: 0.815 arcsec [1.92 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003218908-04, PDC Light Curves

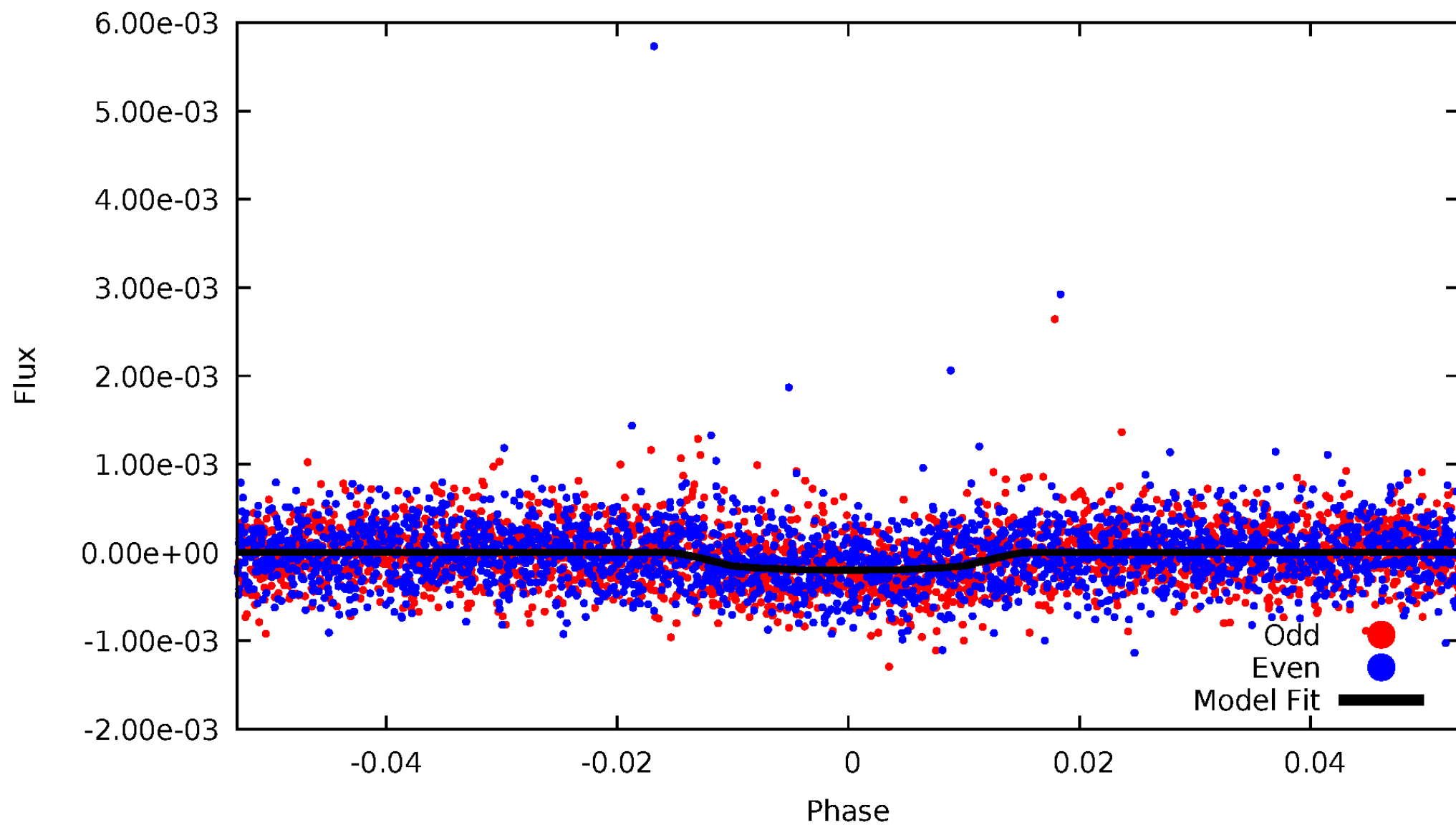


TCE 003218908-04



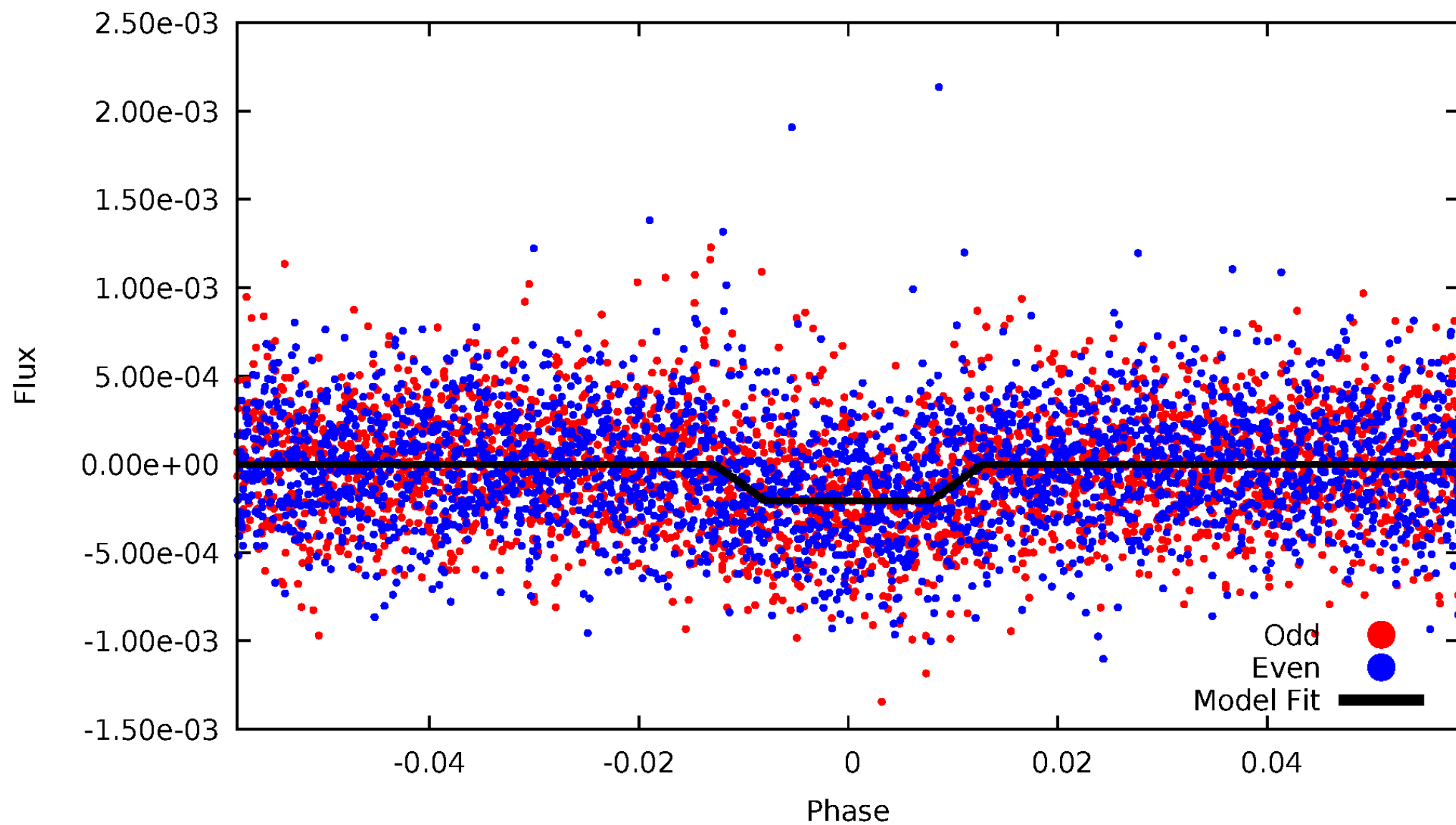
DV Odd/Even

TCE 003218908-04



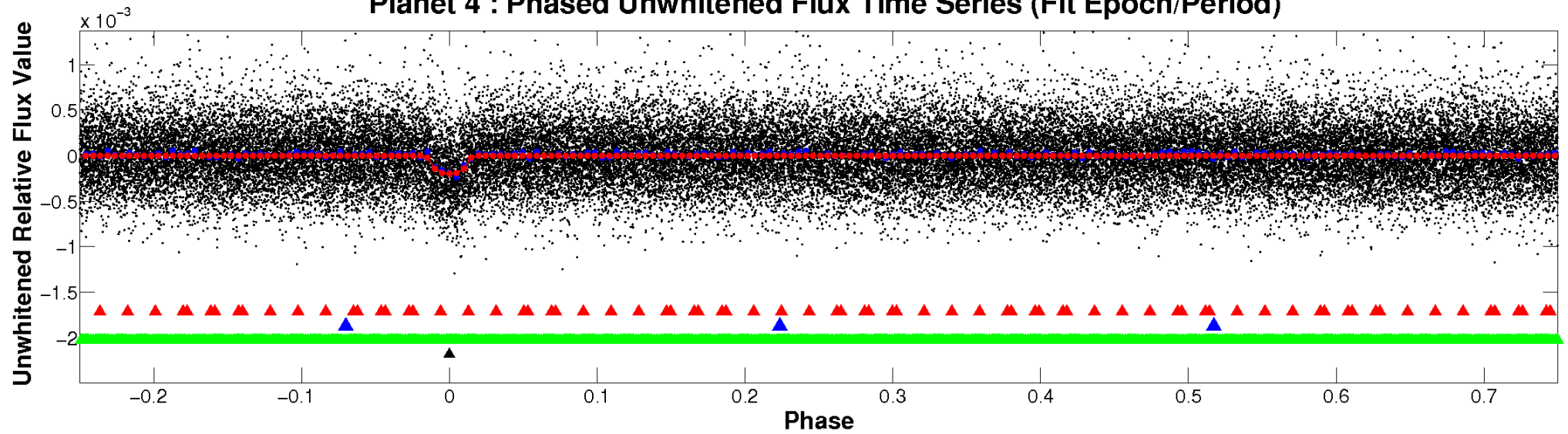
ALT Odd/Even

TCE 003218908-04

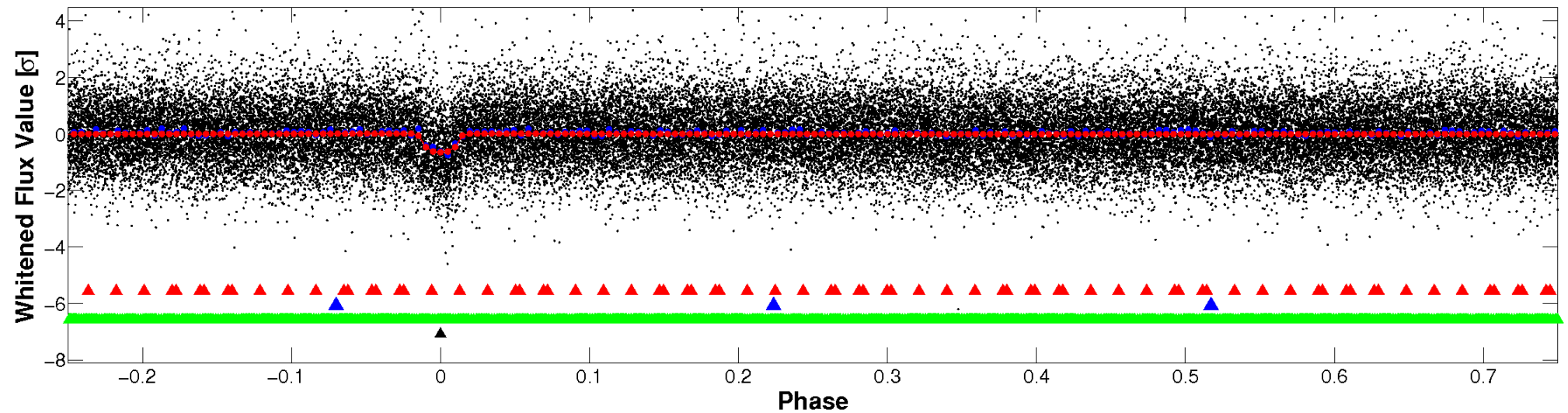


Non-Whitened Vs. Whitened Light Curve

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

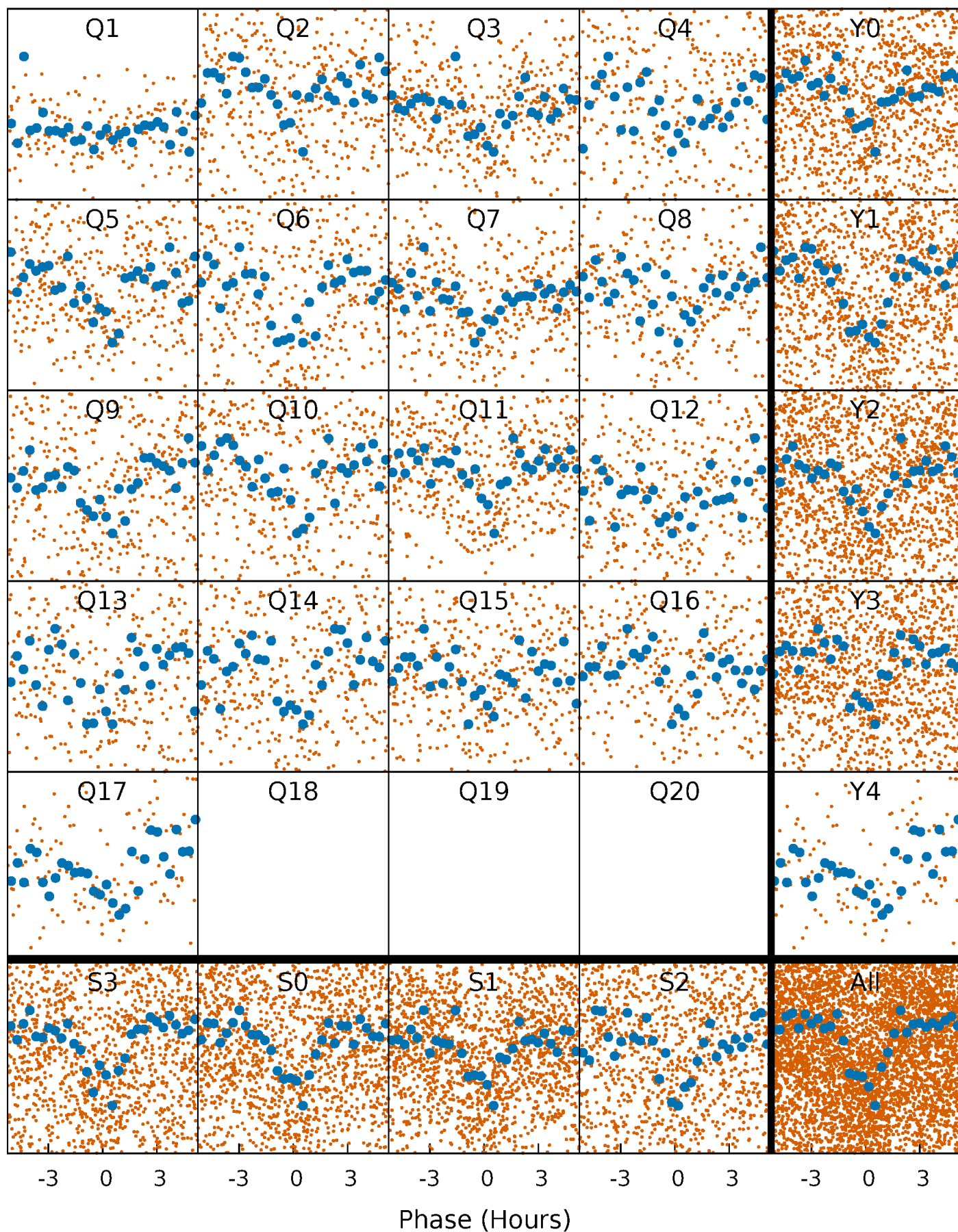


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



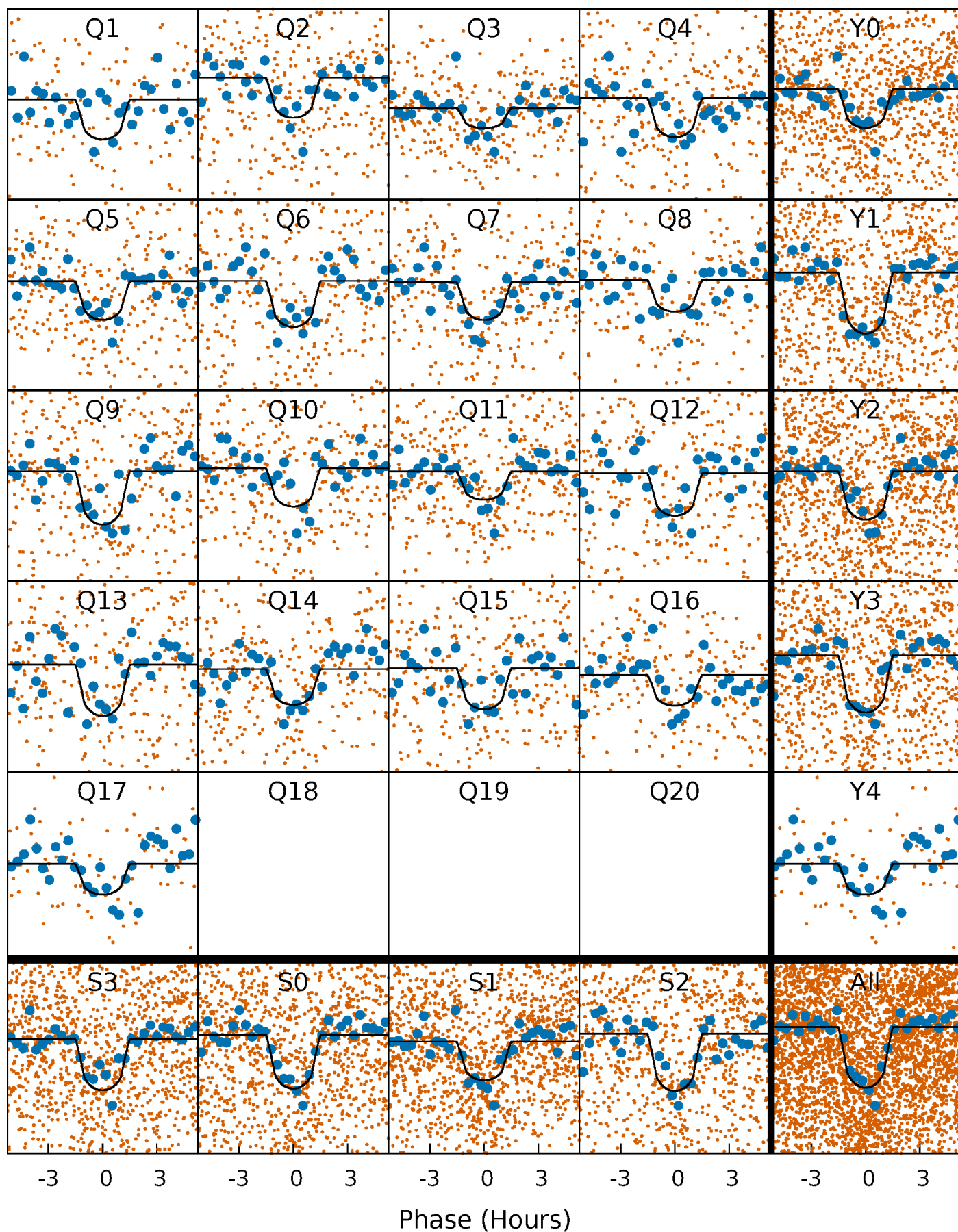
PDC Quarter-Phased Transit Curves

TCE 003218908-04 P= 4.152456 Days $T_0=134.578583$ (BKJD)



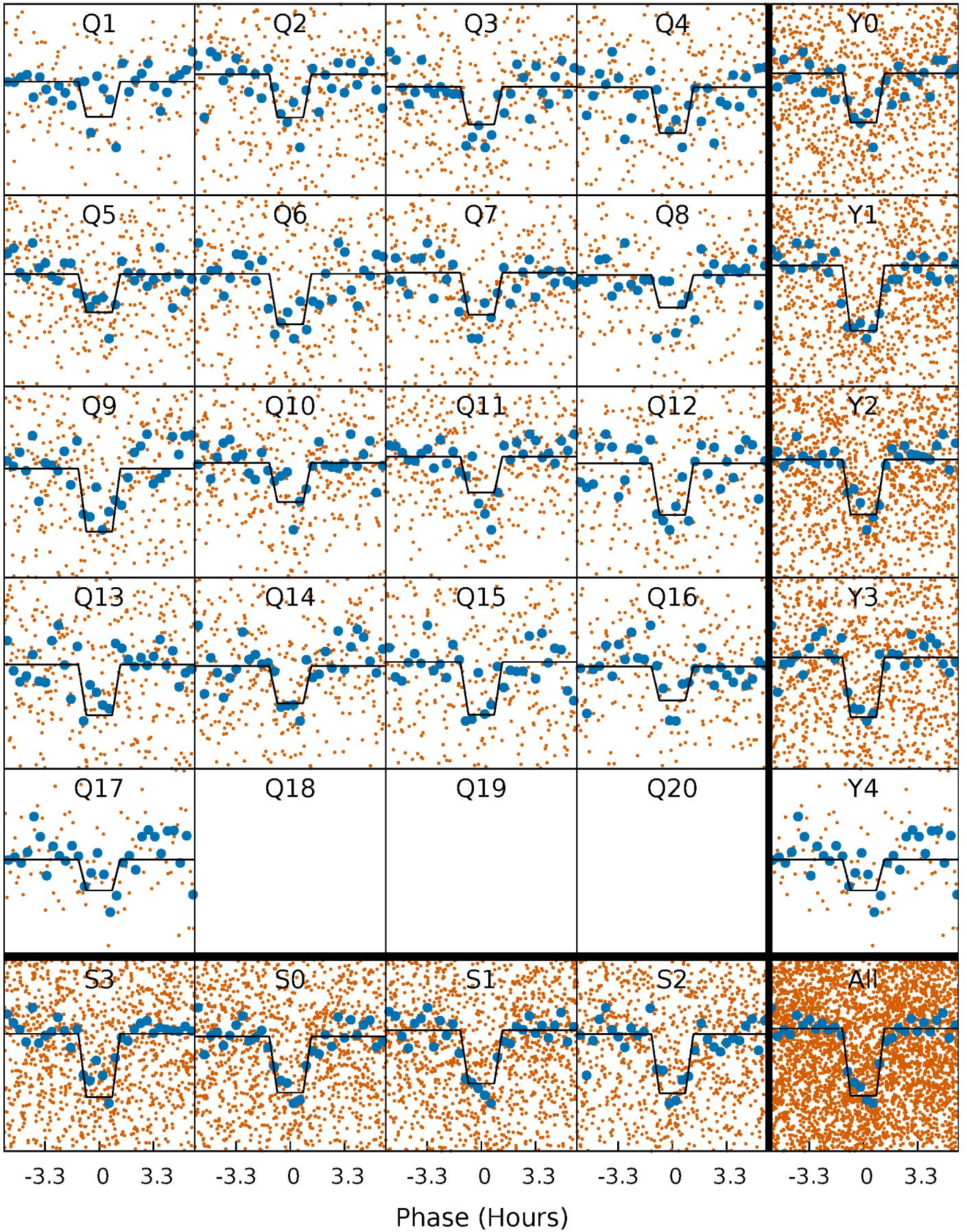
DV Quarter-Phased Transit Curves

TCE 003218908-04 P= 4.152456 Days $T_0=134.578583$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

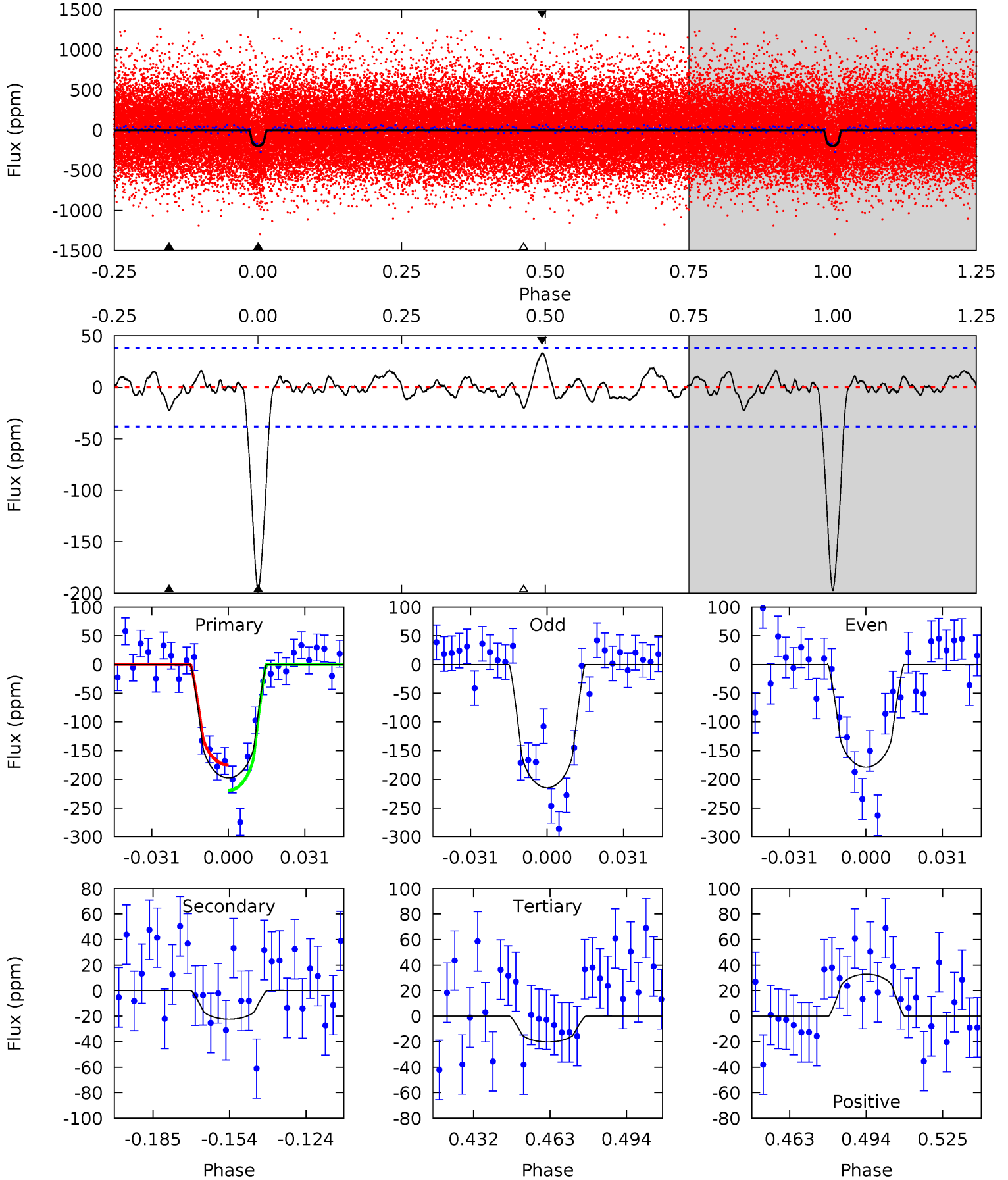
TCE 003218908-04 P= 4.152452 Days $T_0=134.580489$ (BKJD)



DV Model-Shift Uniqueness Test

003218908-04, P = 4.152456 Days, E = 130.426127 Days

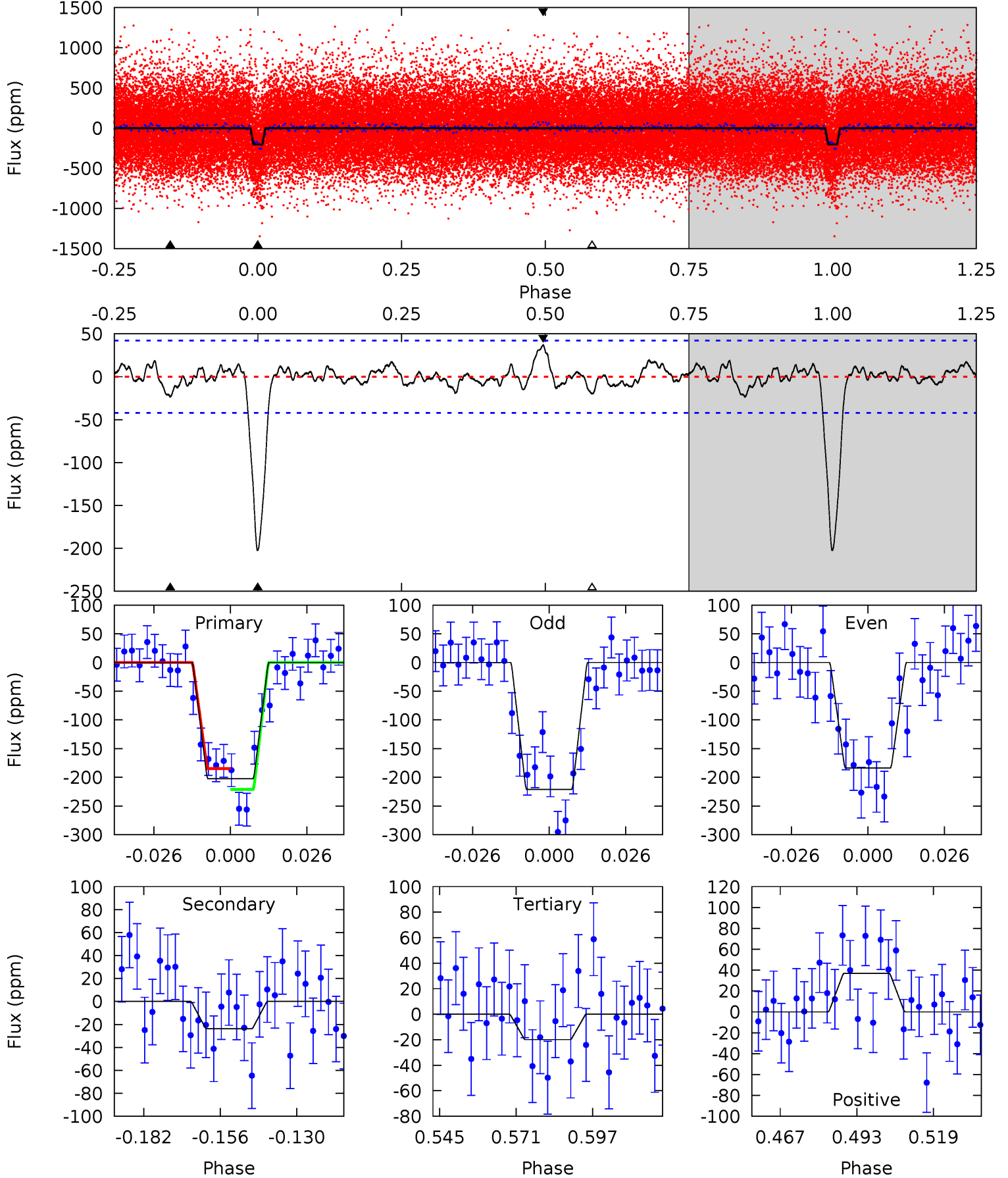
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.9	2.82	2.54	4.15	4.81	2.16	1.07	22.3	20.7	0.28	-1.34	2.27	1.01	0.14	2.79



Alt Model-Shift Uniqueness Test

003218908-04, P = 4.152452 Days, E = 130.428037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	2.74	2.29	4.25	4.84	2.23	1.06	21.0	19.1	0.46	-1.50	2.16	1.07	0.15	2.08



Stellar Parameters For KIC 003218908

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4941^{+49}_{-118}	$3.317^{+0.210}_{-0.105}$	$0.400^{+0.050}_{-0.250}$	$4.885^{+0.701}_{-1.636}$	$1.808^{+0.181}_{-0.578}$	$0.022^{+0.028}_{-0.007}$
	+1%/-2%	+6%/-3%	+12%/-62%	+14%/-33%	+10%/-32%	+130%/-30%
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 003218908-04 / KOI 1108.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-22±8	$7.66^{+4.65}_{-4.42}$	2689^{+122}_{-192}	3009^{+1266}_{-5259}	$0.733^{+3.136}_{-0.474}$
Alt.	-24±9	$7.46^{+4.88}_{-4.06}$	2672^{+138}_{-189}	3091^{+1108}_{-5162}	$0.823^{+3.232}_{-0.544}$

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 $A_{obs} \gg 1.0$

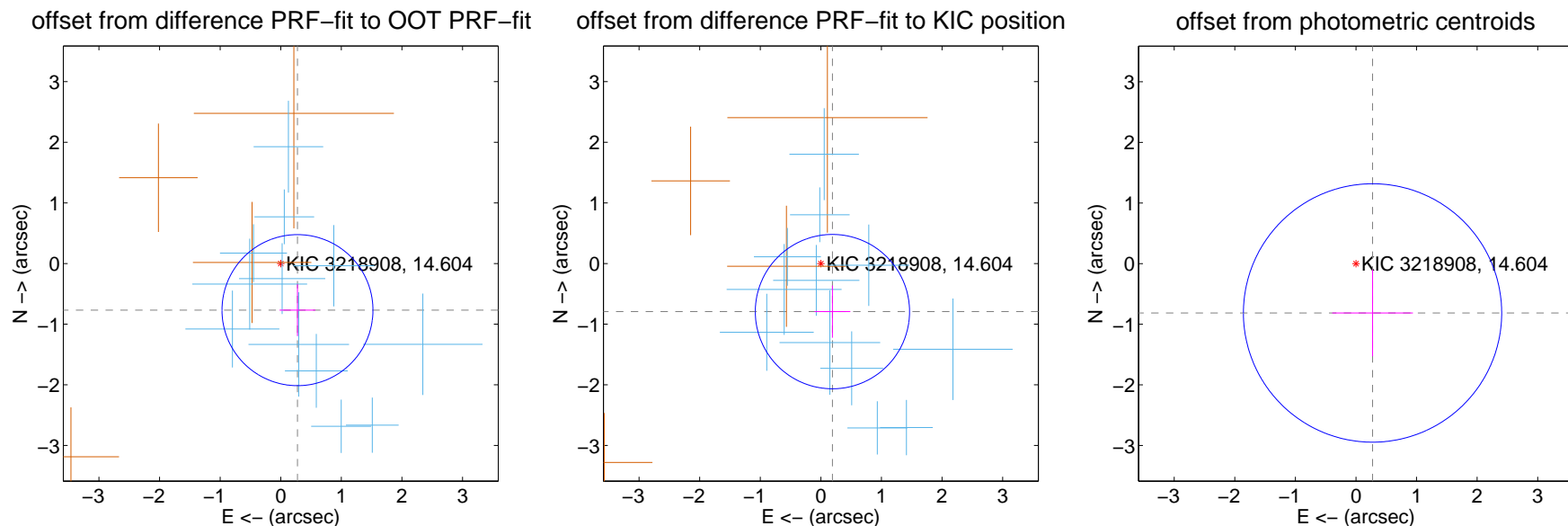
DV Centroid Data

Supplemental centroid analysis for 003218908-04. Kepler magnitude: 14.60. Transit SNR 19.18

There are 12 quarters with good PRF difference image offsets

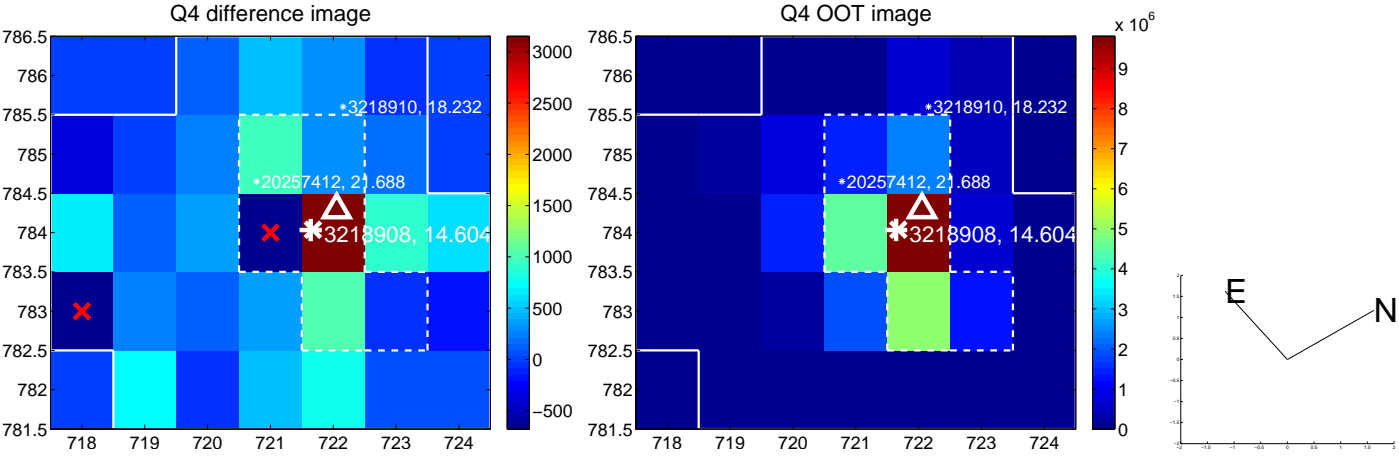
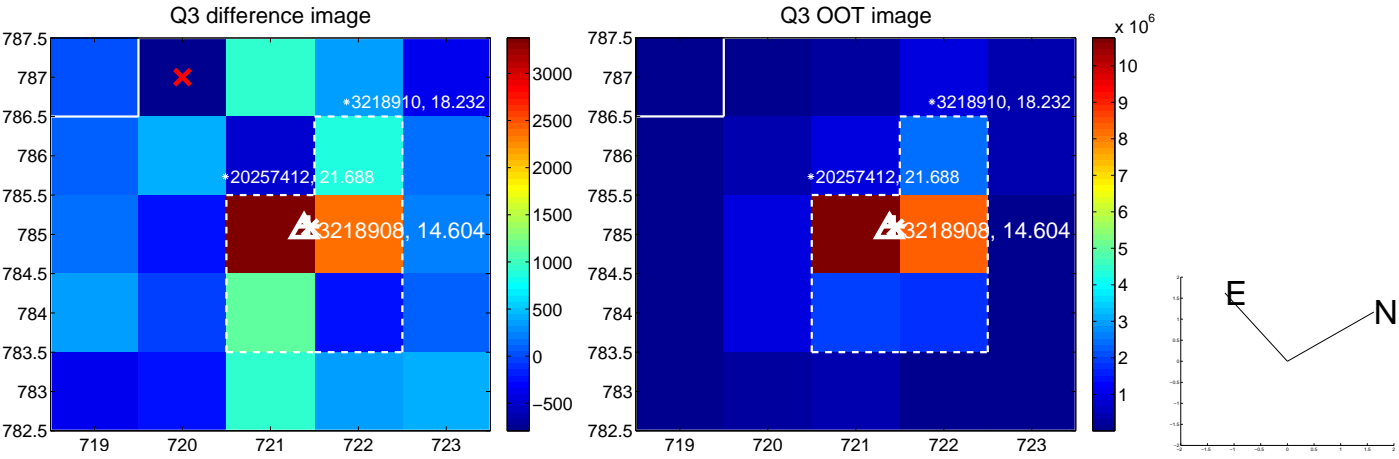
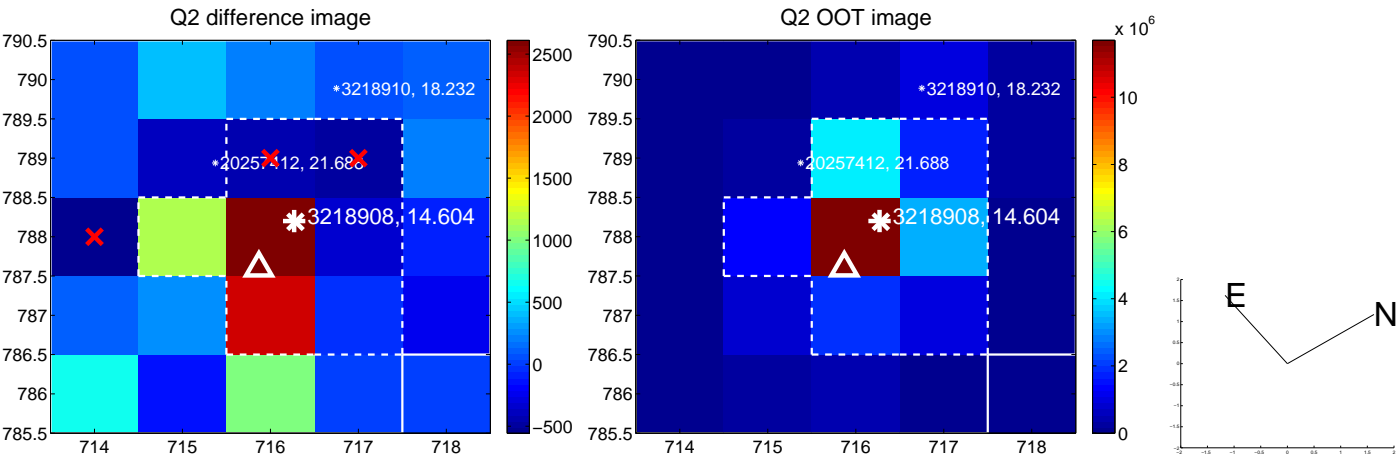
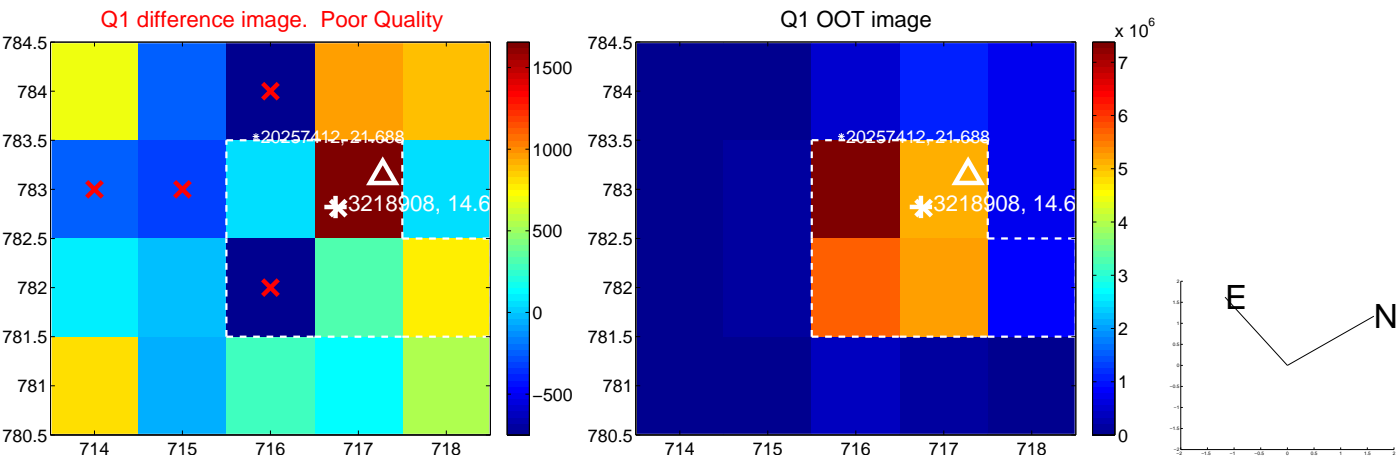
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.817 ± 0.415	1.97	-0.276 ± 0.295	-0.769 ± 0.428
PRF-fit source offset from KIC position	0.815 ± 0.424	1.92	-0.191 ± 0.295	-0.793 ± 0.430
photometric centroid source offset	0.86 ± 0.71	1.21	-0.27 ± 0.67	-0.81 ± 0.72

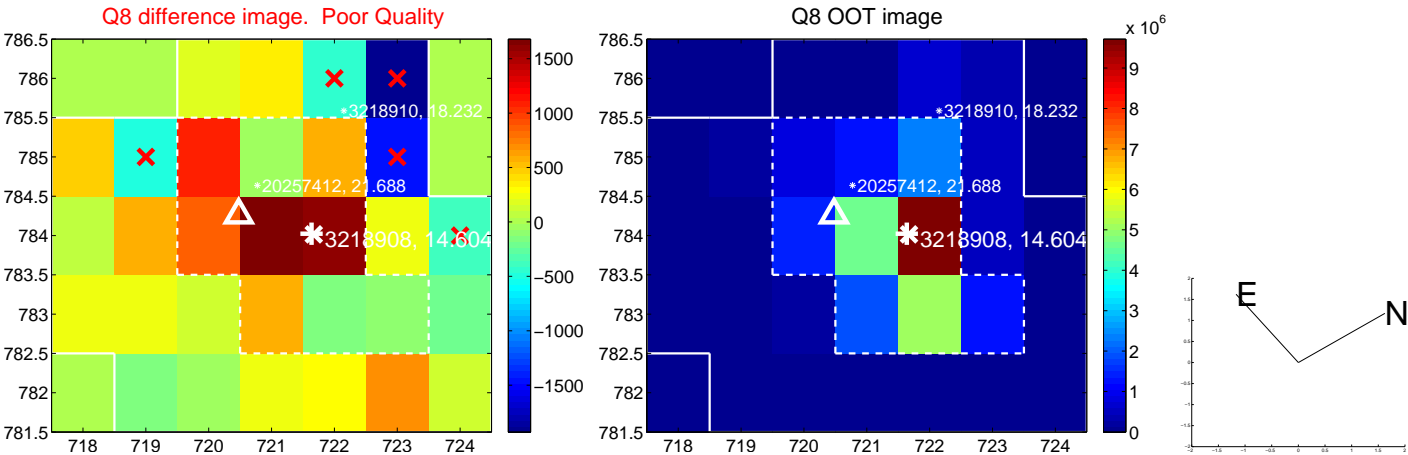
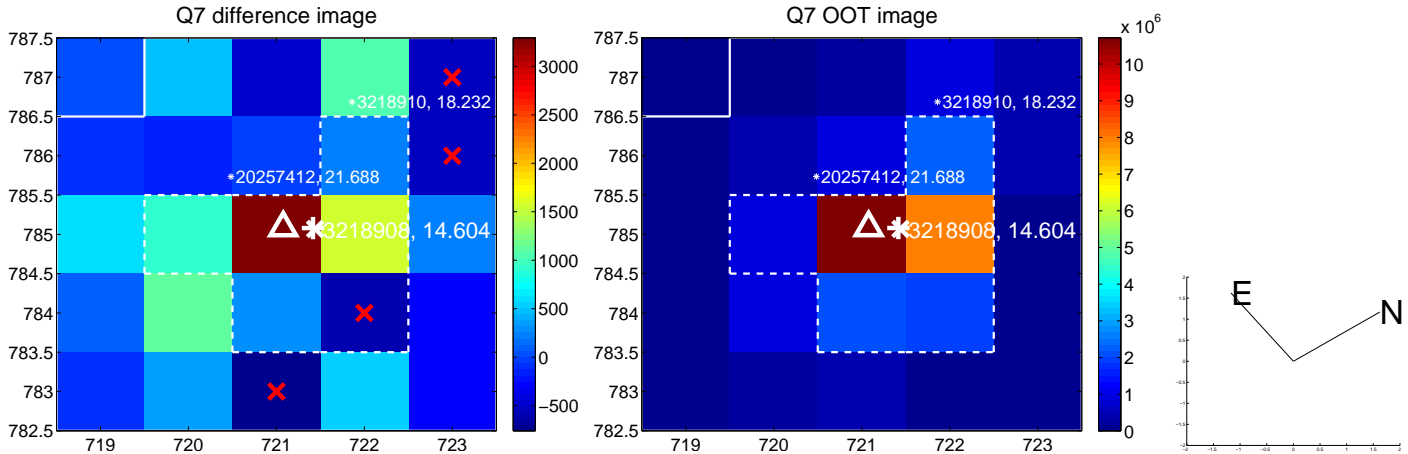
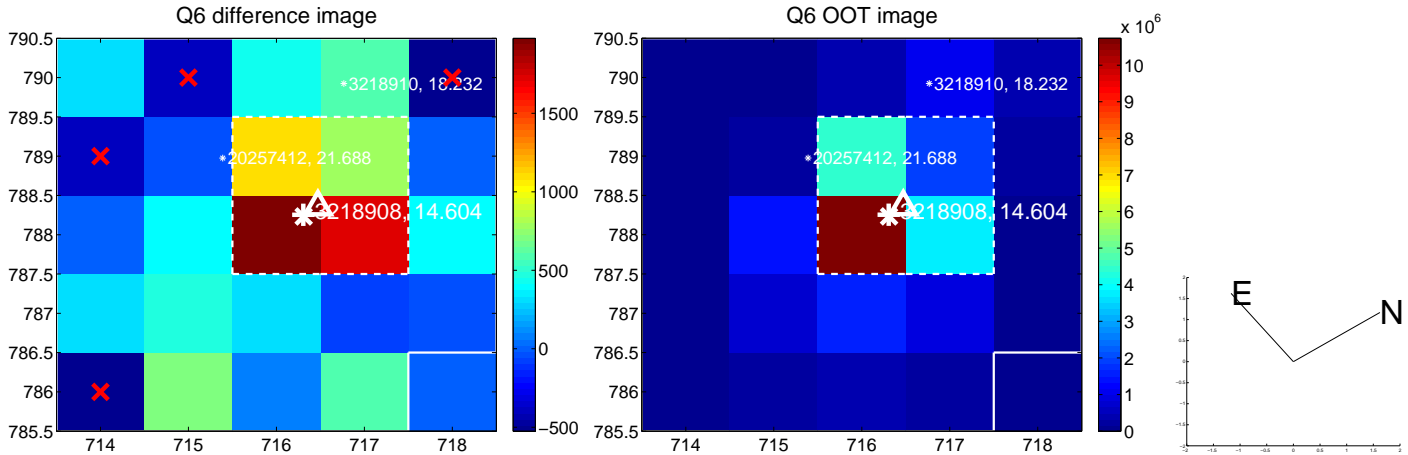
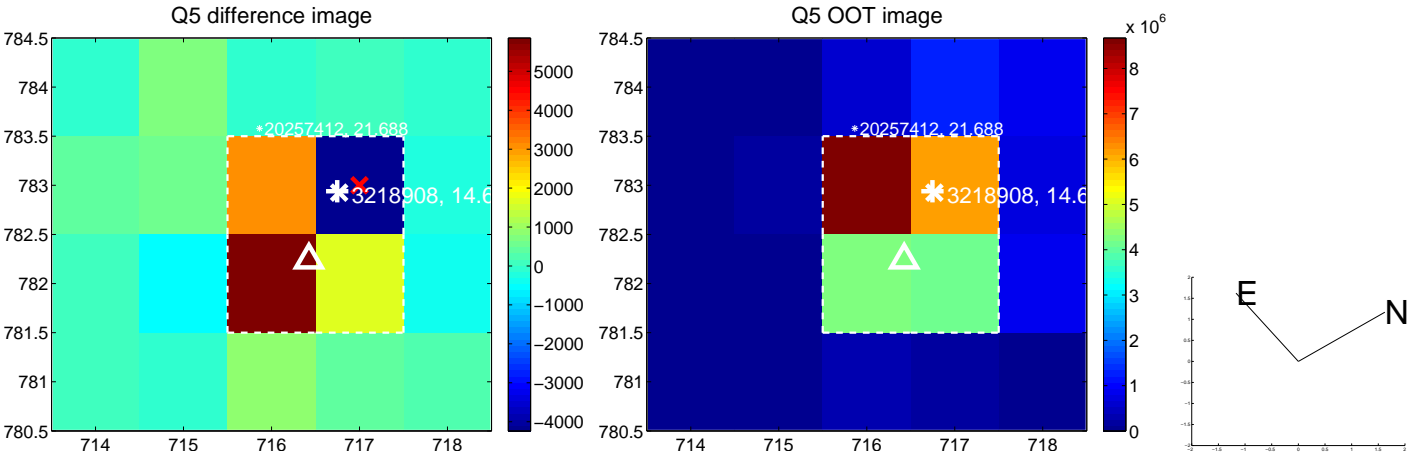


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

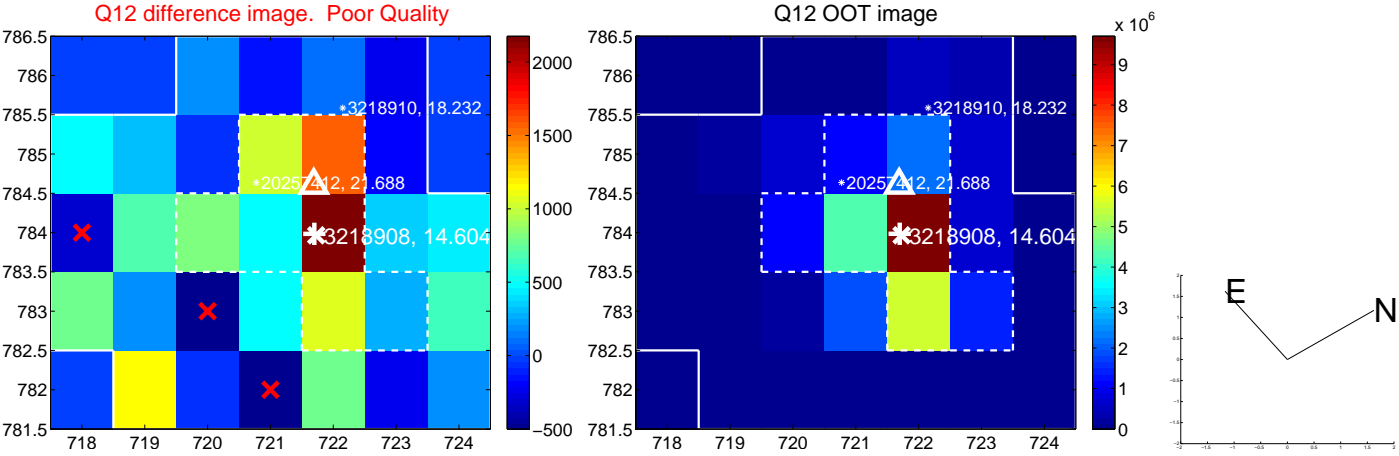
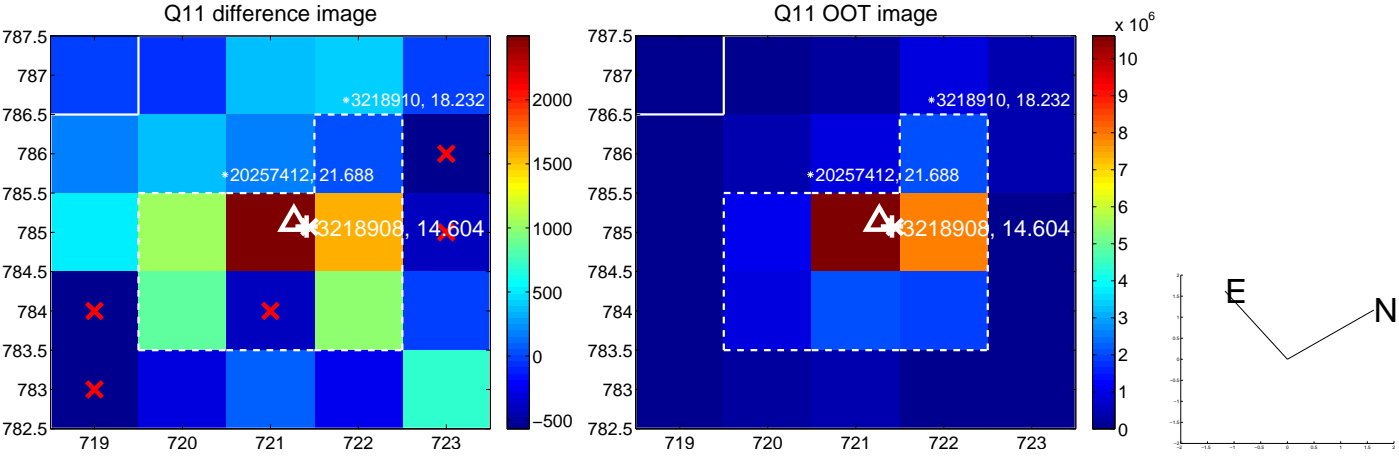
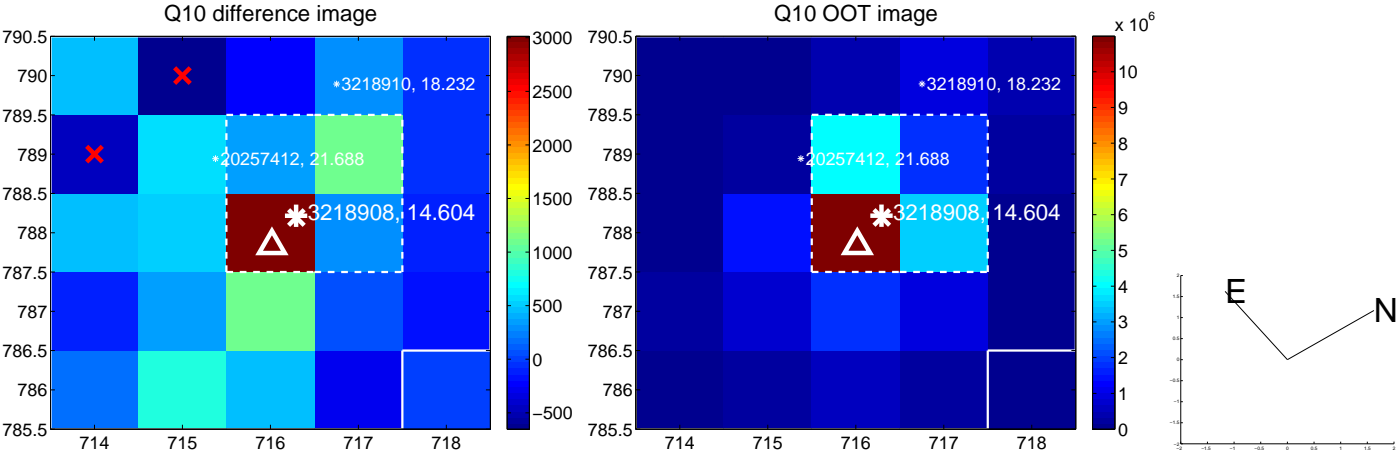
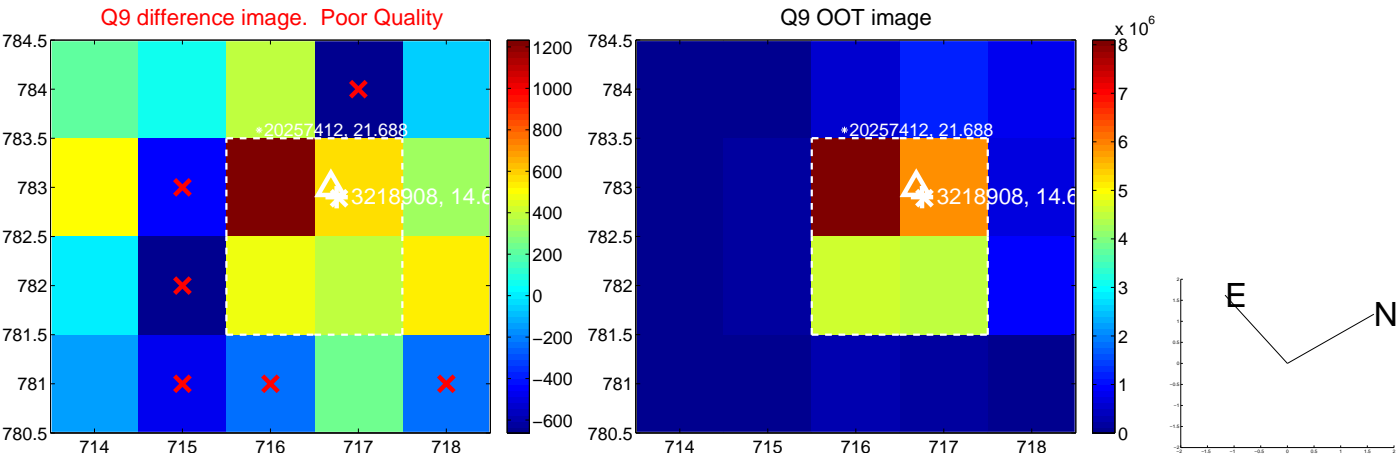
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



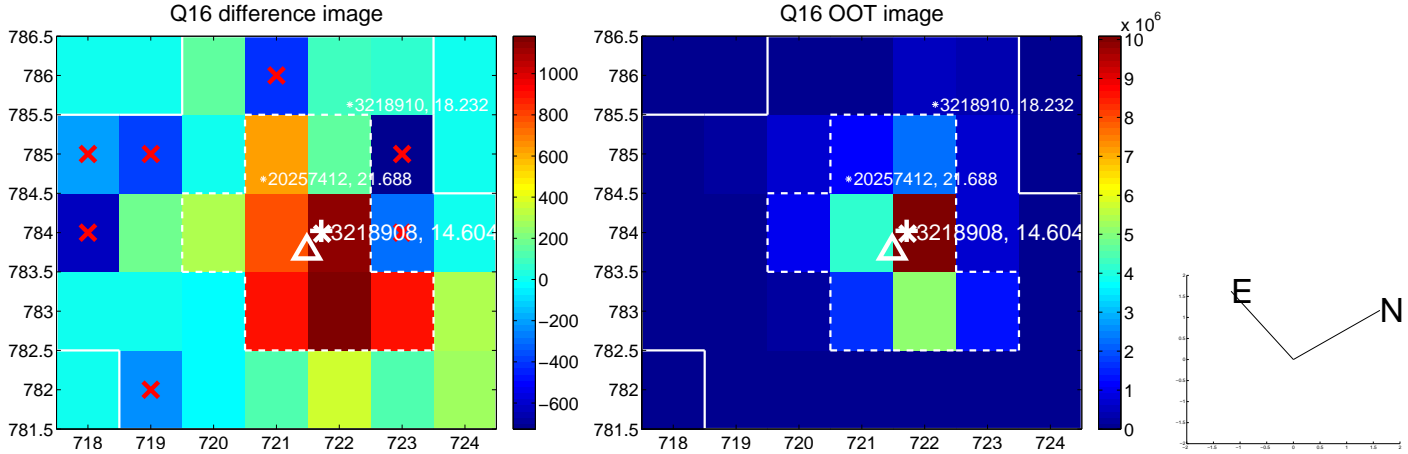
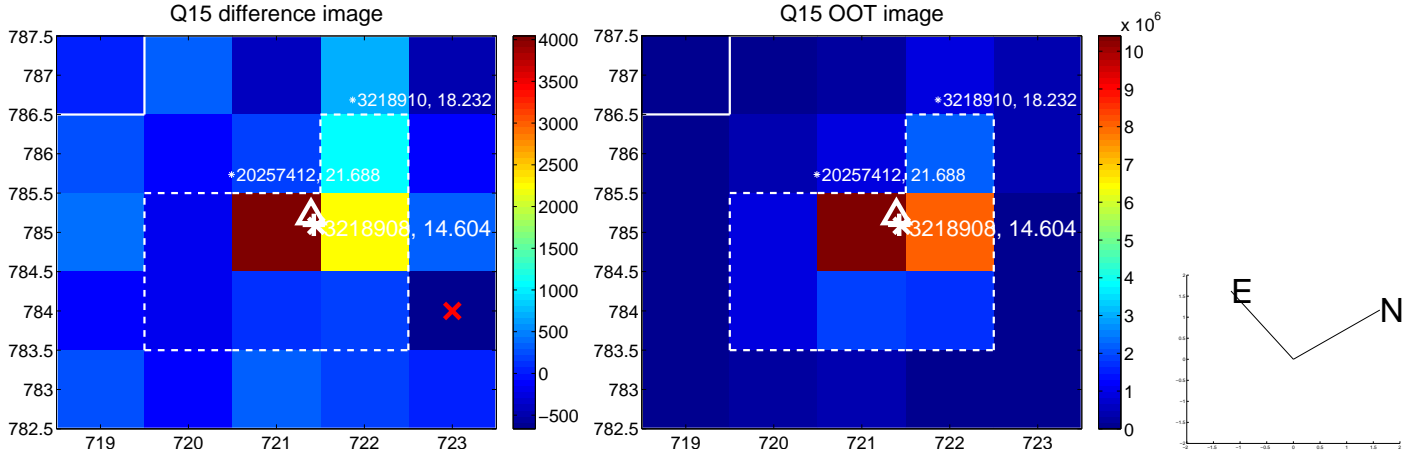
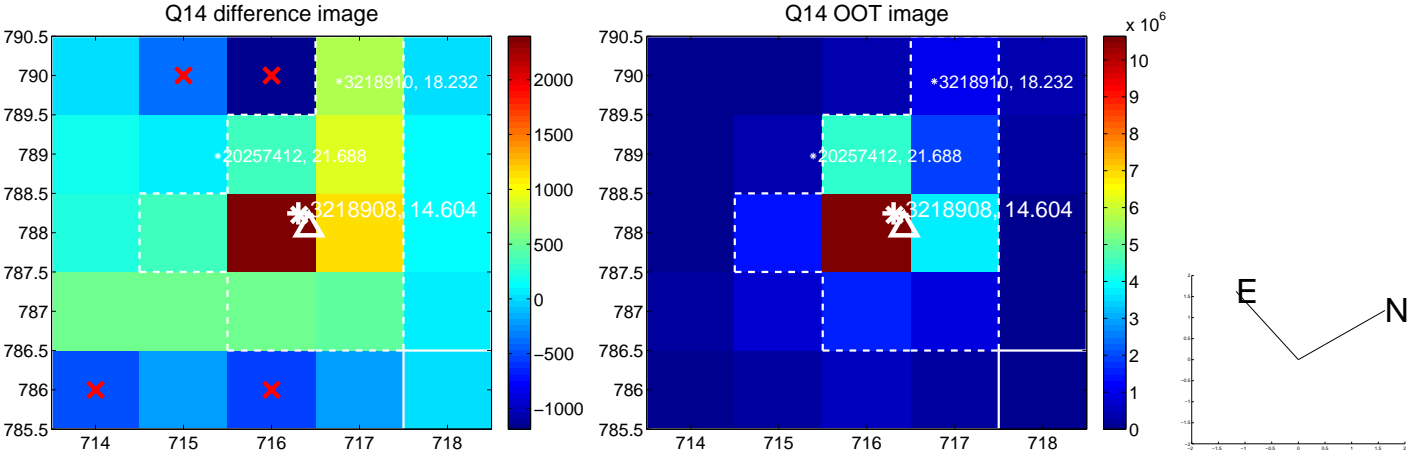
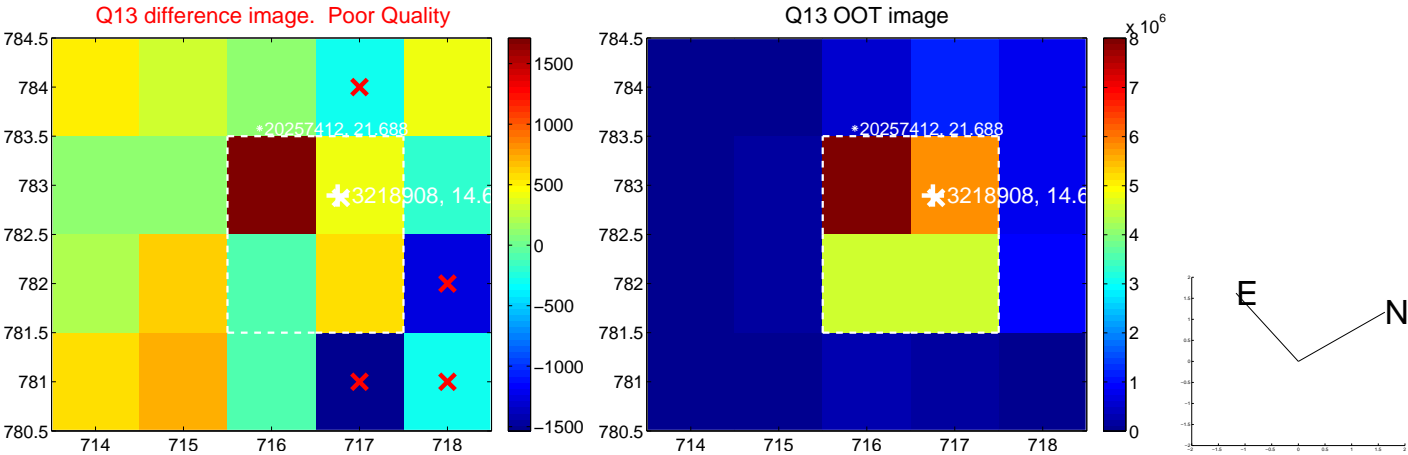
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



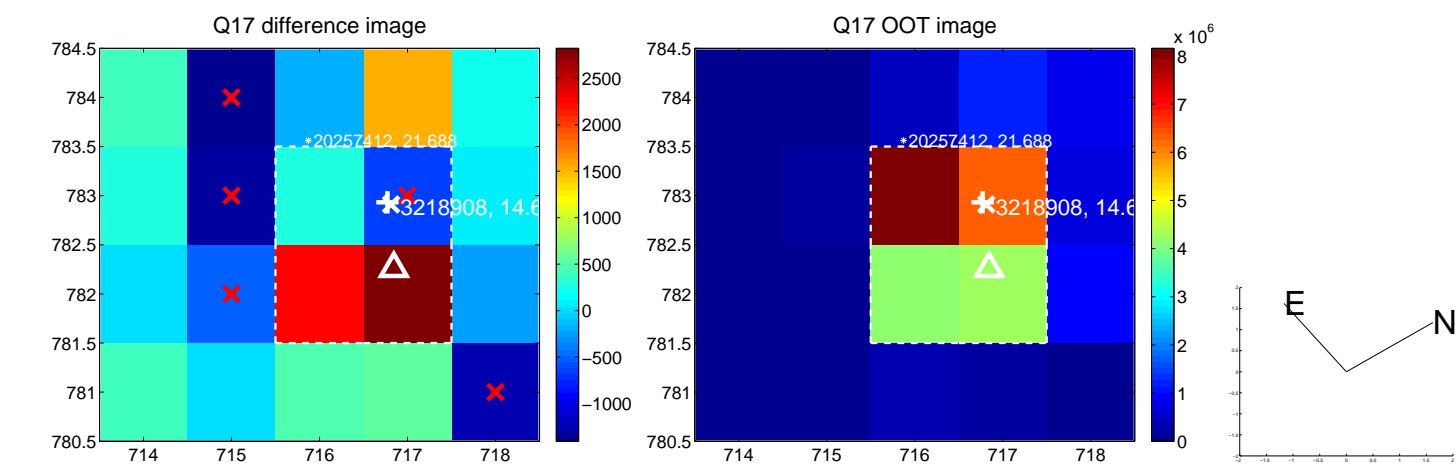
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



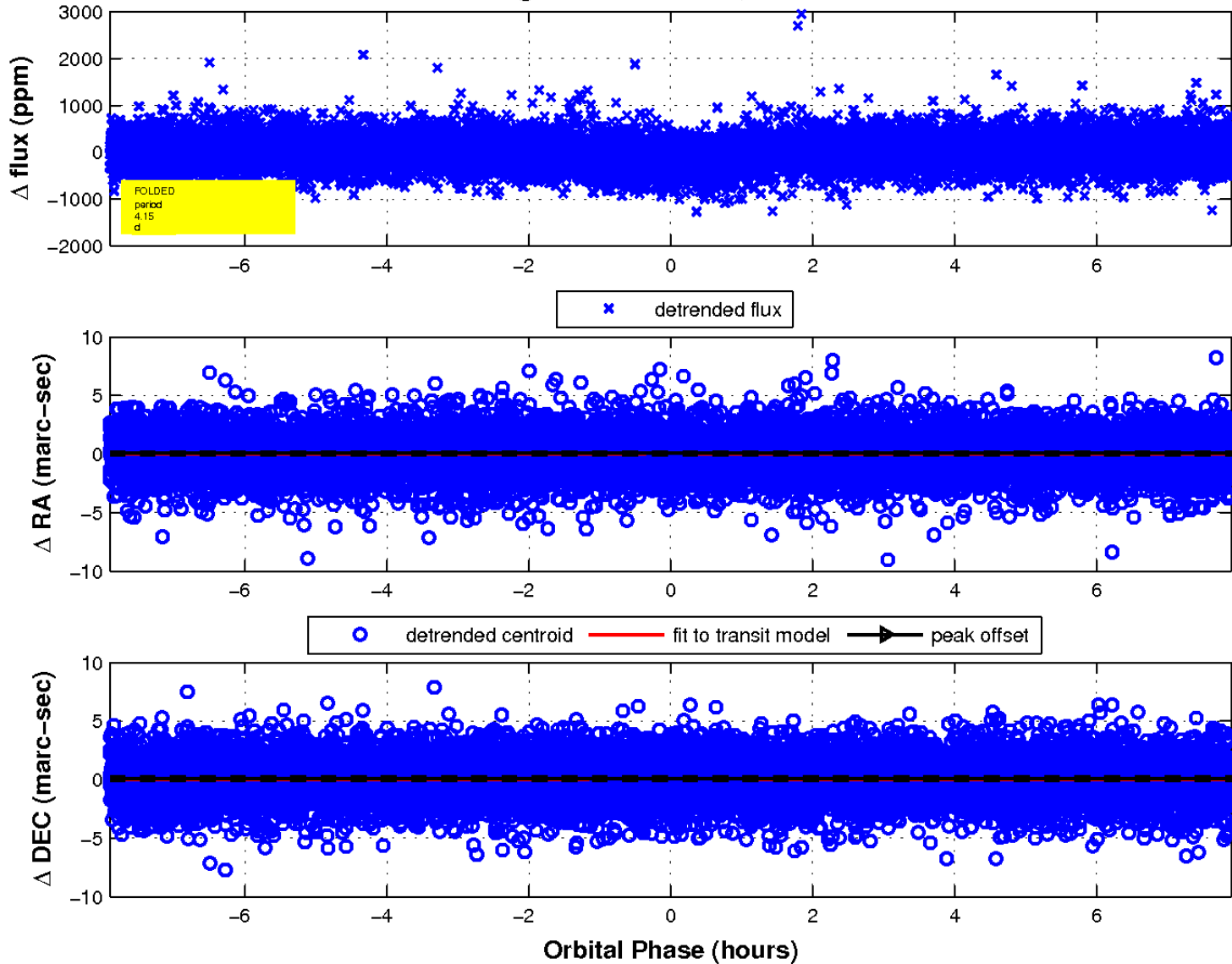
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

