

KIC 008840117

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})
008840117-01	OBS	No	1.702570	132.507027	138.6	3.000	11.4	-1.0	2.41	6315	2.85	8608.47
008840117-02	OBS	No	1.702833	132.129333	25.7	3.908	8.9	9.2	2.41	6315	2.21	8606.69
008840117-03	OBS	No	2.069754	132.522608	8.2	11.983	8.6	4.6	2.41	6315	0.80	6635.00
008840117-06	OBS	No	19.303168	148.719464	79.1	6.605	9.0	8.5	2.41	6315	2.44	337.98
008840117-07	OBS	No	61.108707	163.245592	102.4	7.741	8.5	6.5	2.41	6315	2.85	72.71
008840117-08	OBS	No	76.794060	139.134112	209.7	2.000	7.1	-1.0	2.41	6315	3.51	53.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008840117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS
008840117-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
008840117-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008840117-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008840117-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008840117-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

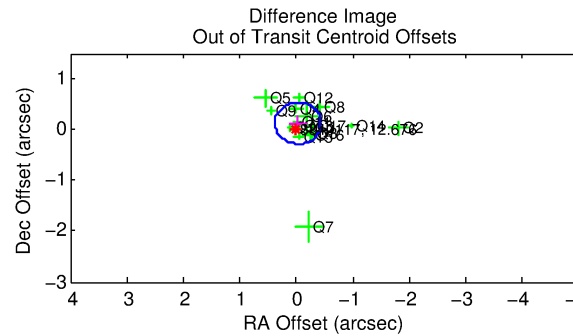
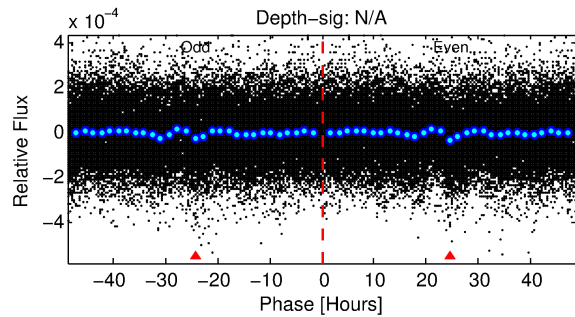
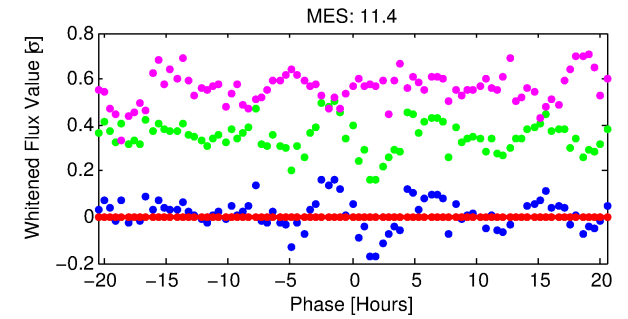
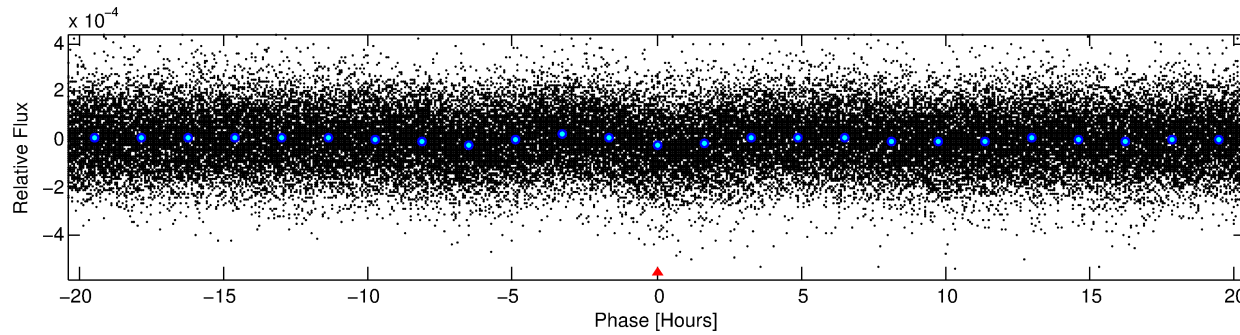
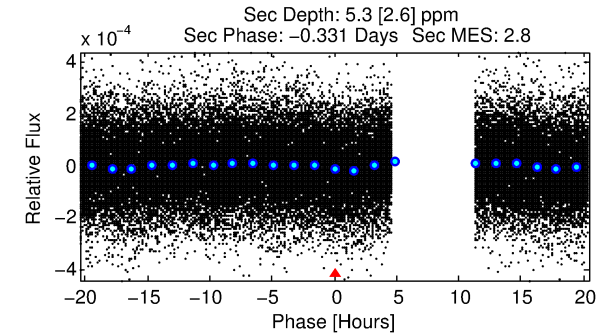
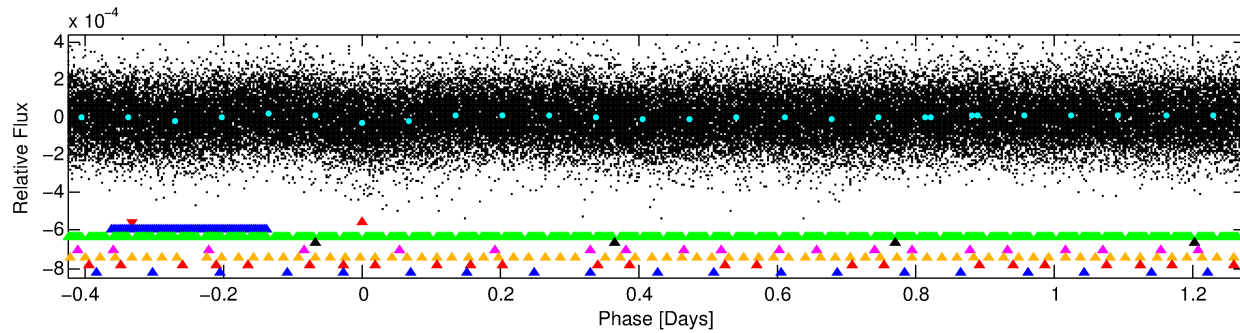
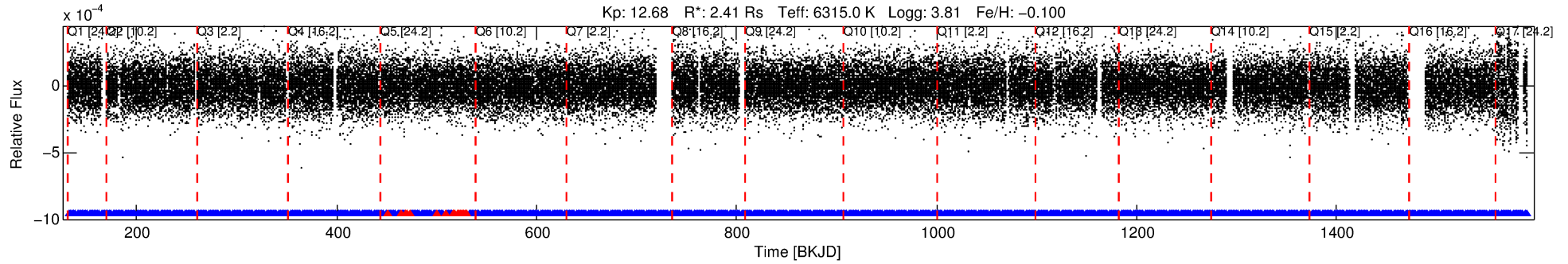
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008840117-01

No Significant Match Found

DV One-Page Summary

KIC: 8840117 Candidate: 1 of 8 Period: 1.703 d



TPS TCE Results:

Period = 1.70257 d
Epoch = 132.5070 BKJD

DV fit results are unavailable

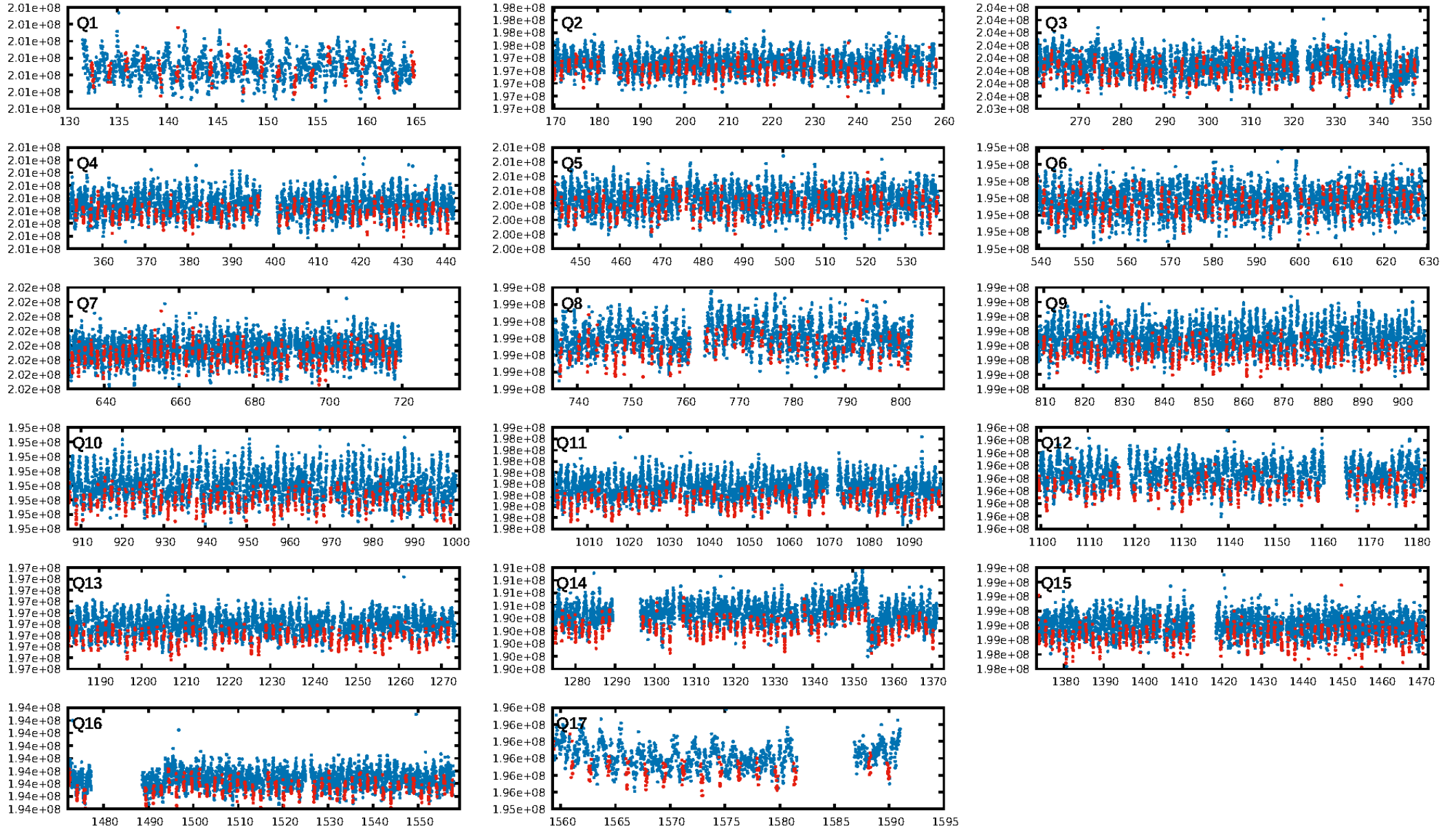
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [746/762]
GhostDiagnostic-chr: 0.744
Centroid-sig: 0.0%
Centroid-so: 0.499 arcsec [3.69σ]
OotOffset-rm: 0.132 arcsec [0.97σ]
KicOffset-rm: 0.212 arcsec [1.42σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/17]

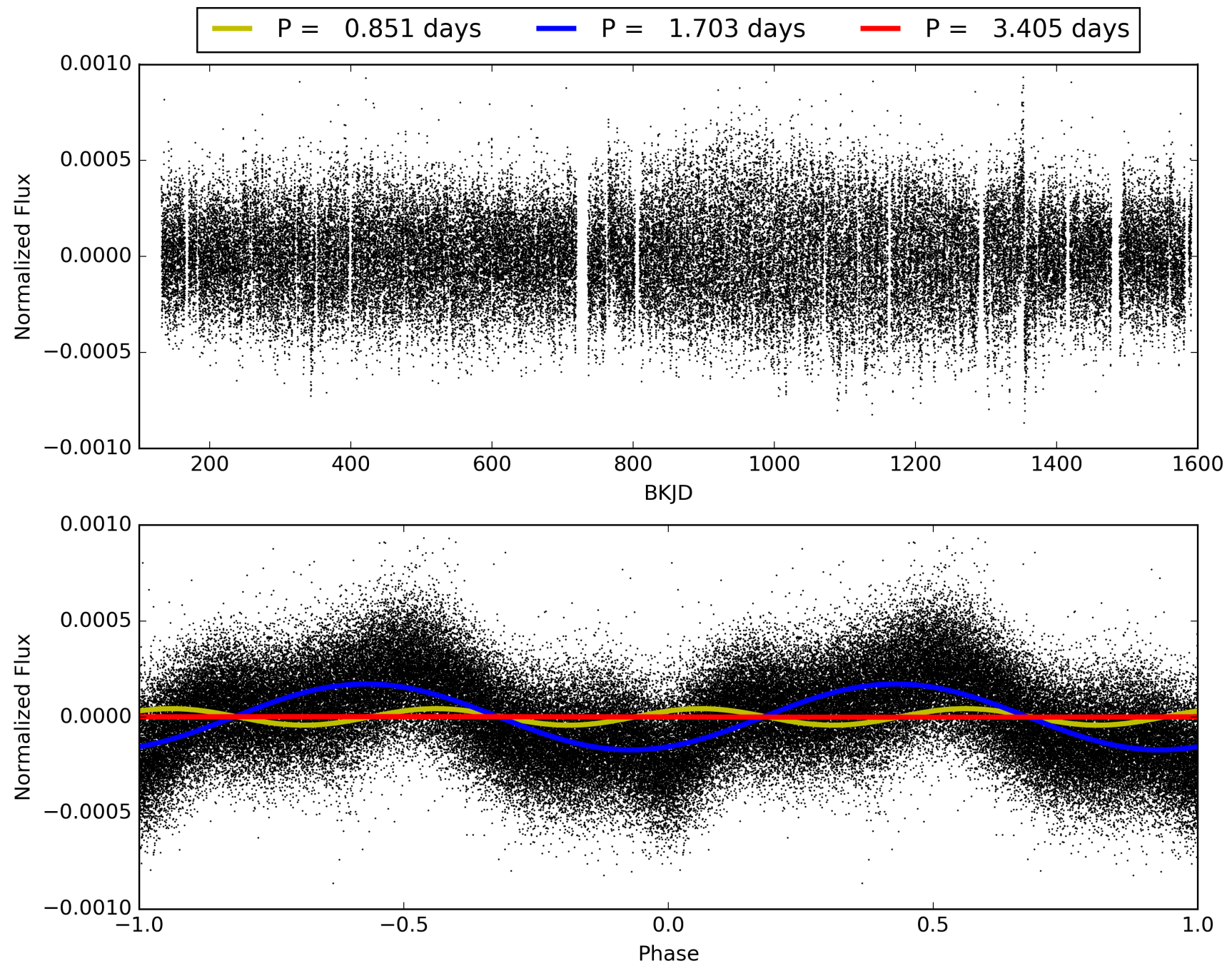
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:30:20 Z

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

TCE 008840117-01, PDC Light Curves

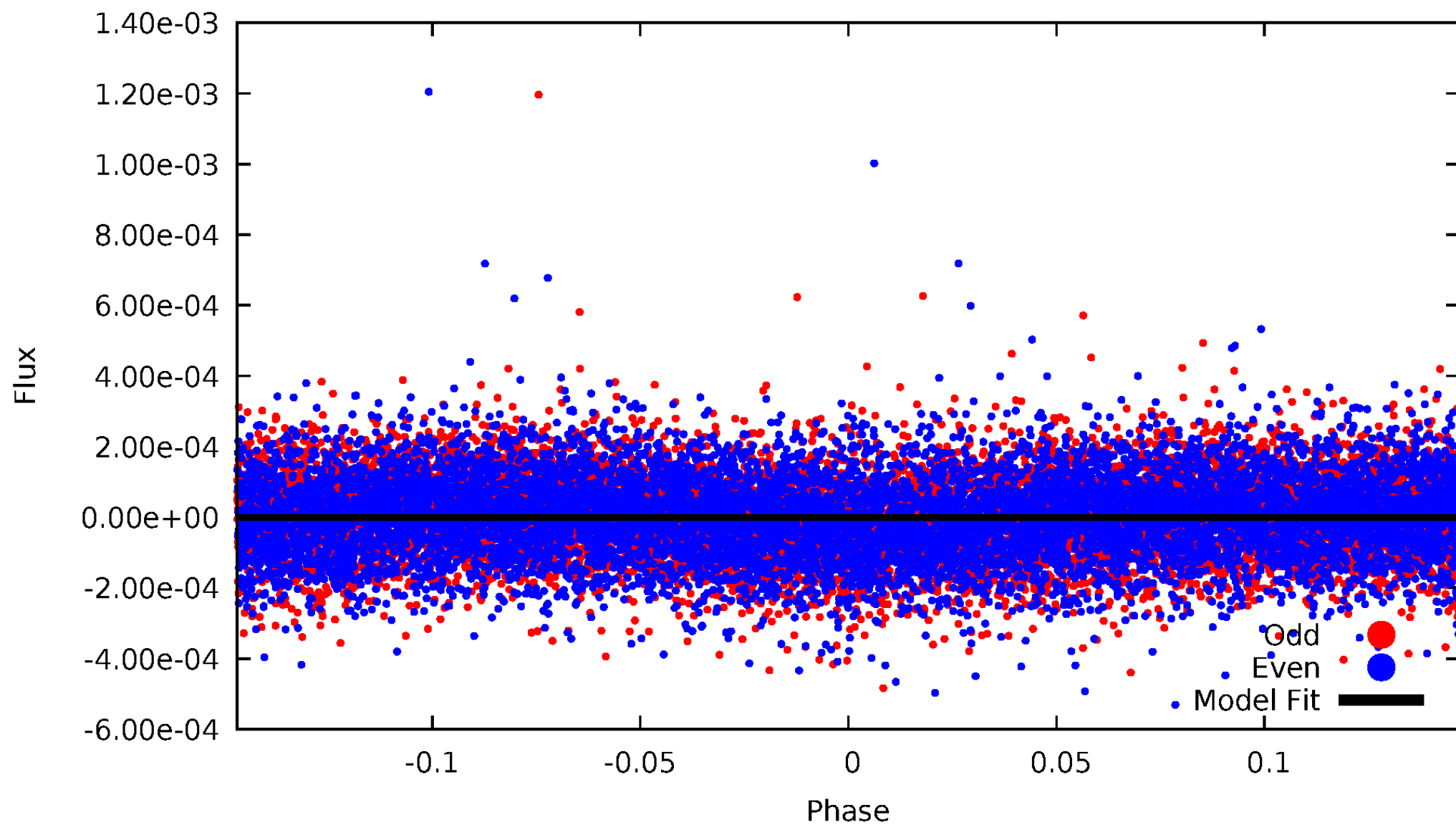


TCE 008840117-01



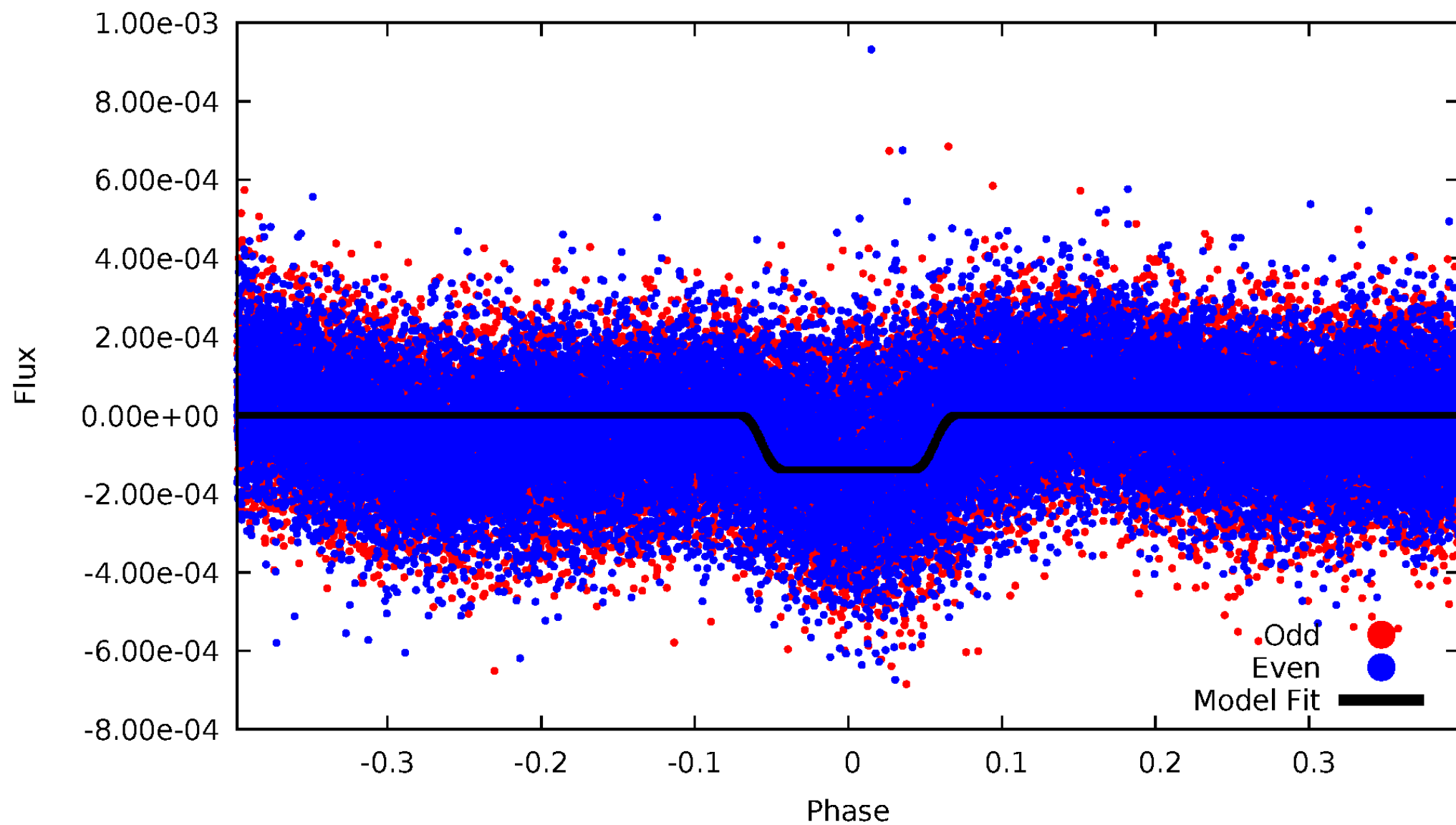
DV Odd/Even

TCE 008840117-01

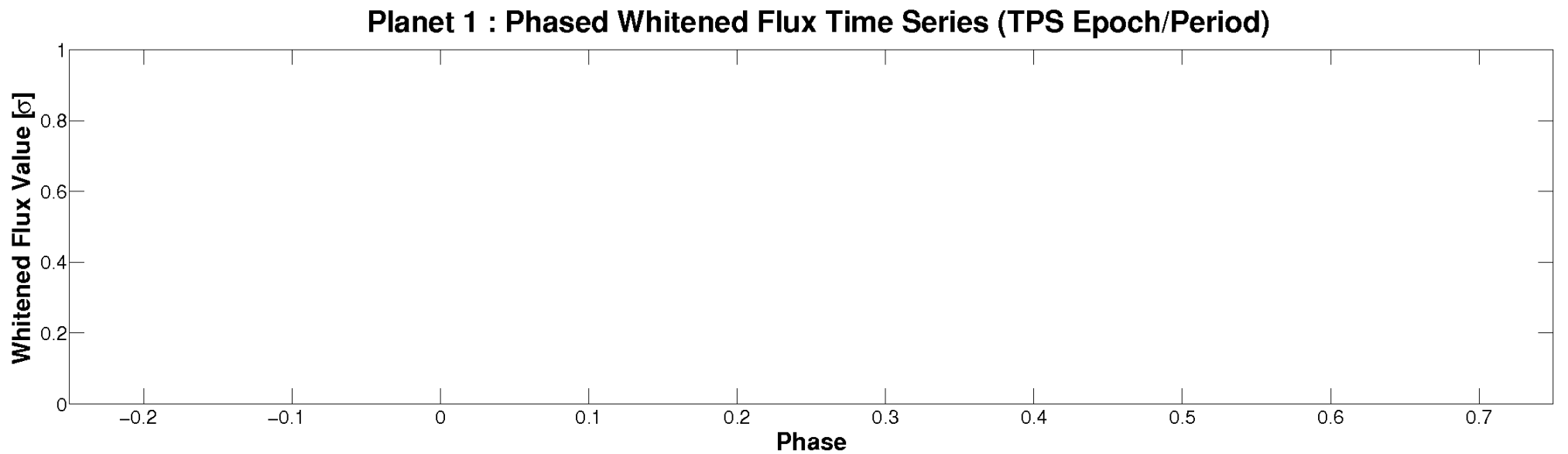
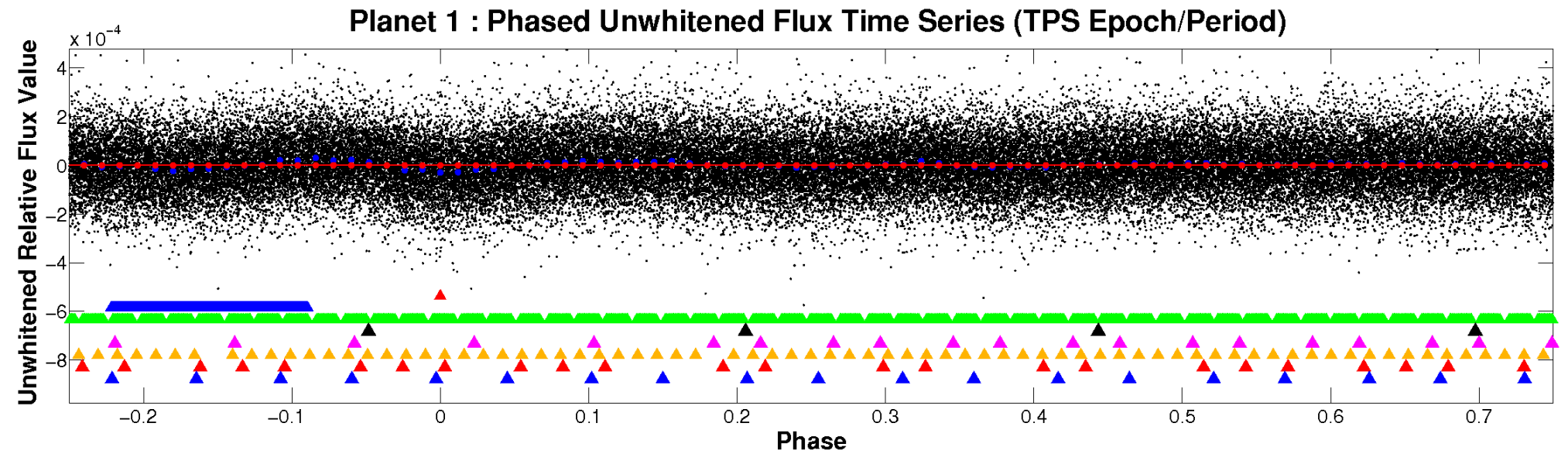


ALT Odd/Even

TCE 008840117-01

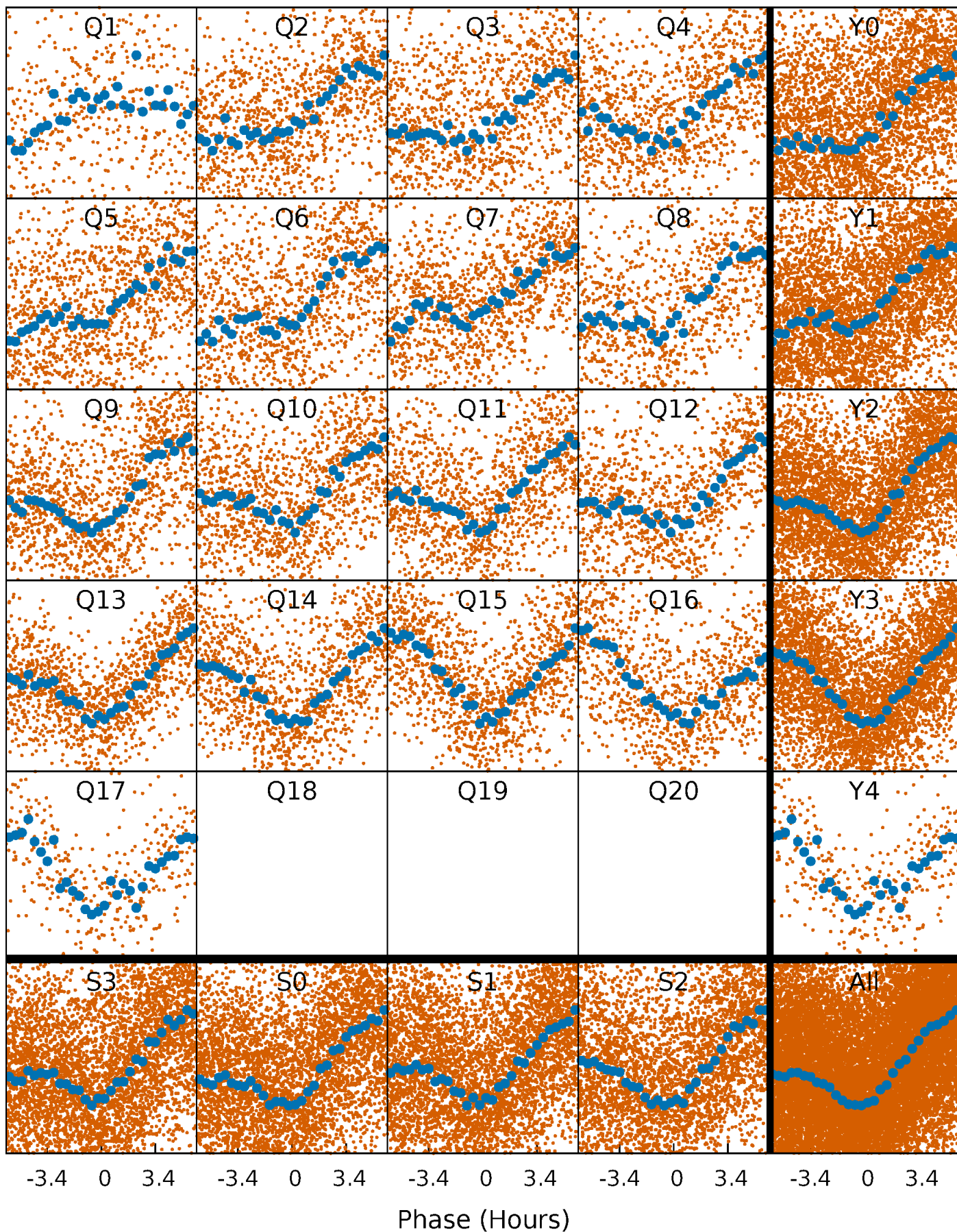


Non-Whitened Vs. Whitened Light Curve



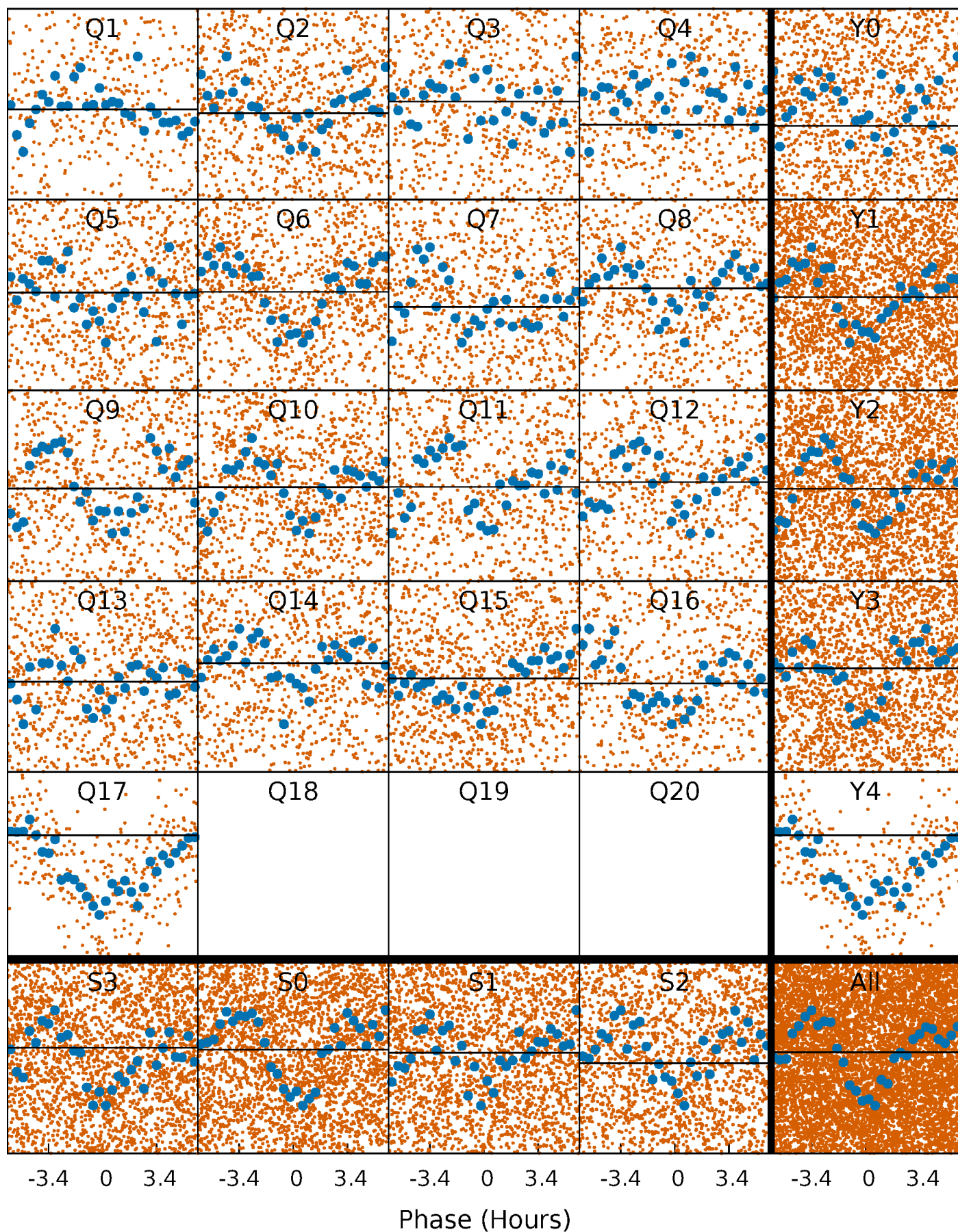
PDC Quarter-Phased Transit Curves

TCE 008840117-01 P= 1.702570 Days $T_0=132.507027$ (BKJD)



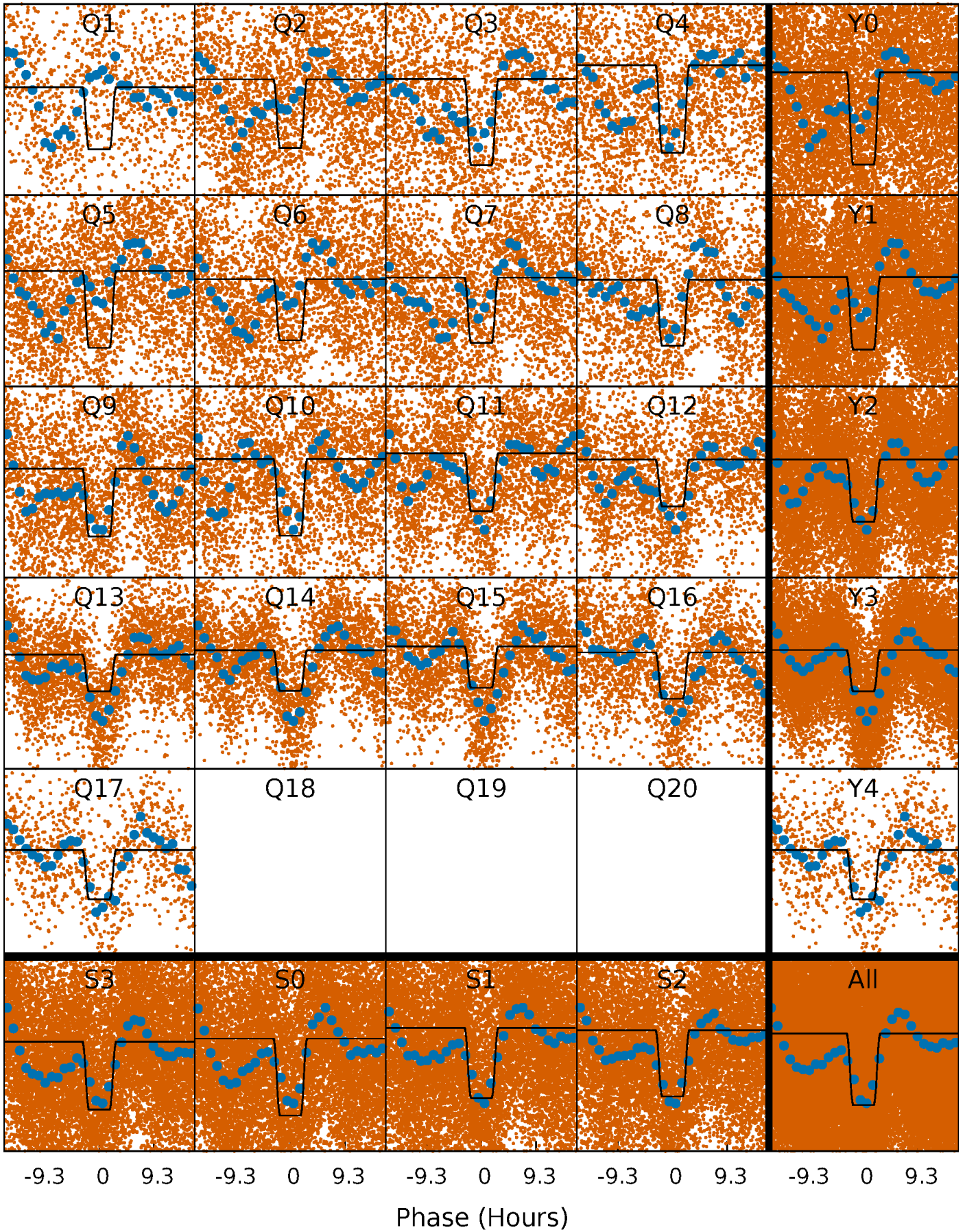
DV Quarter-Phased Transit Curves

TCE 008840117-01 P= 1.702570 Days $T_0=132.507027$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

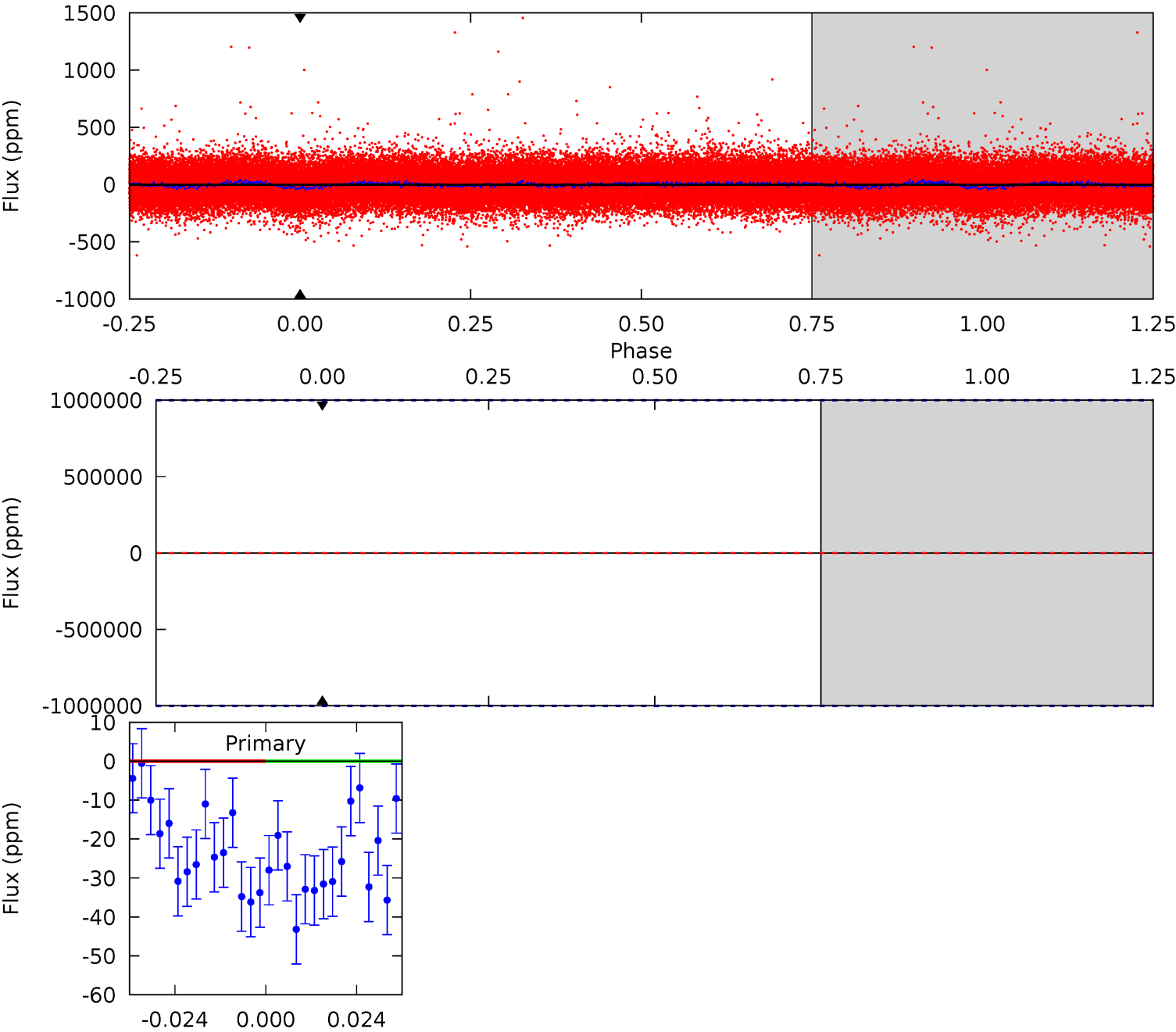
TCE 008840117-01 P= 1.702570 Days $T_0=132.492155$ (BKJD)



DV Model-Shift Uniqueness Test

008840117-01, P = 1.702570 Days, E = 130.804457 Days

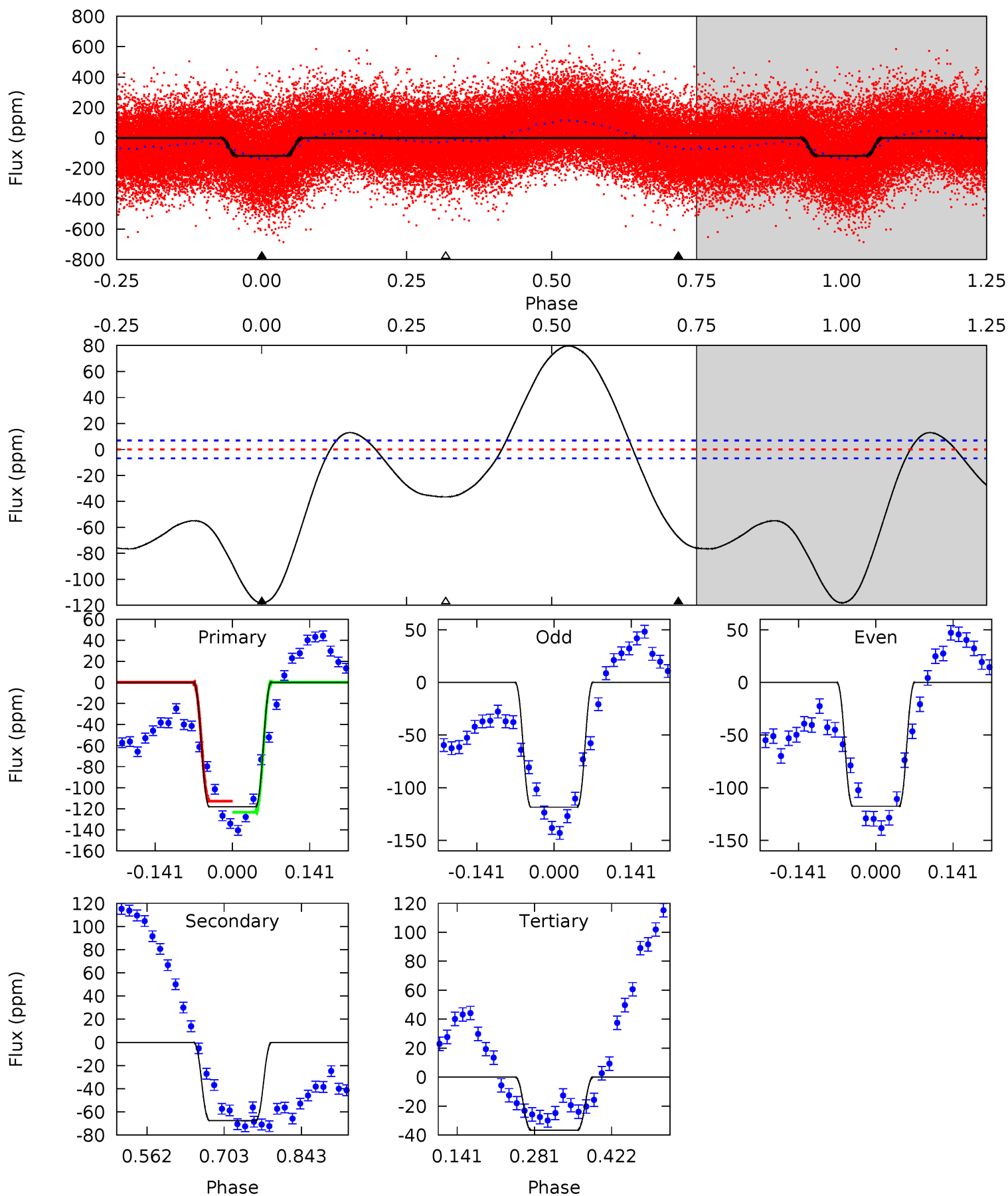
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008840117-01, P = 1.702570 Days, E = 130.789585 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
76.8	43.9	23.8	0	4.49	1.47	26.8	53.0	76.8	20.1	43.9	0.27	0.96	0.40	3.58



Stellar Parameters For KIC 008840117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6315^{+176}_{-176}	$3.811^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.410^{+0.447}_{-0.830}$	$1.371^{+0.239}_{-0.263}$	$0.138^{+0.270}_{-0.041}$
	+3%/-3%	+8%/-3%	+300%/-250%	+19%/-34%	+17%/-19%	+196%/-30%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008840117-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$18.65^{+17.40}_{-13.21}$	3383^{+186}_{-323}	-4558^{+28566}_{-20078}	$-1.322^{+245.318}_{-263.796}$
Alt.	-67 ± 2	$19.24^{+20.25}_{-13.07}$	3369^{+206}_{-296}	-3045^{+6675}_{-266}	$0.099^{+0.803}_{-0.075}$

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

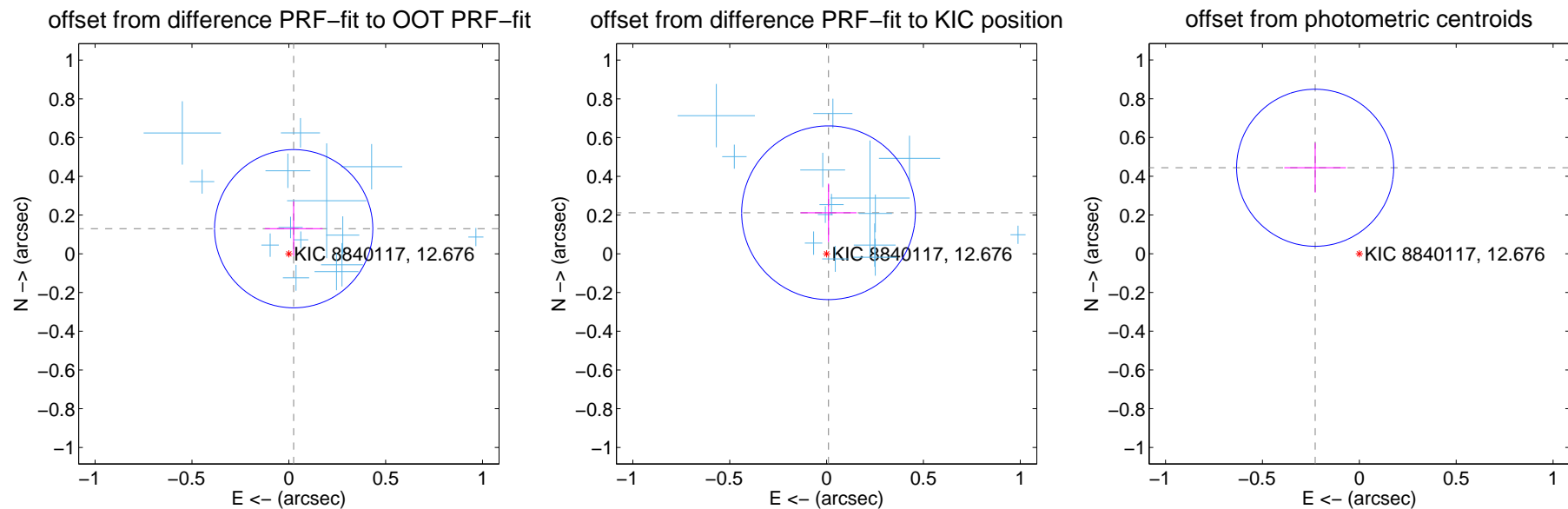
DV Centroid Data

Supplemental centroid analysis for 008840117-01. Kepler magnitude: 12.68. Transit SNR -1.00

There are 16 quarters with good PRF difference image offsets

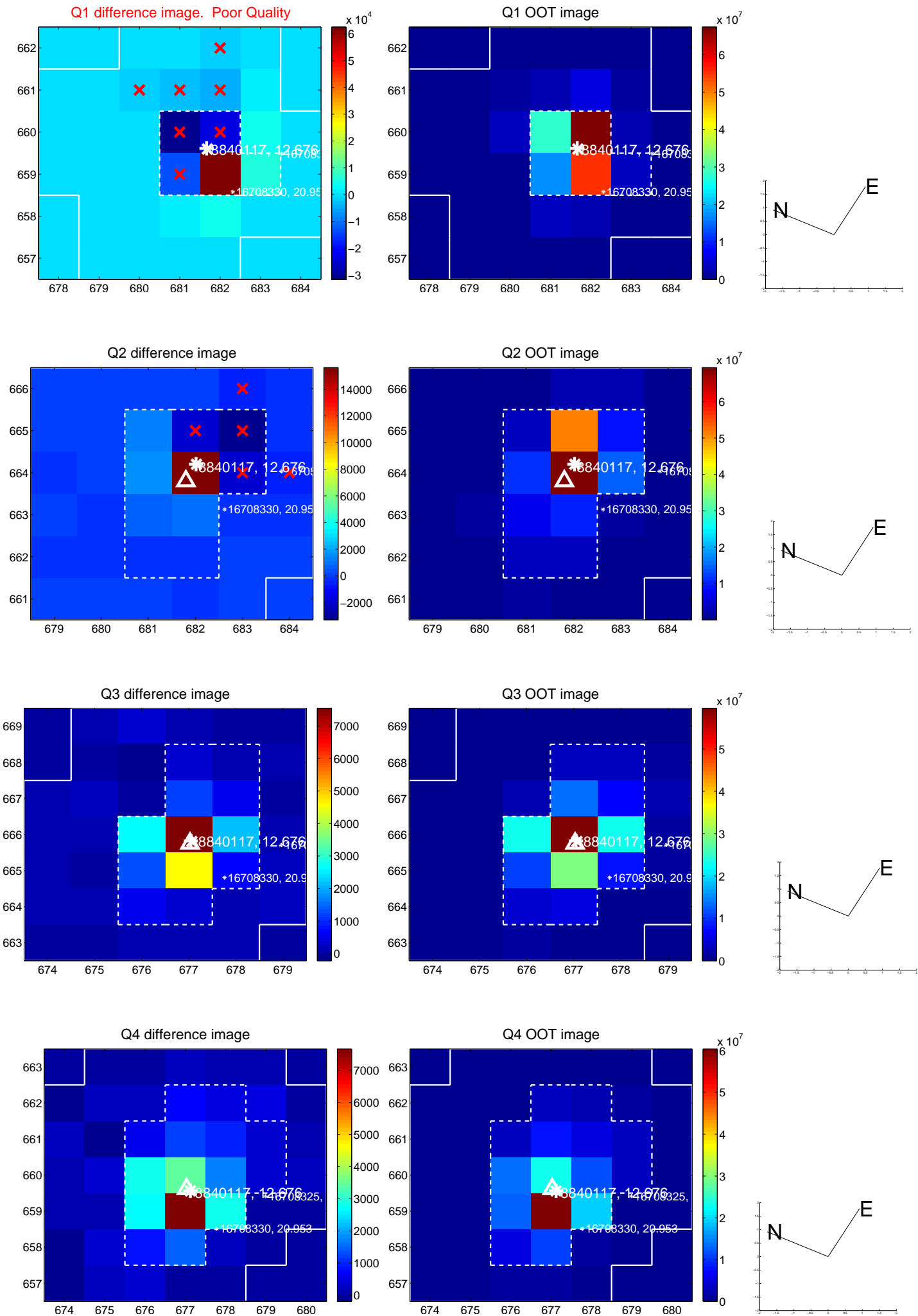
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.132 ± 0.136	0.97	-0.025 ± 0.149	0.129 ± 0.141
PRF-fit source offset from KIC position	0.212 ± 0.149	1.42	-0.010 ± 0.145	0.212 ± 0.151
photometric centroid source offset	0.50 ± 0.14	3.69	0.23 ± 0.16	0.44 ± 0.13

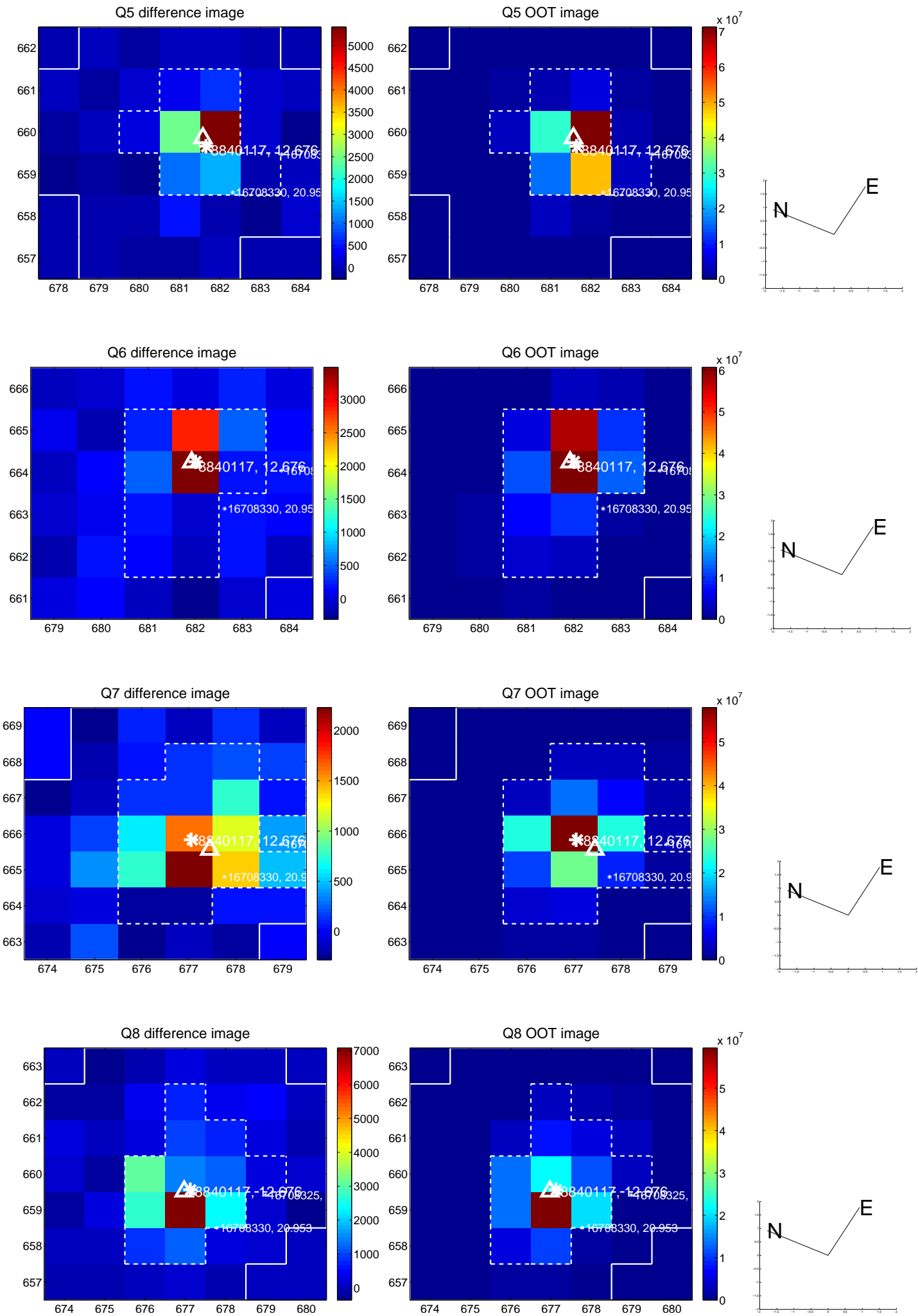


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

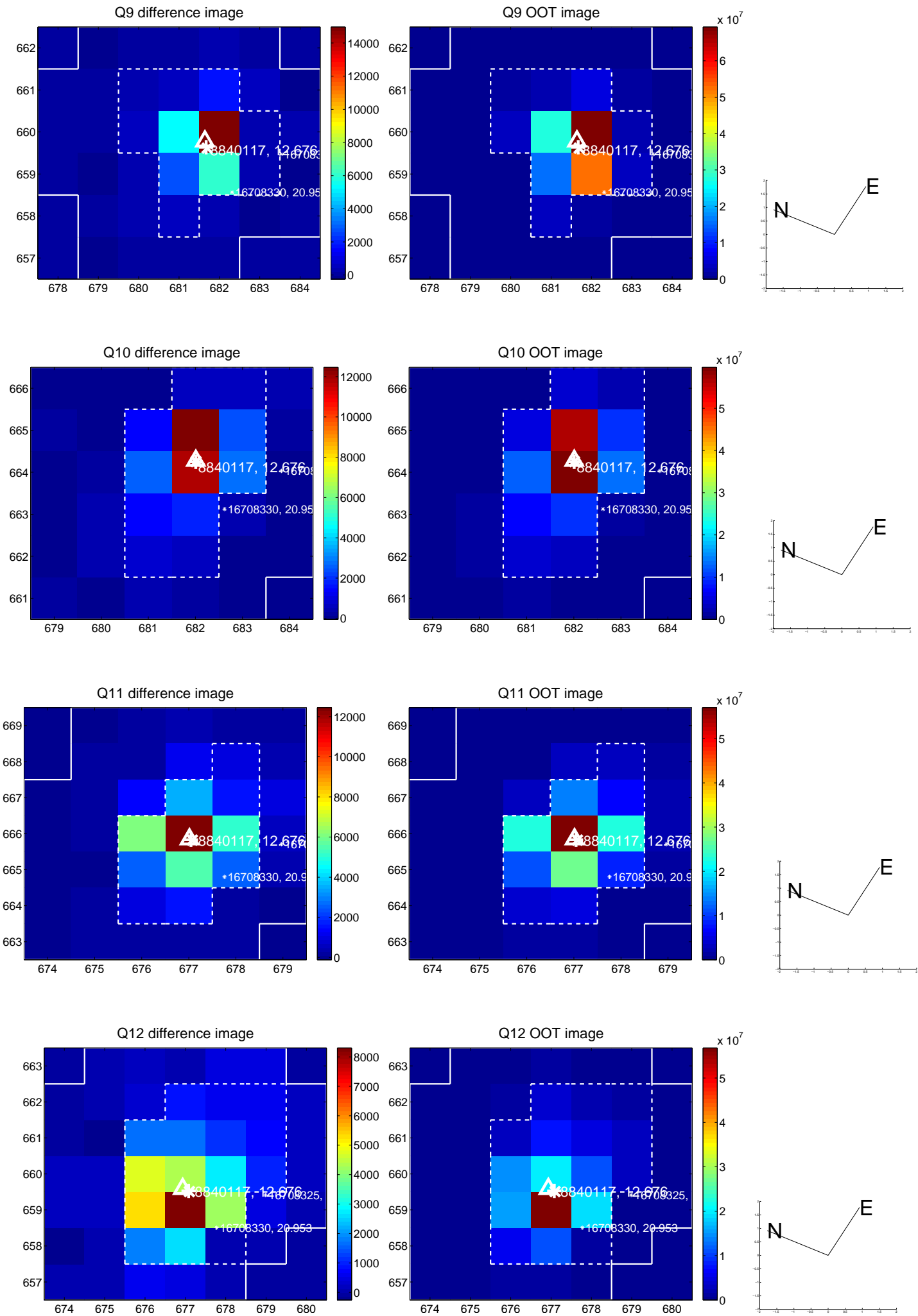
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



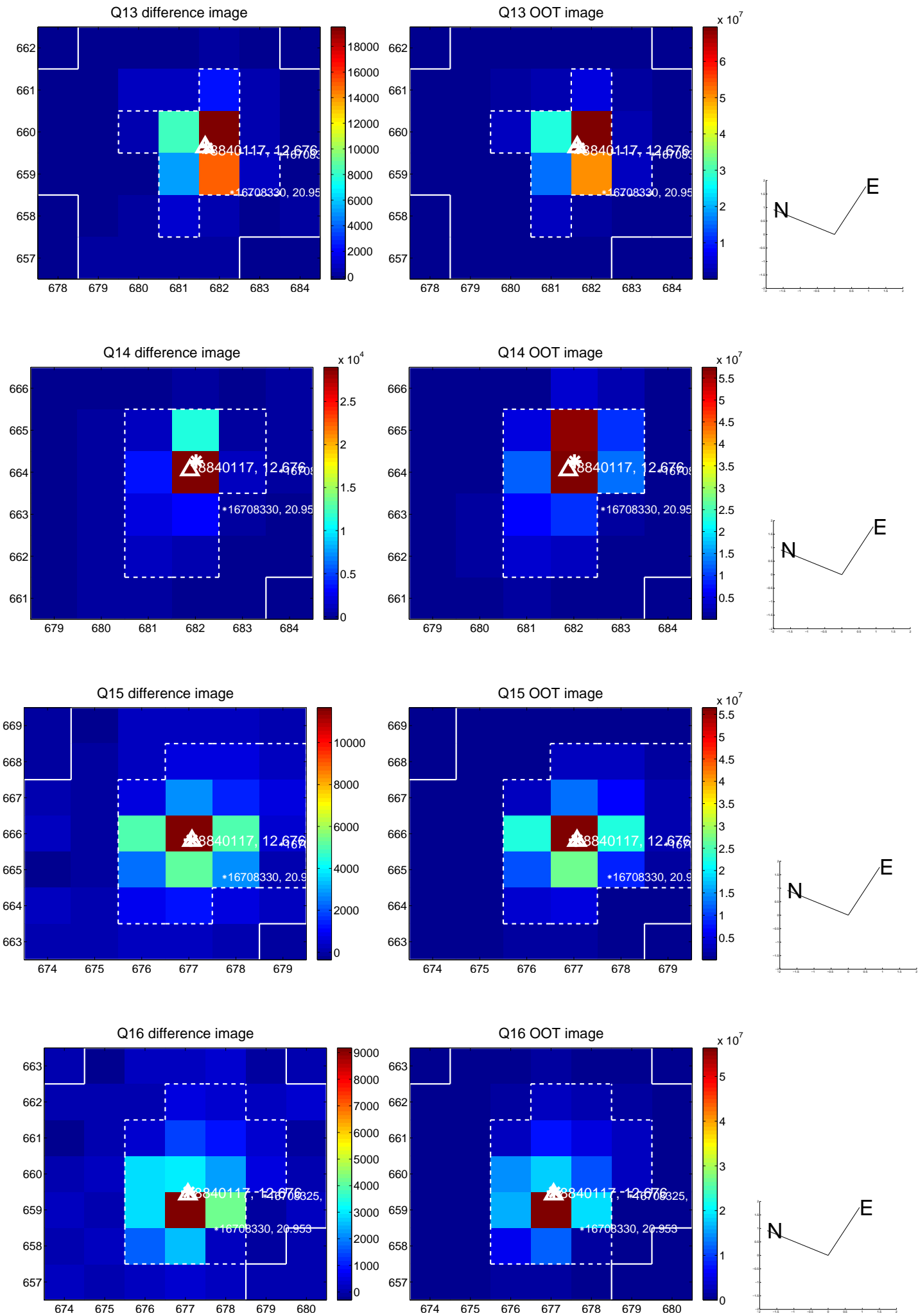
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



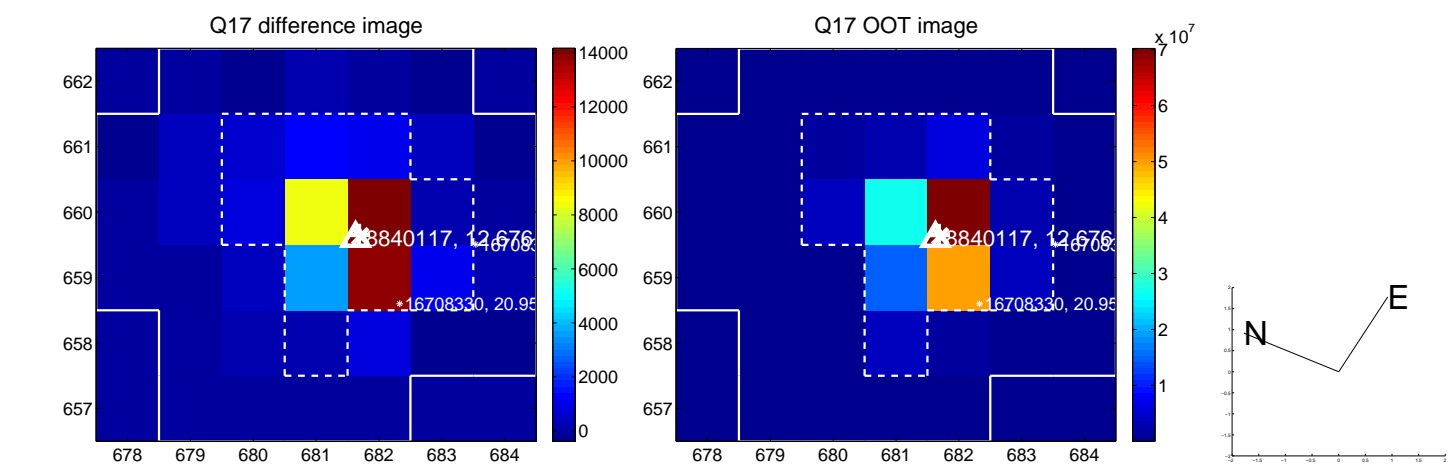
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



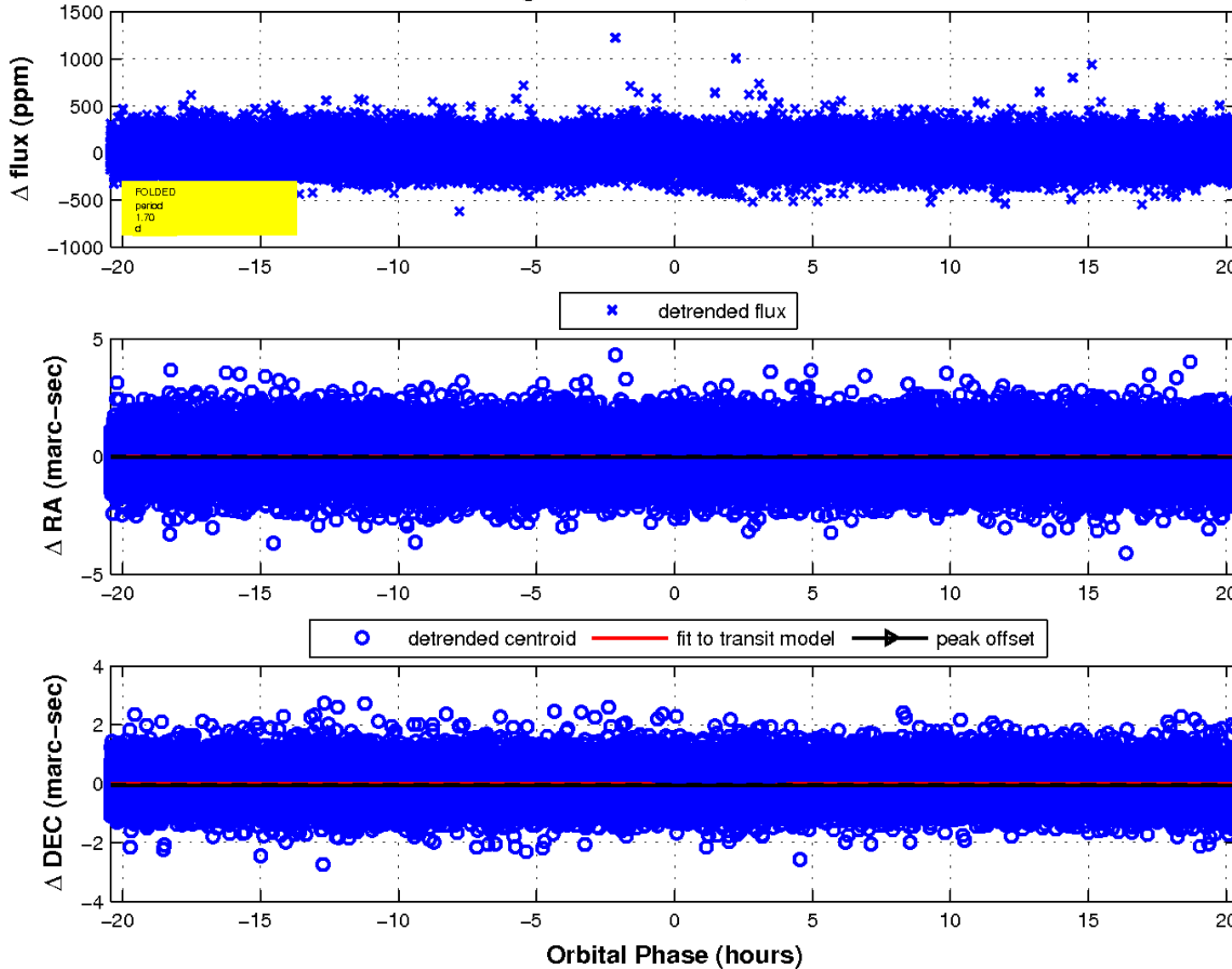
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

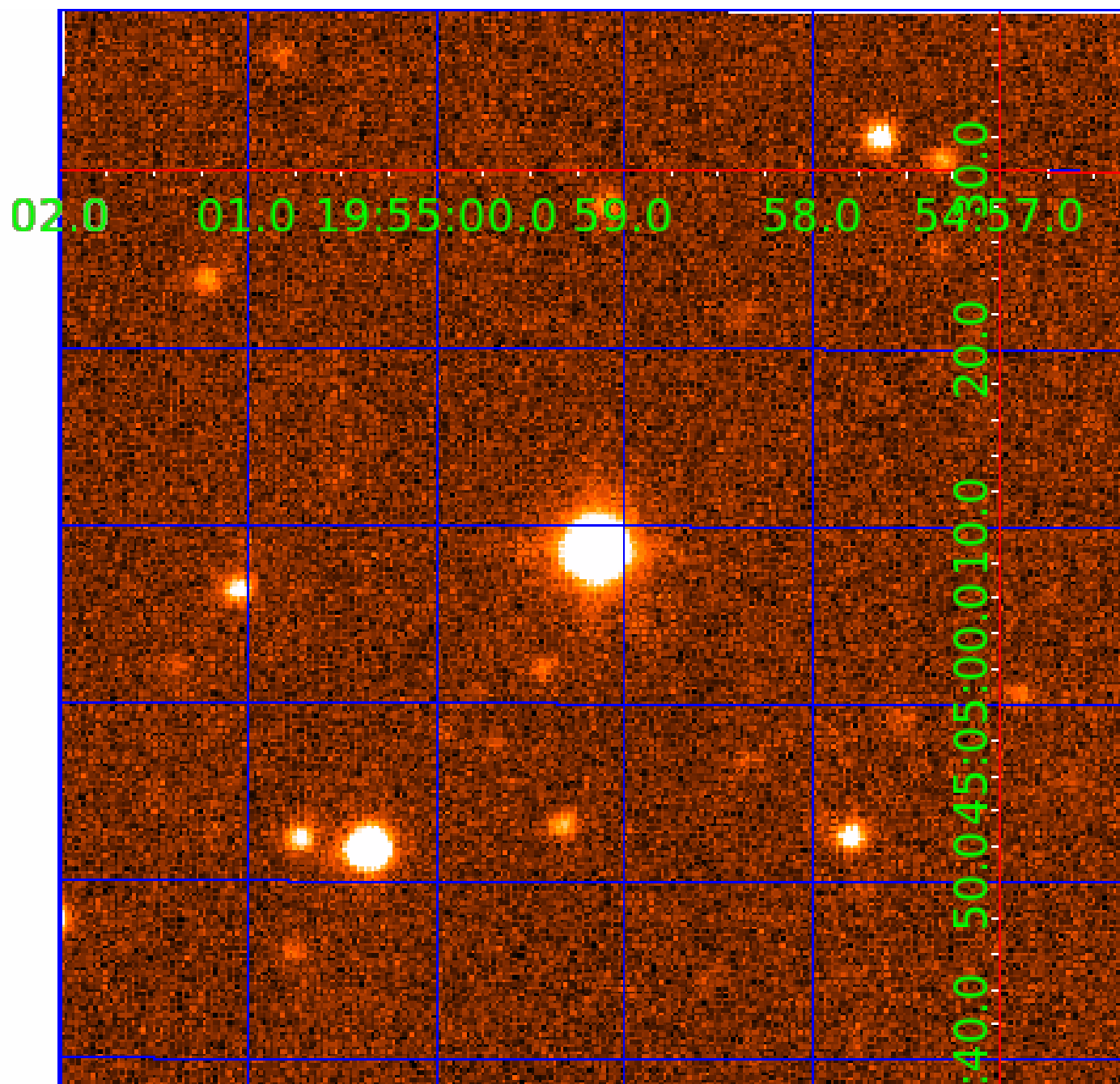


fluxWeightedCentroids, Planet 1 of 8



UKIRT Image

Declination



KIC 008840117

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})
008840117-01	OBS	No	1.702570	132.507027	138.6	3.000	11.4	-1.0	2.41	6315	2.85	8608.47
008840117-02	OBS	No	1.702833	132.129333	25.7	3.908	8.9	9.2	2.41	6315	2.21	8606.69
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008840117-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
008840117-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008840117-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008840117-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008840117-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

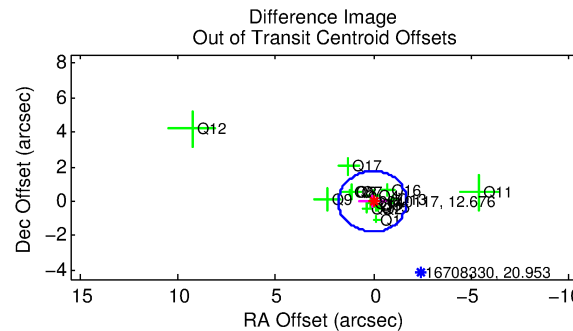
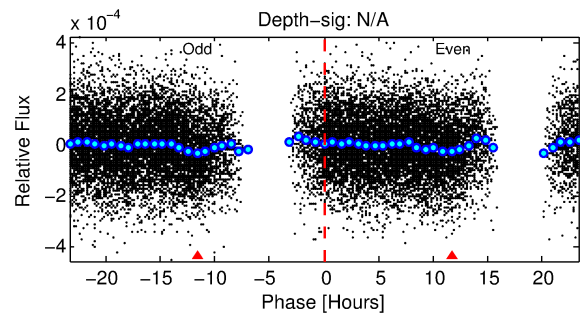
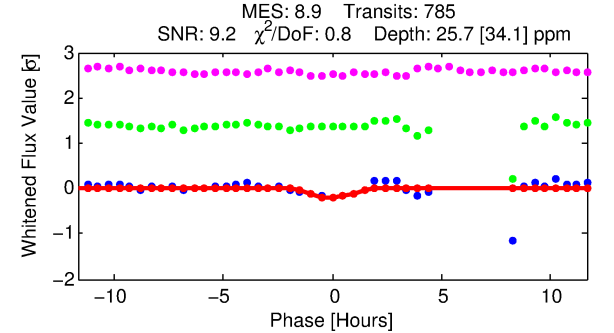
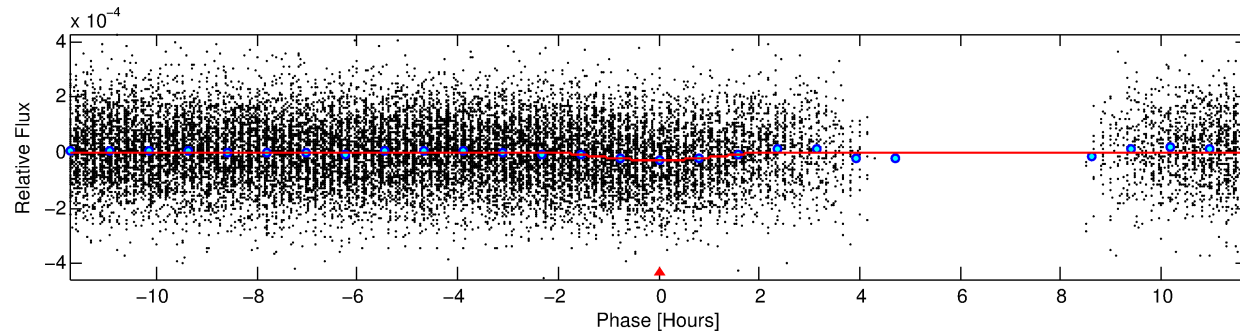
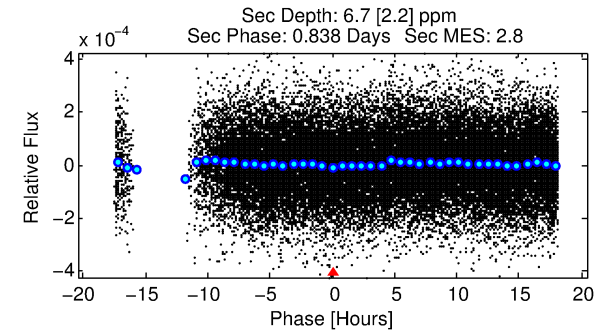
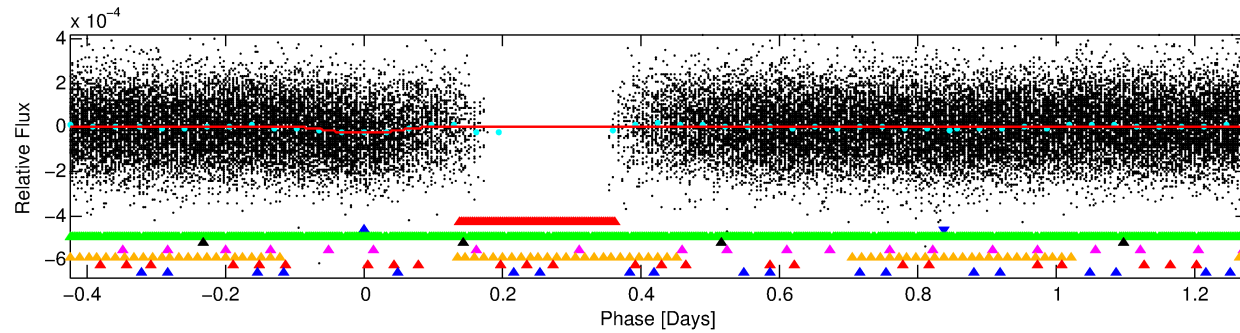
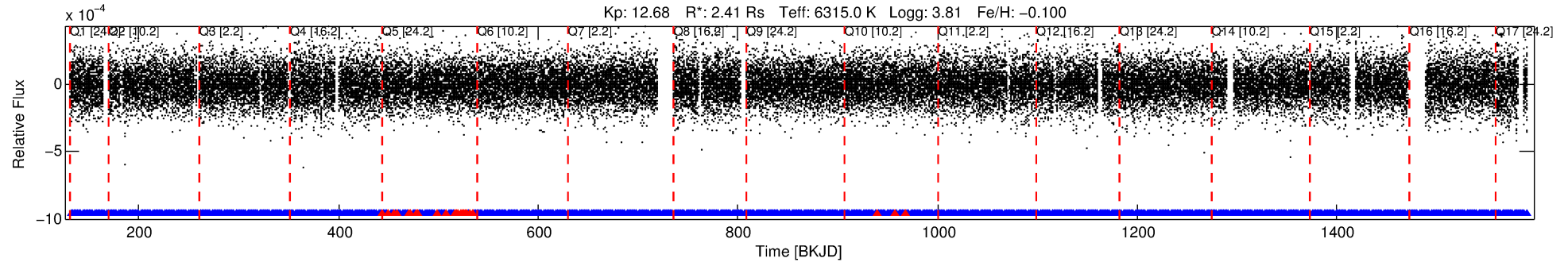
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008840117-02

No Significant Match Found

DV One-Page Summary

KIC: 8840117 Candidate: 2 of 8 Period: 1.703 d



DV Fit Results:

Period = 1.70283 [0.00003] d
Epoch = 132.1293 [0.0081] BKJD
Rp/R* = 0.0084 [0.0143]
a/R* = 1.11 [0.12]
b = 1.00 [0.03]
Seff = 8606.69 [4439.42]
Teq = 2456 [317] K
Rp = 2.21 [3.83] Re
a = 0.0310 [0.0099] AU
Ag = 0.73 [2.51] [-0.11σ]
Teffp = 3507 [2993] K [0.35σ]

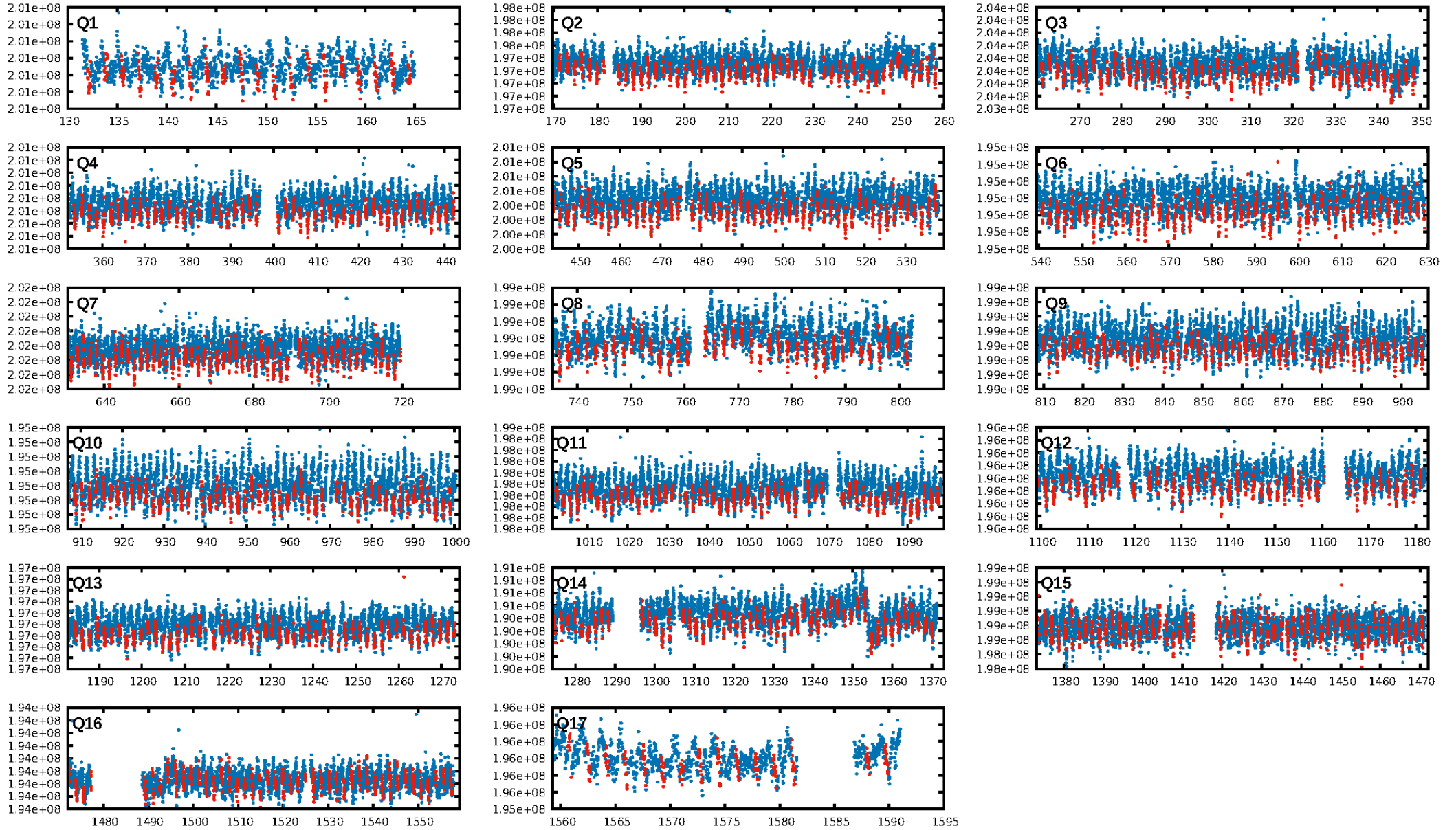
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 51.5% [0.70σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [727/750]
GhostDiagnostic-chr: 3.721
Centroid-sig: 29.6%
Centroid-so: 0.905 arcsec [0.85σ]
OotOffset-rm: 0.051 arcsec [0.09σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-rm: 0.067 arcsec [0.09σ]
KicOffset-st: 3/4/4/5 [16]
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DiffImageOverlap-fno: 0.00 [0/17]

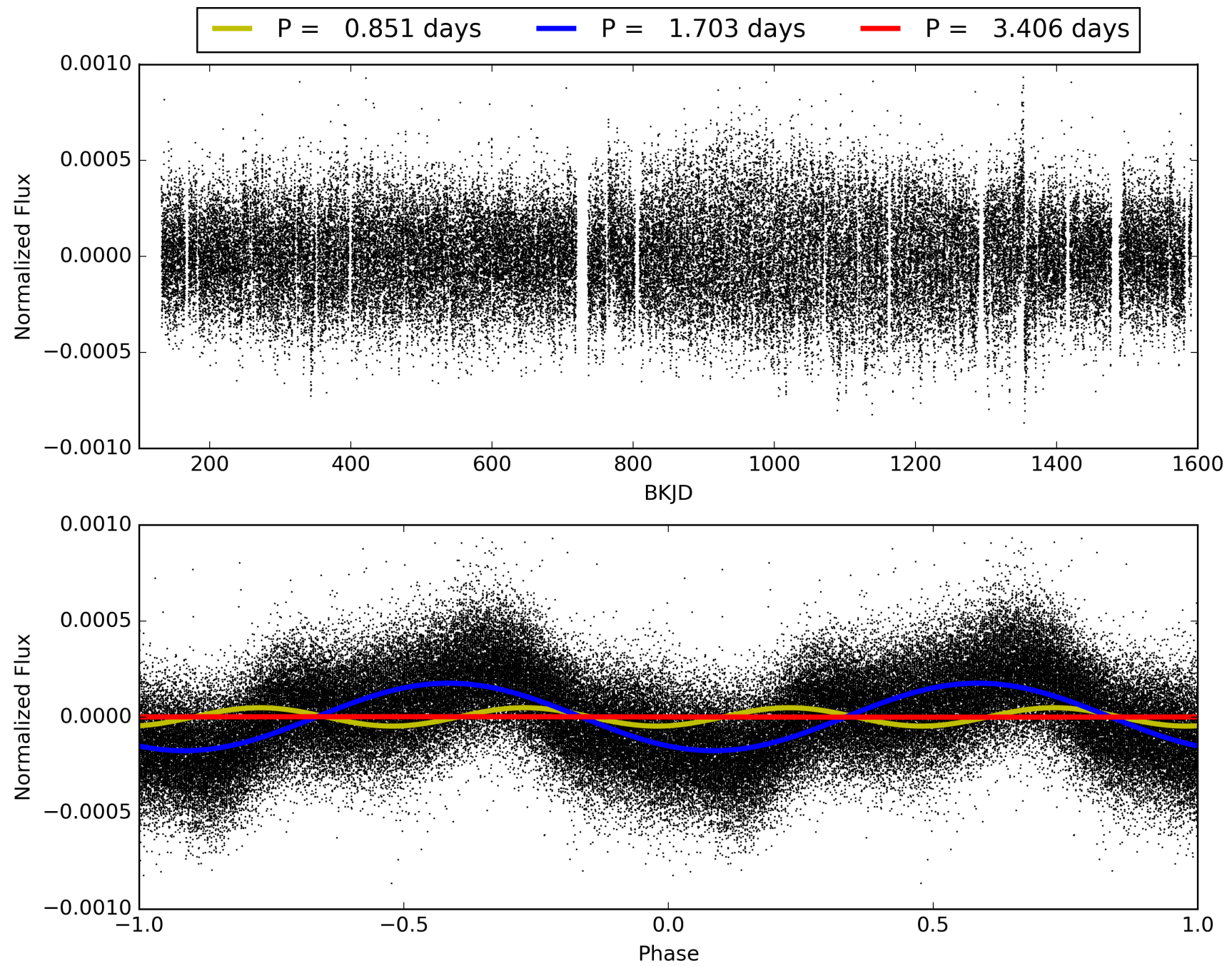
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008840117-02, PDC Light Curves

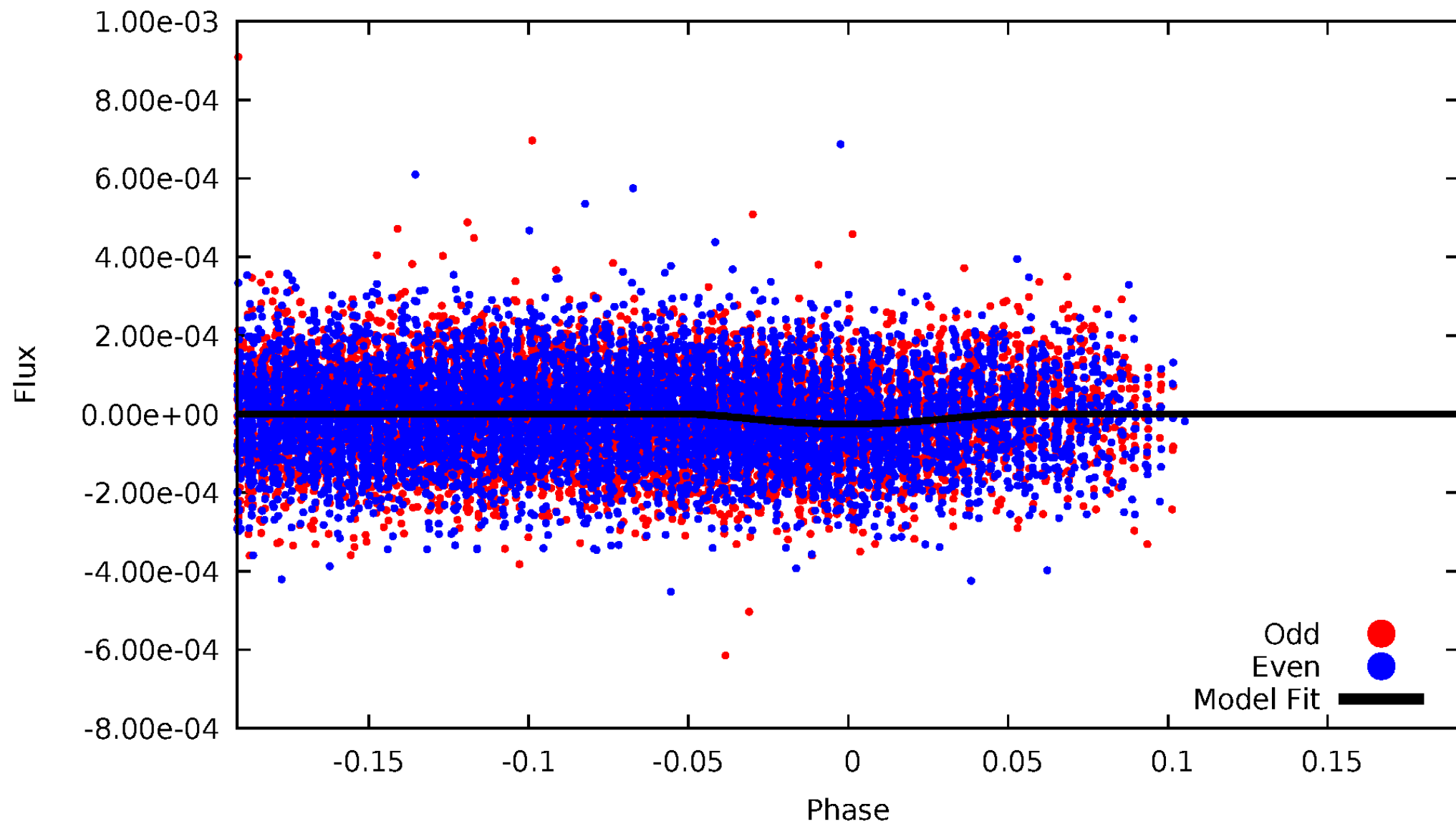


TCE 008840117-02



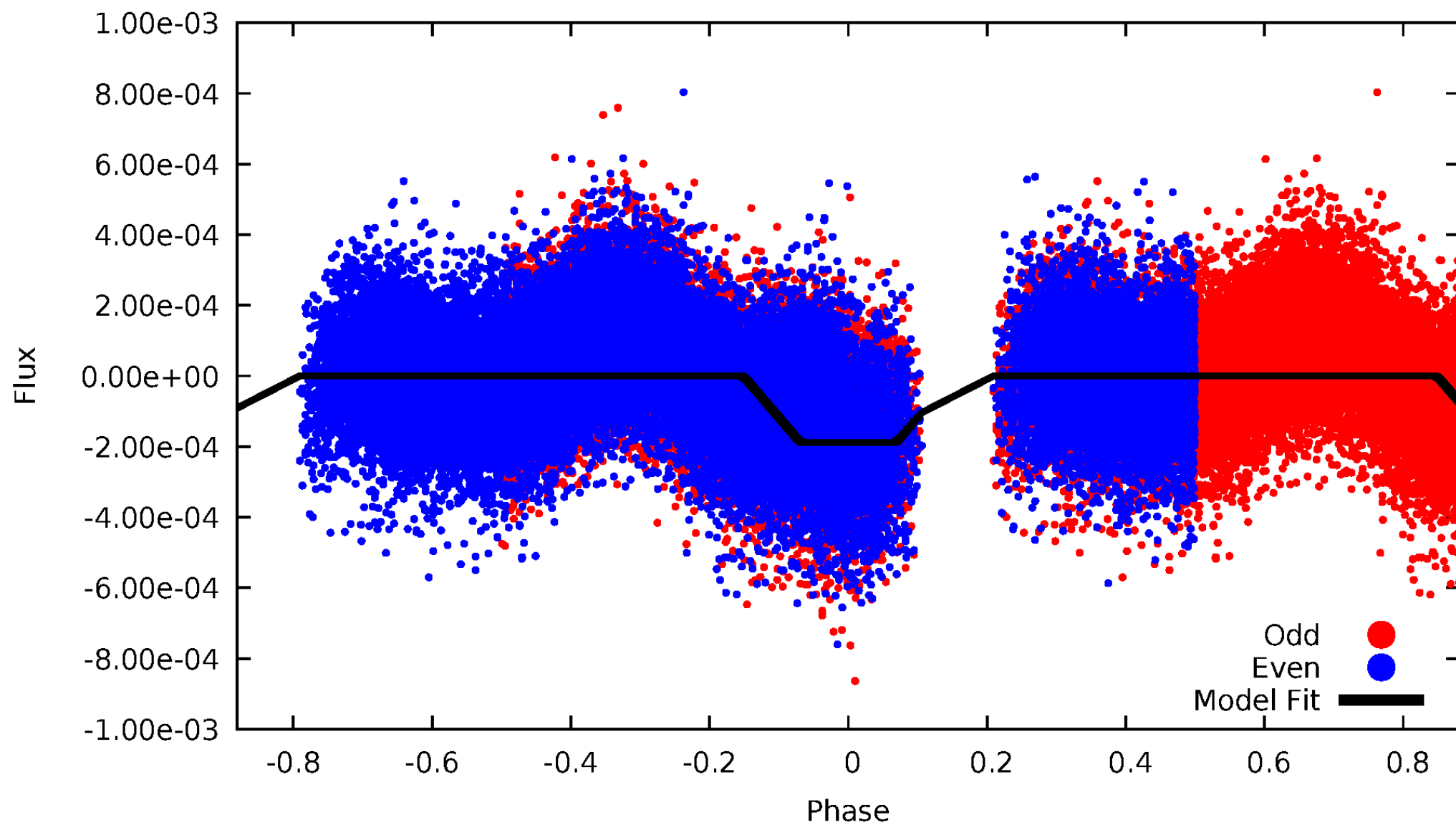
DV Odd/Even

TCE 008840117-02



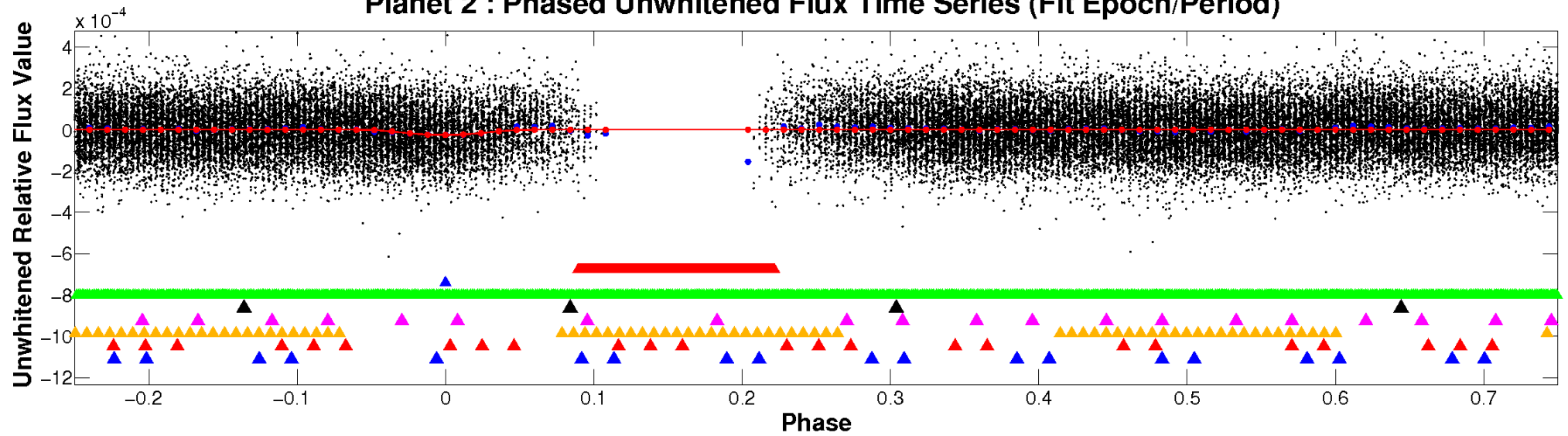
ALT Odd/Even

TCE 008840117-02

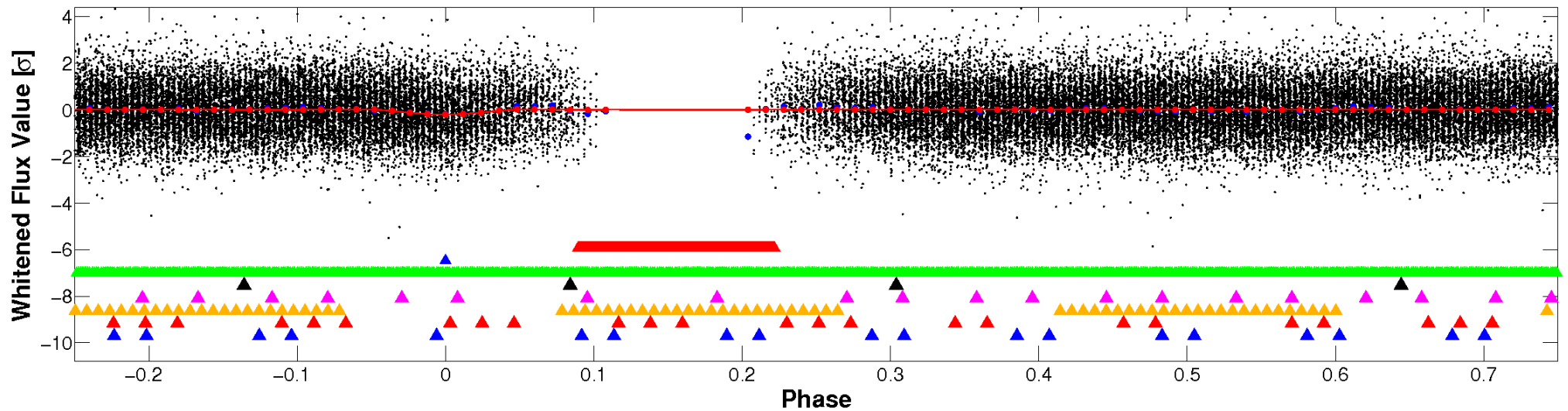


Non-Whitened Vs. Whitened Light Curve

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

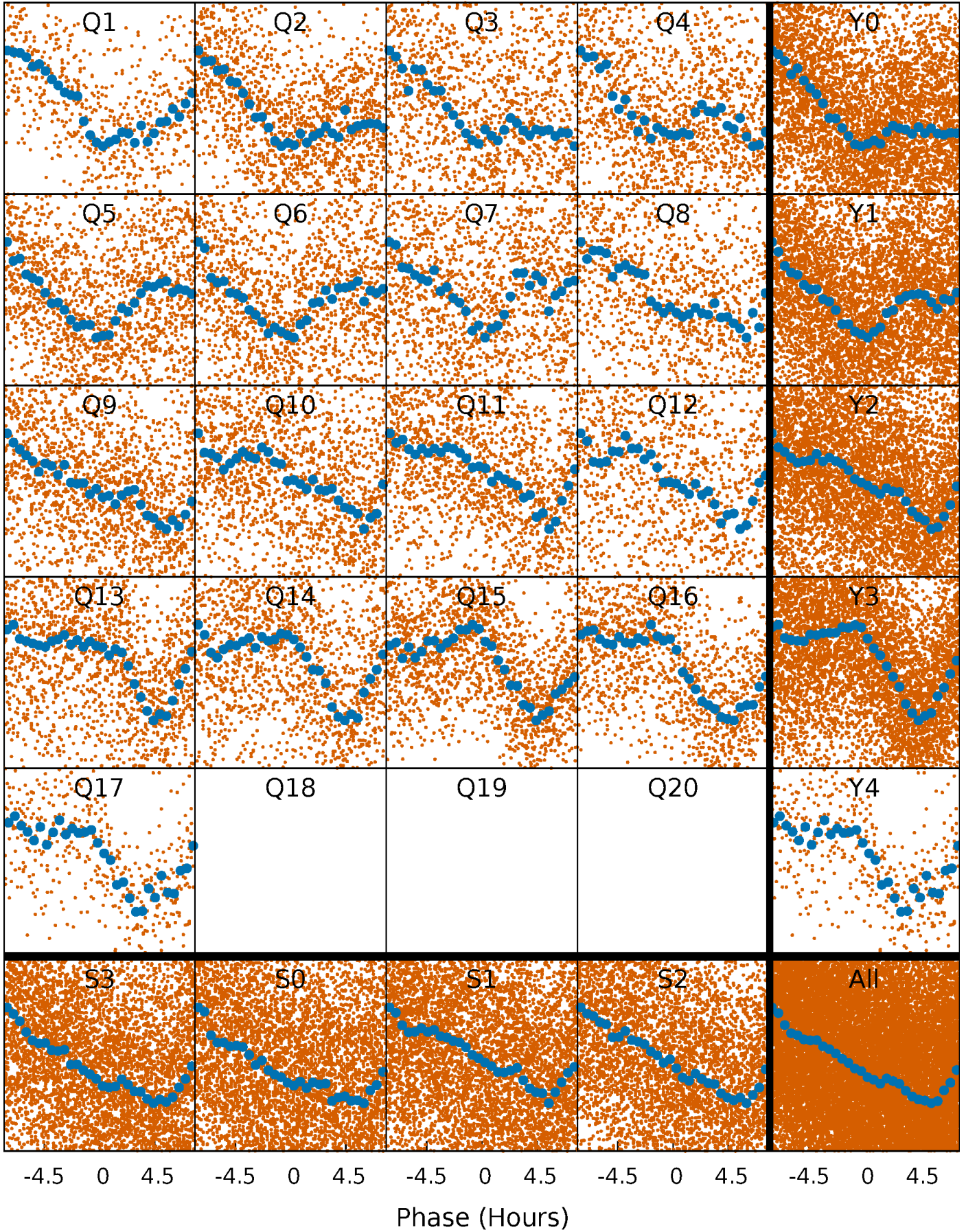


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



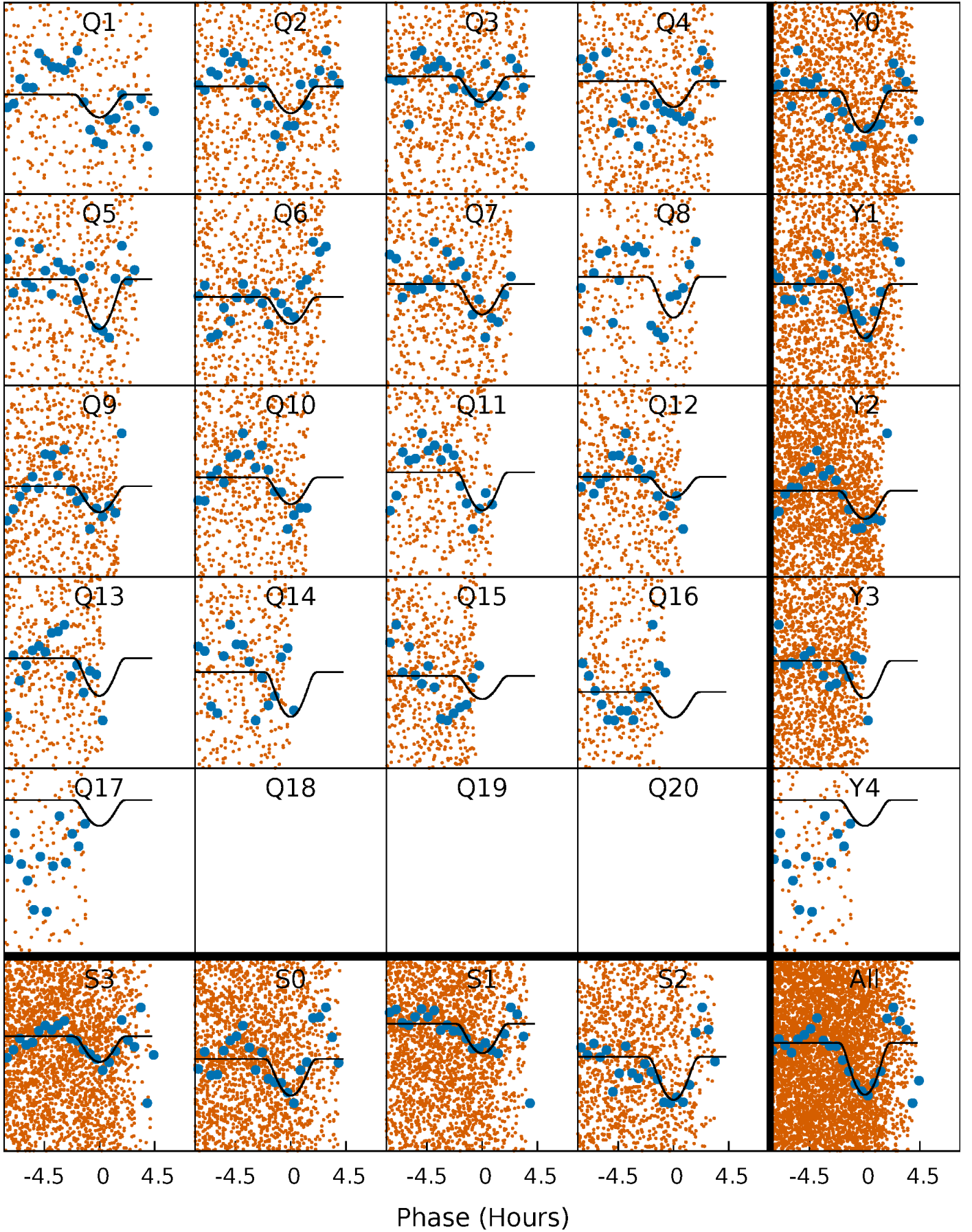
PDC Quarter-Phased Transit Curves

TCE 008840117-02 P= 1.702833 Days $T_0=132.129333$ (BKJD)



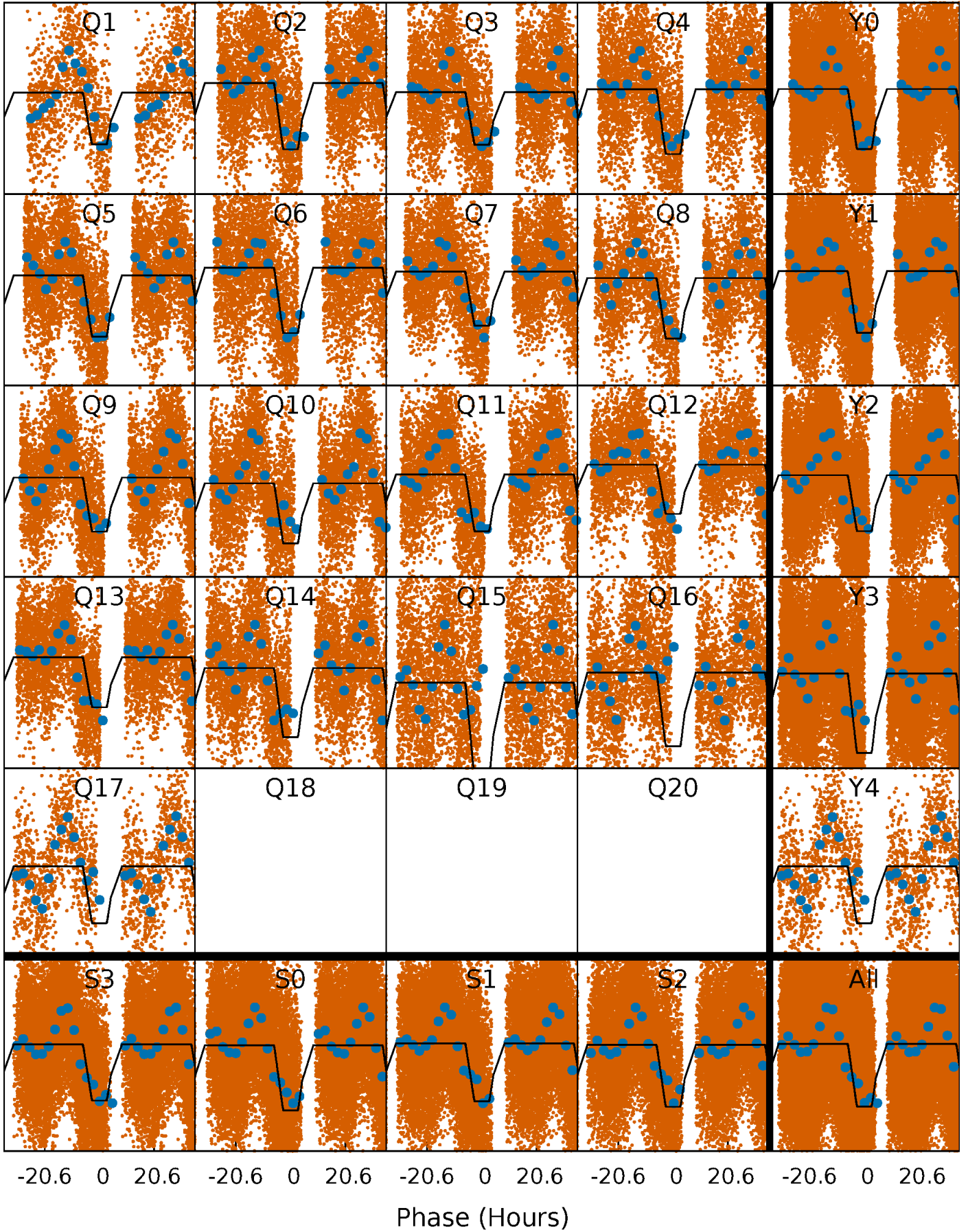
DV Quarter-Phased Transit Curves

TCE 008840117-02 P= 1.702833 Days $T_0=132.129333$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

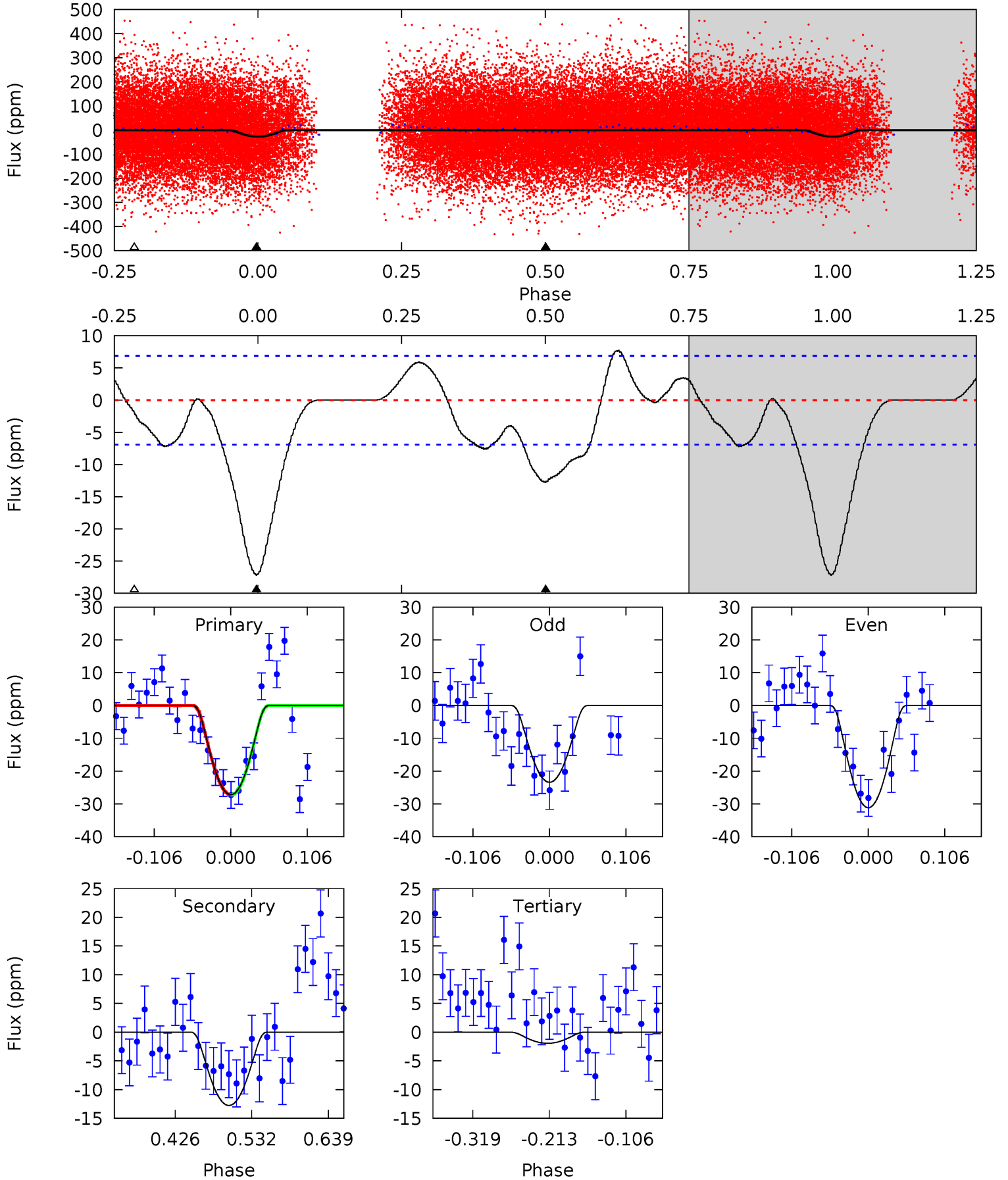
TCE 008840117-02 P= 1.702832 Days $T_0=132.127827$ (BKJD)



DV Model-Shift Uniqueness Test

008840117-02, P = 1.702833 Days, E = 130.426500 Days

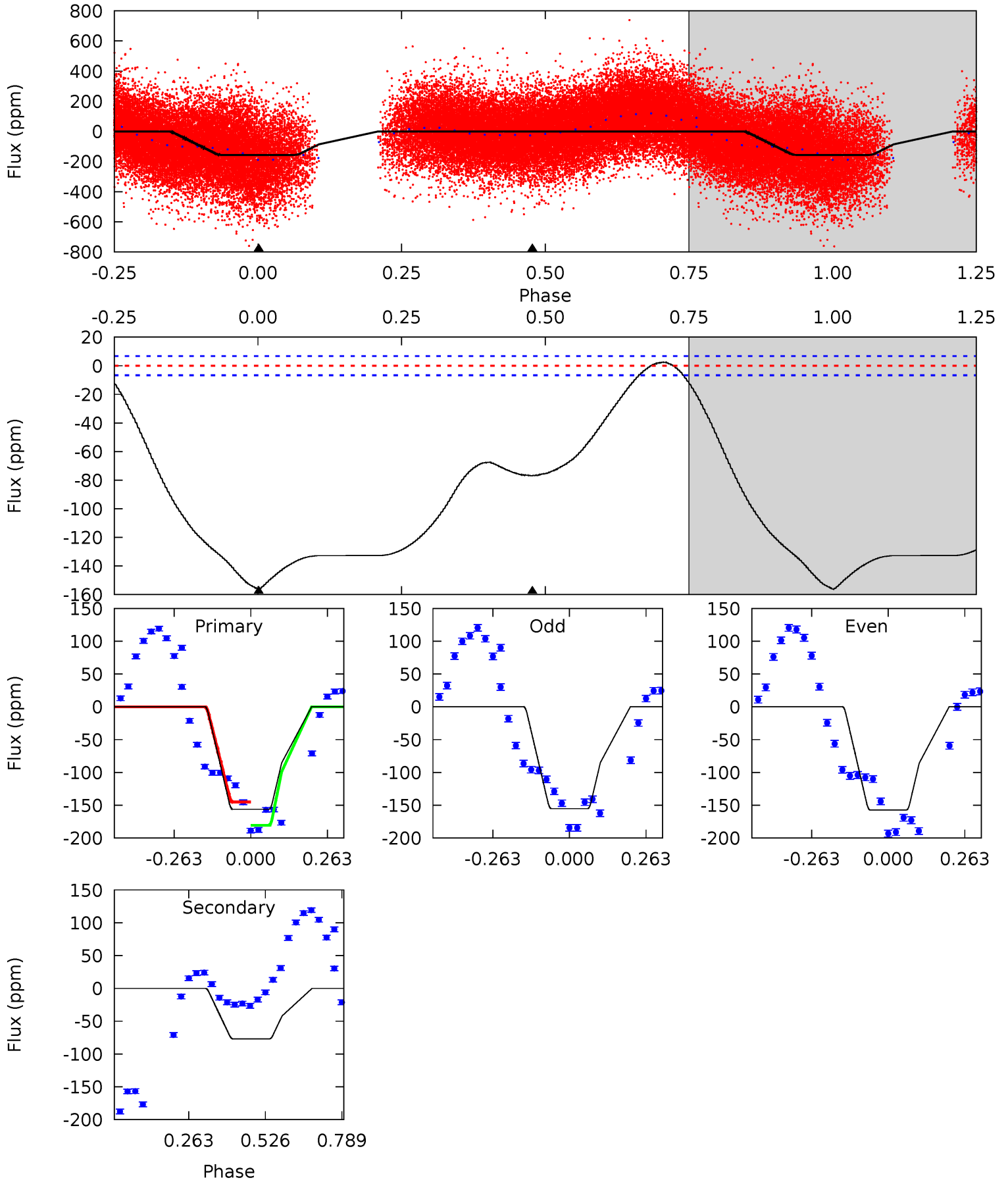
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	8.42	1.28	0	4.55	1.61	2.91	16.7	17.9	7.14	8.42	2.56	0.90	0.22	0.03



Alt Model-Shift Uniqueness Test

008840117-02, P = 1.702832 Days, E = 130.424995 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
101.8	50.1	0	0	4.36	1.12	3.13	101.8	101.8	50.1	50.1	0.62	1.02	0.02	11.6



Stellar Parameters For KIC 008840117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6315^{+176}_{-176}	$3.811^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.410^{+0.447}_{-0.830}$	$1.371^{+0.239}_{-0.263}$	$0.138^{+0.270}_{-0.041}$
	+3%/-3%	+8%/-3%	+300%/-250%	+19%/-34%	+17%/-19%	+196%/-30%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008840117-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 2	$3.56^{+3.39}_{-2.37}$	3367^{+221}_{-301}	3130^{+2152}_{-6147}	$0.539^{+4.238}_{-0.396}$
Alt.	-77 ± 2	$4.15^{+3.23}_{-2.47}$	3360^{+202}_{-285}	4506^{+2780}_{-1002}	$2.361^{+13.029}_{-1.597}$

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

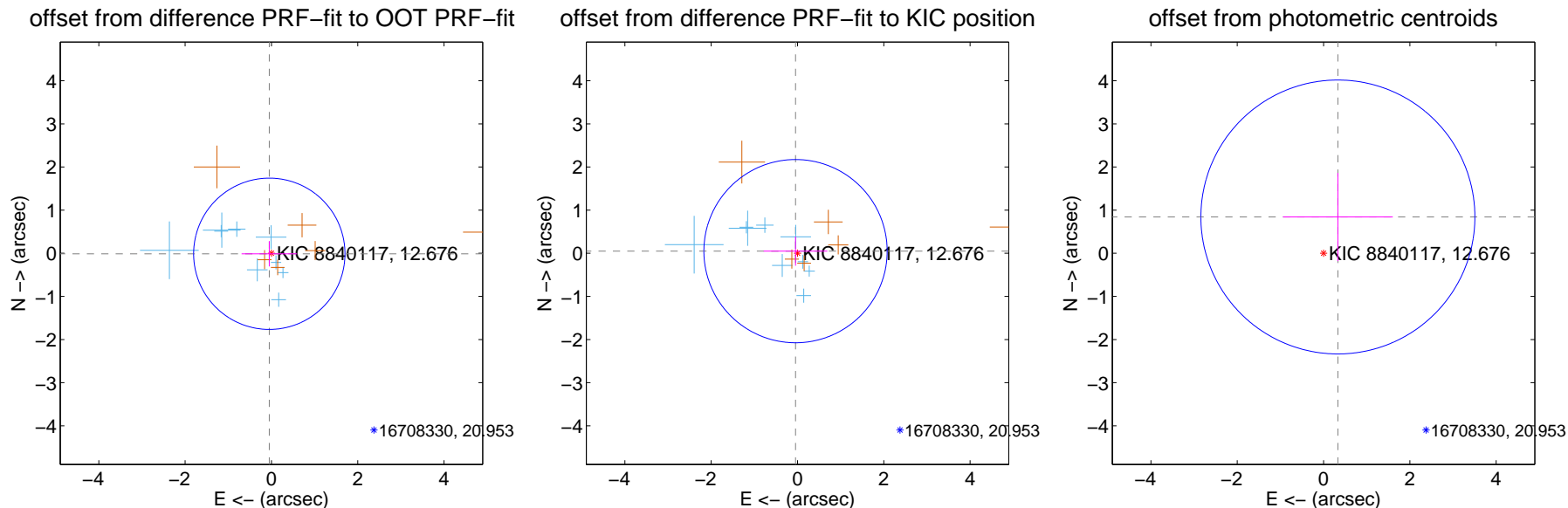
DV Centroid Data

Supplemental centroid analysis for 008840117-02. Kepler magnitude: 12.68. Transit SNR 9.23

There are 9 quarters with good PRF difference image offsets

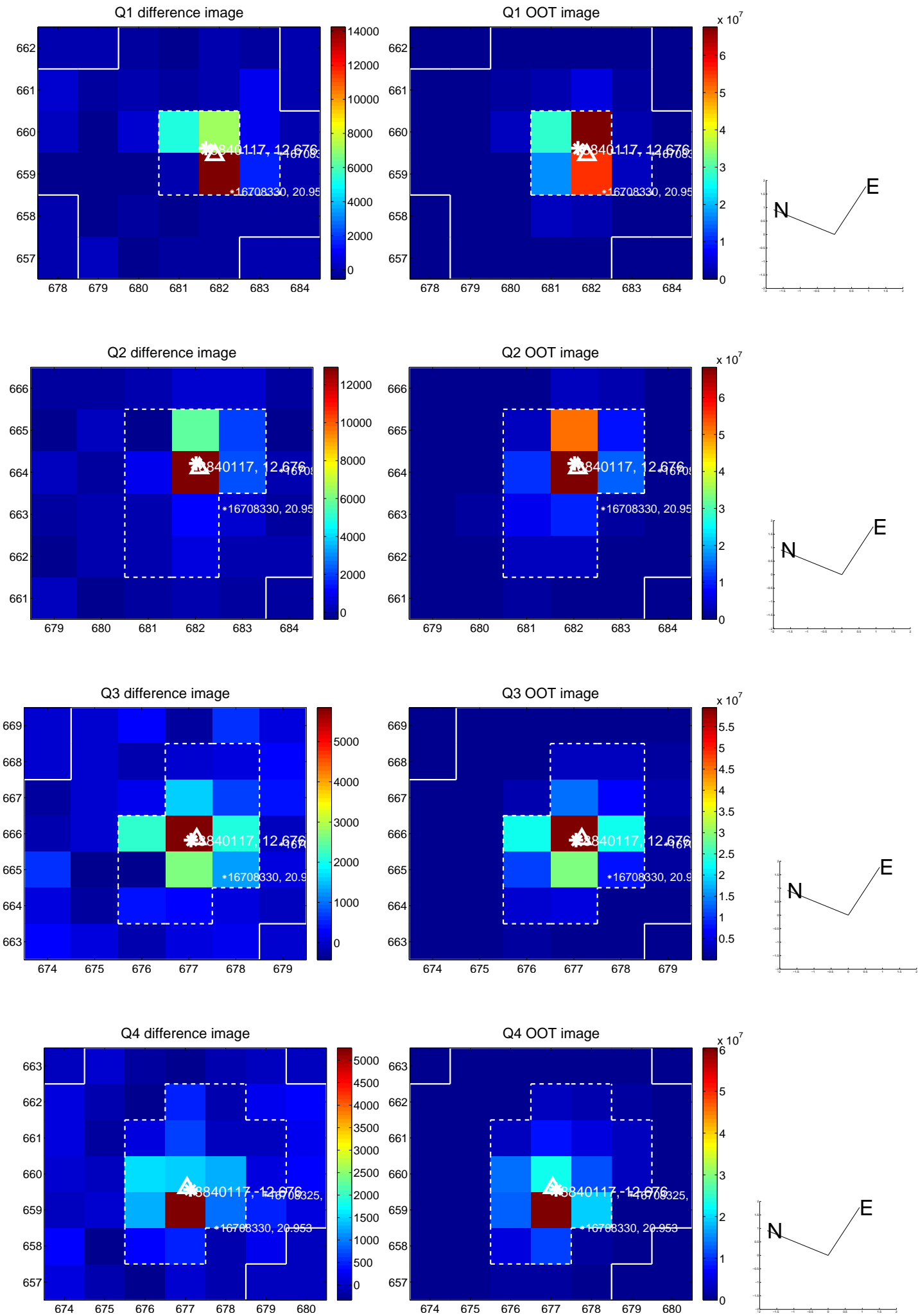
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.585	0.09	0.049 ± 0.643	-0.012 ± 0.293
PRF-fit source offset from KIC position	0.067 ± 0.708	0.09	0.045 ± 0.738	0.049 ± 0.339
photometric centroid source offset	0.90 ± 1.06	0.85	-0.33 ± 1.27	0.84 ± 1.02

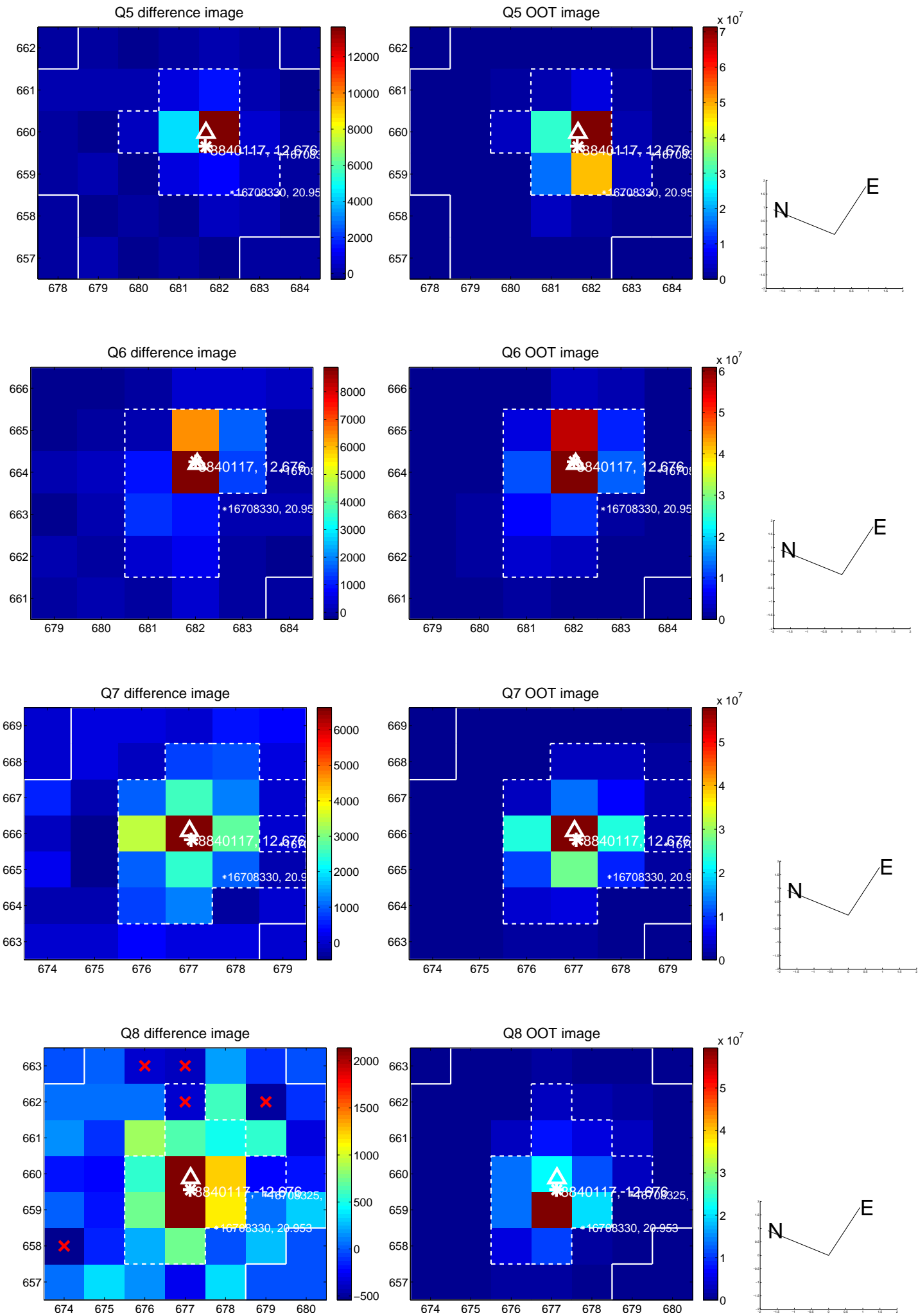


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

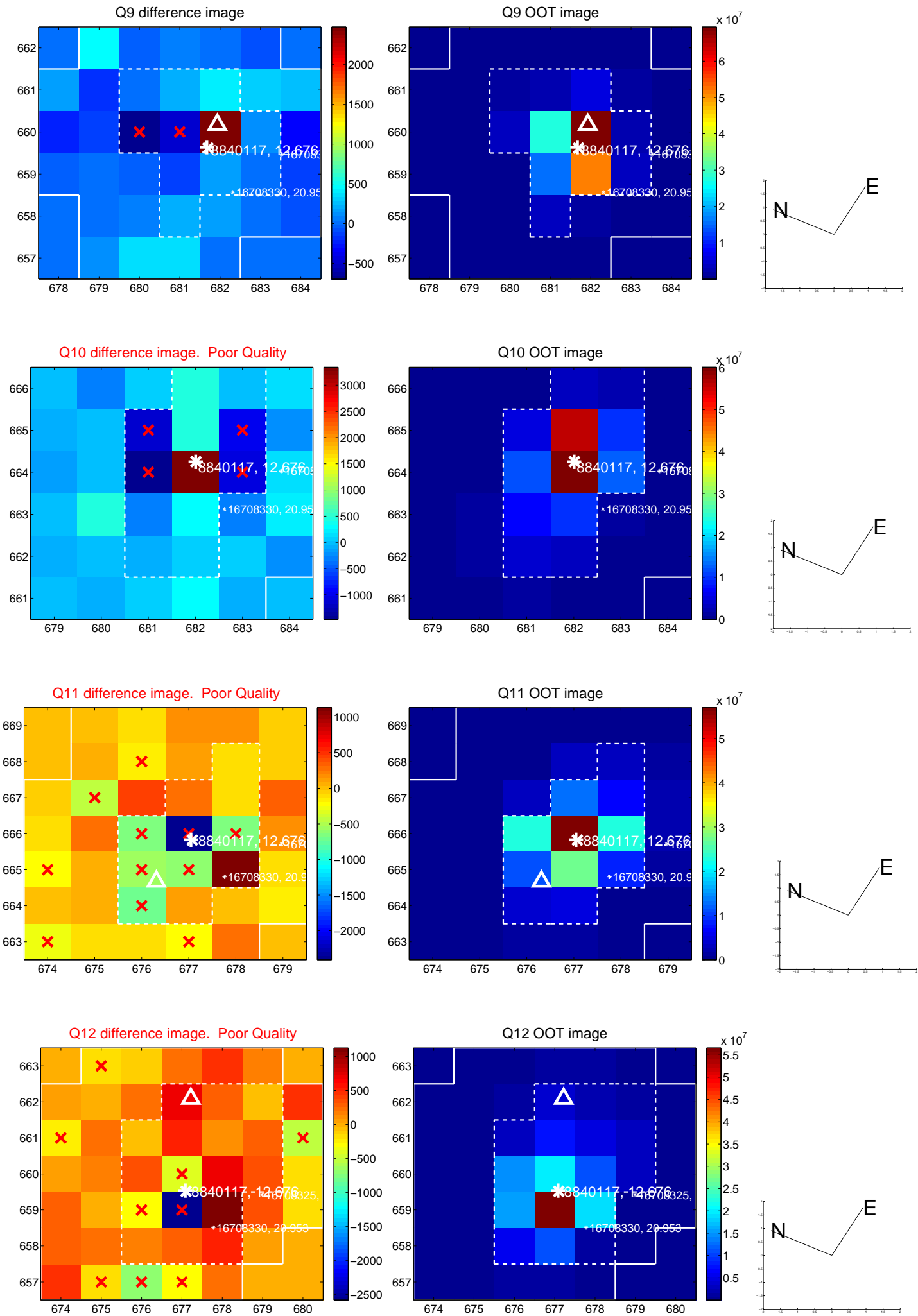
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



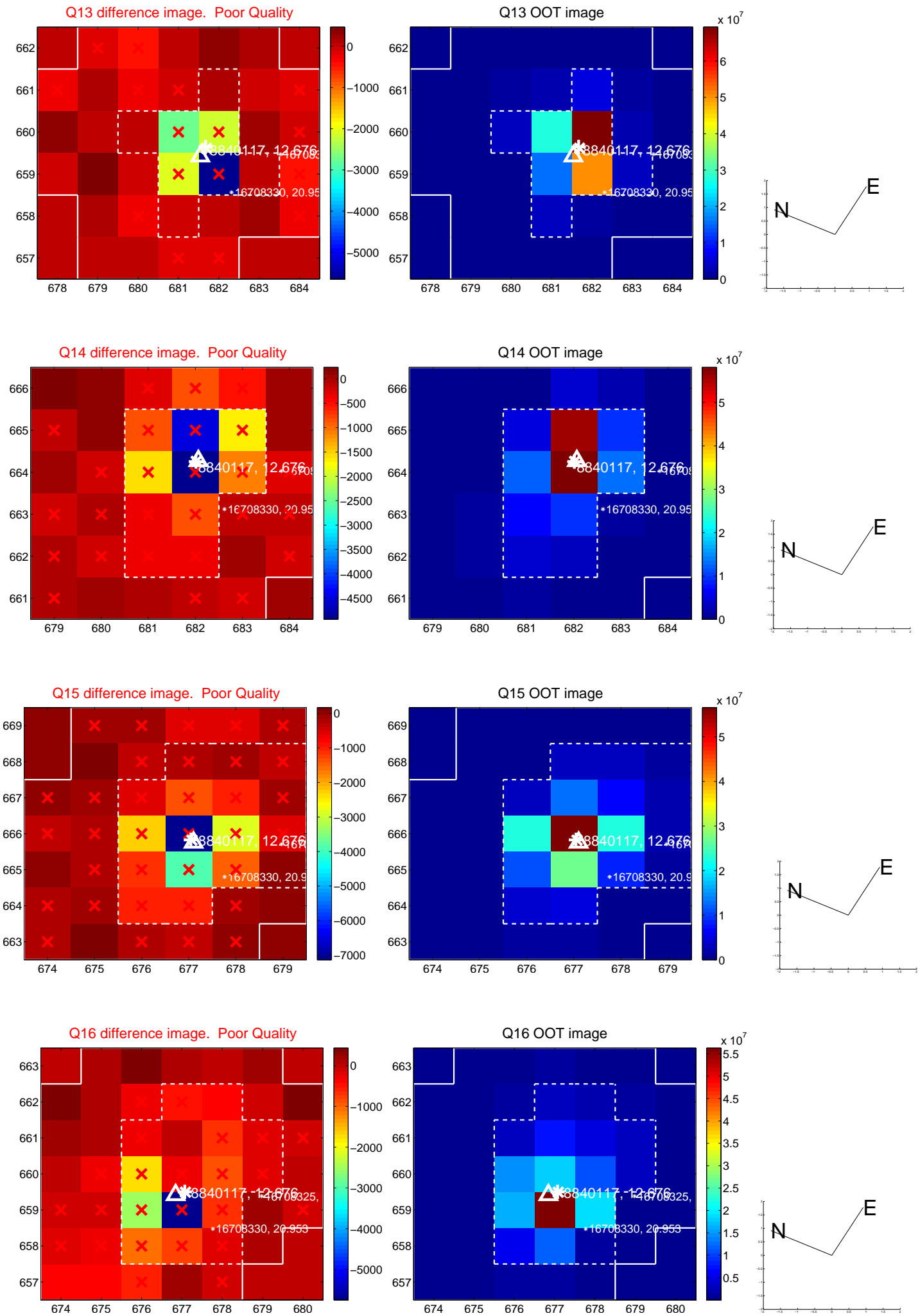
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



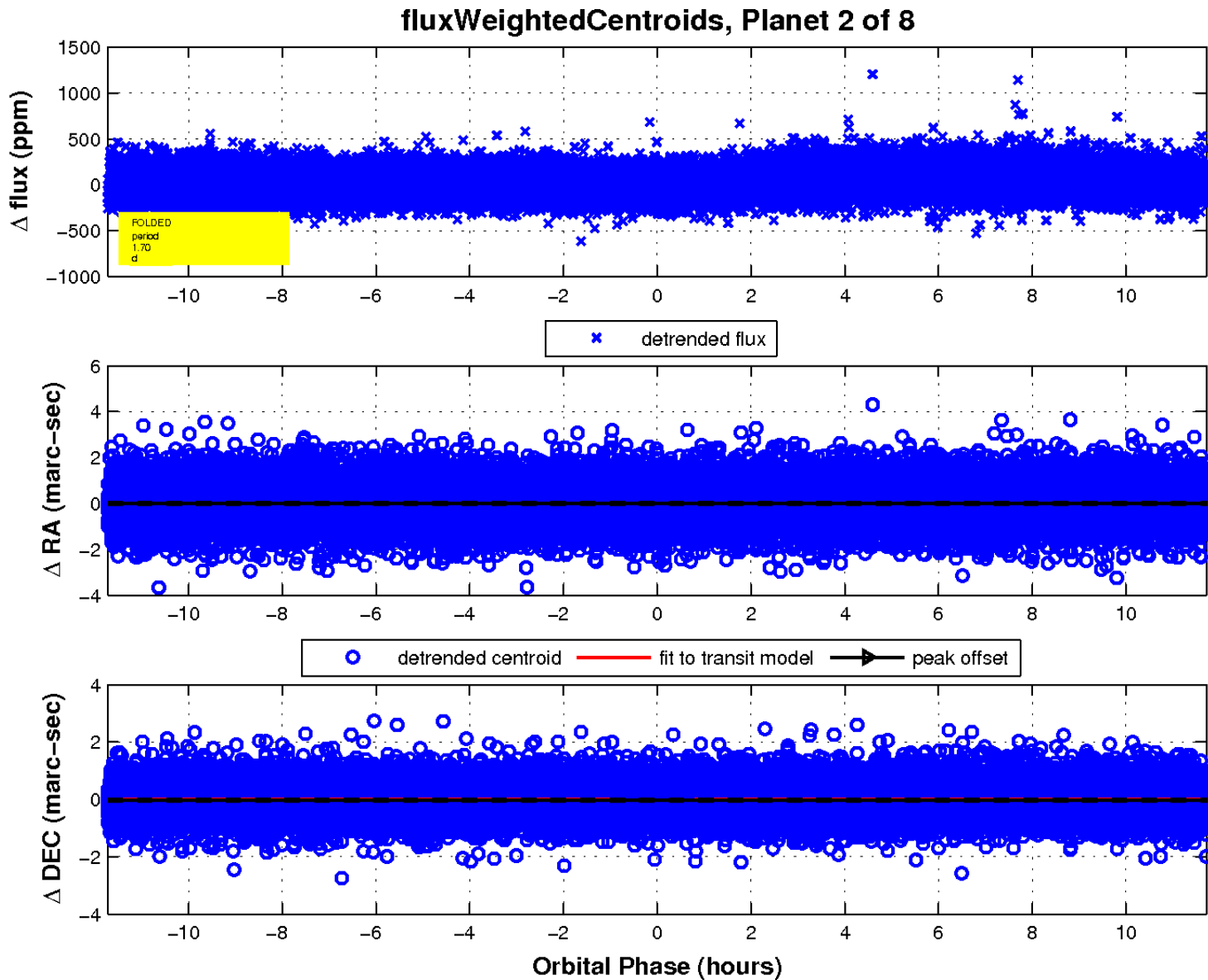
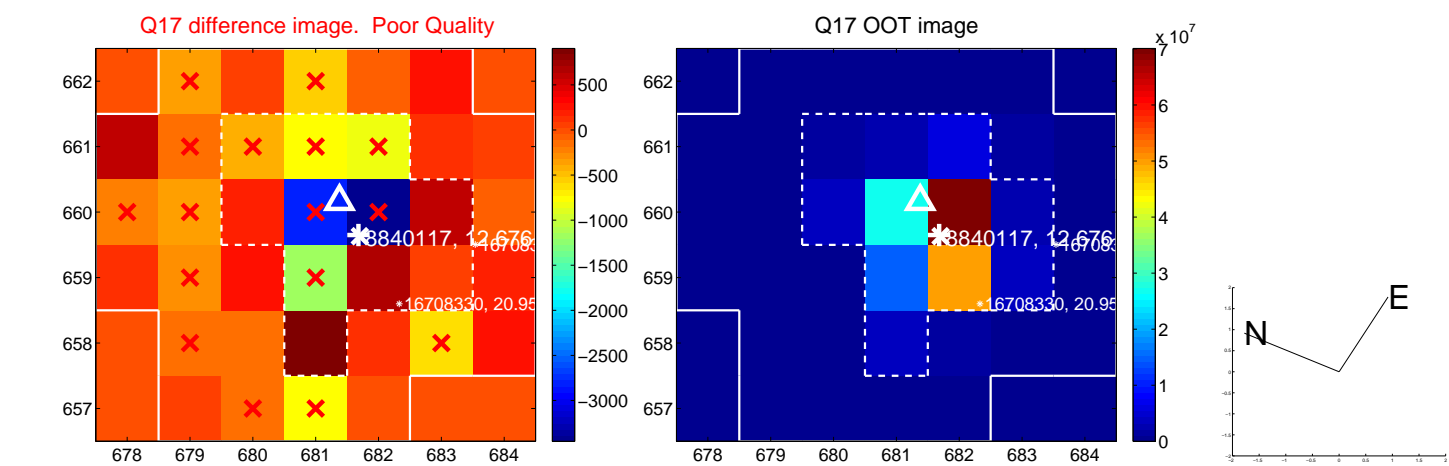
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

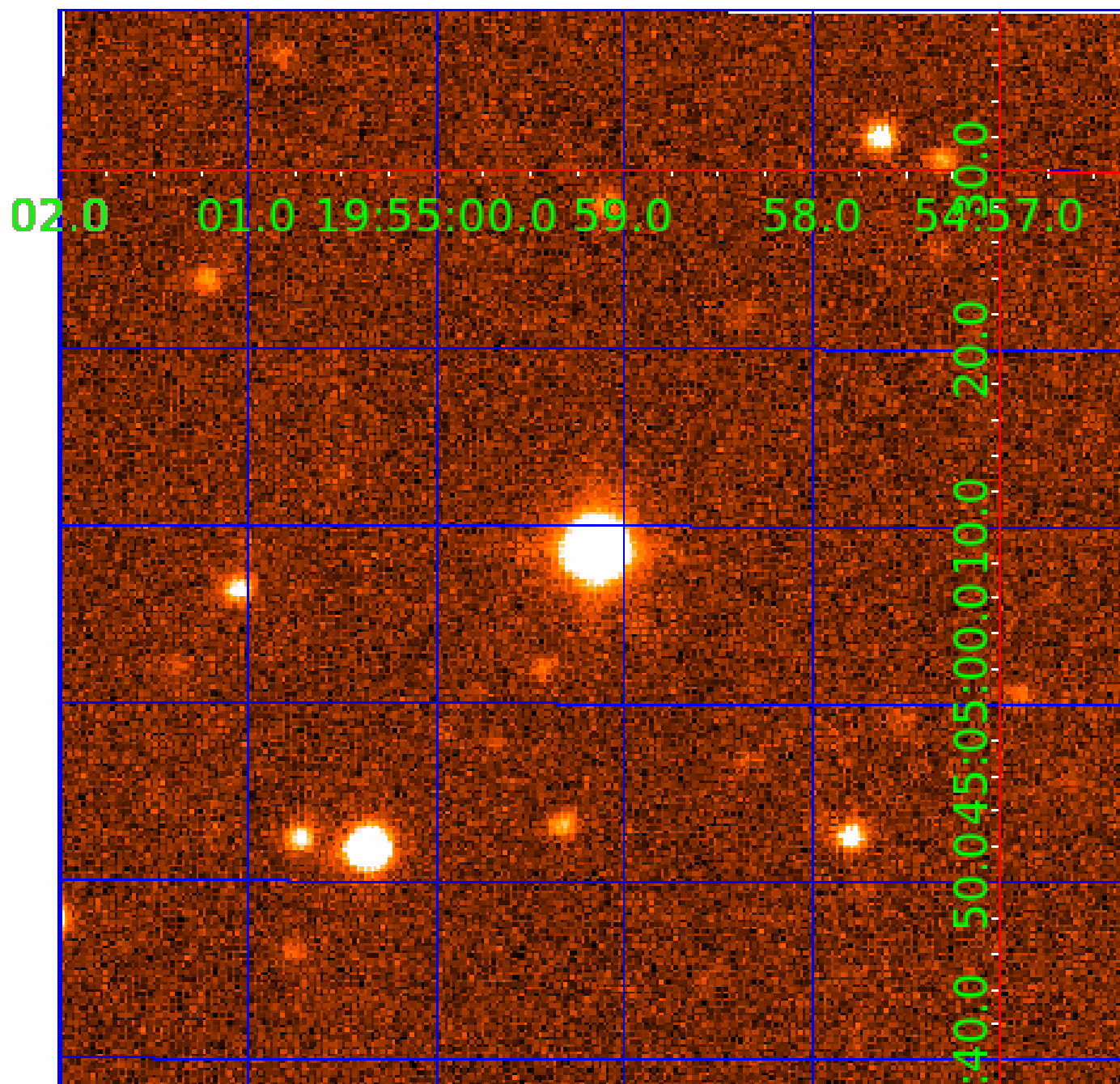


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008840117

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})
008840117-01	OBS	No	1.702570	132.507027	138.6	3.000	11.4	-1.0	2.41	6315	2.85	8608.47
008840117-02	OBS	No	1.702833	132.129333	25.7	3.908	8.9	9.2	2.41	6315	2.21	8606.69
008840117-03	OBS	No	2.069754	132.522608	8.2	11.983	8.6	4.6	2.41	6315	0.80	6635.00
008840117-06	OBS	No	19.303168	148.719464	79.1	6.605	9.0	8.5	2.41	6315	2.44	337.98
008840117-07	OBS	No	61.108707	163.245592	102.4	7.741	8.5	6.5	2.41	6315	2.85	72.71
008840117-08	OBS	No	76.794060	139.134112	209.7	2.000	7.1	-1.0	2.41	6315	3.51	53.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008840117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS
008840117-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
008840117-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008840117-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008840117-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008840117-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

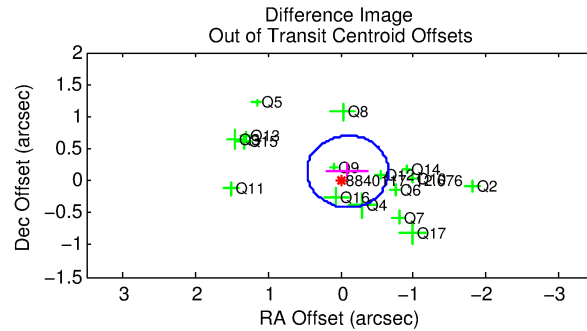
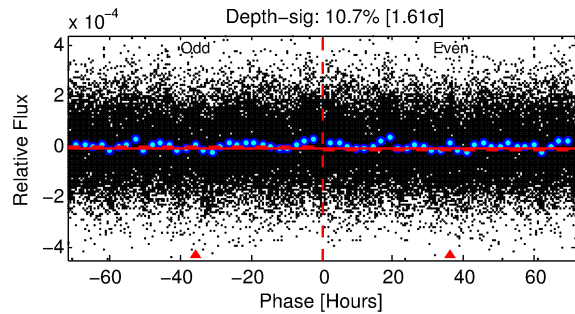
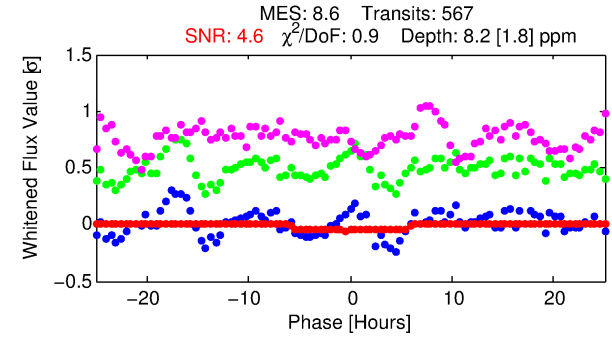
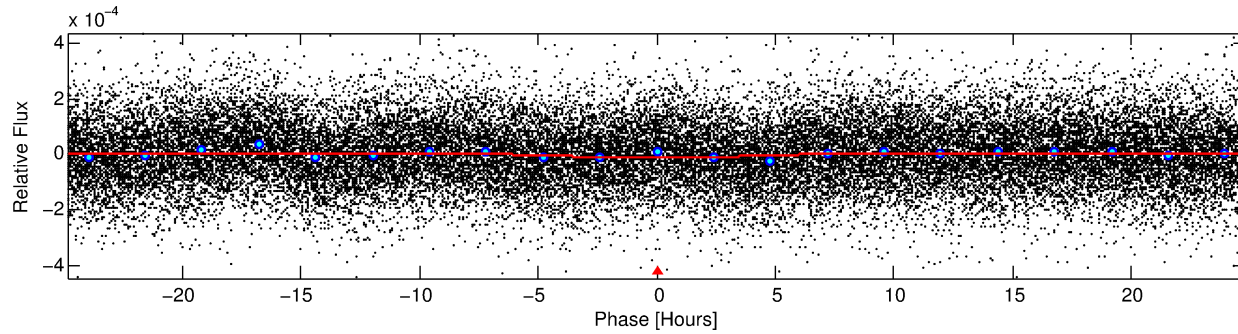
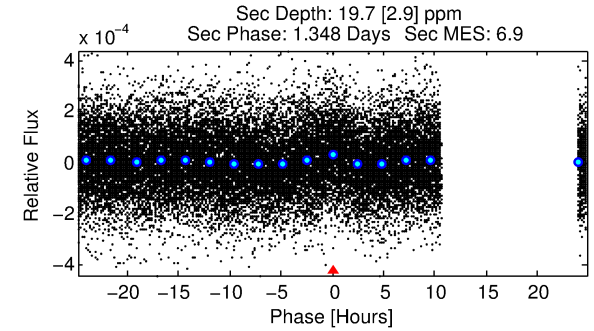
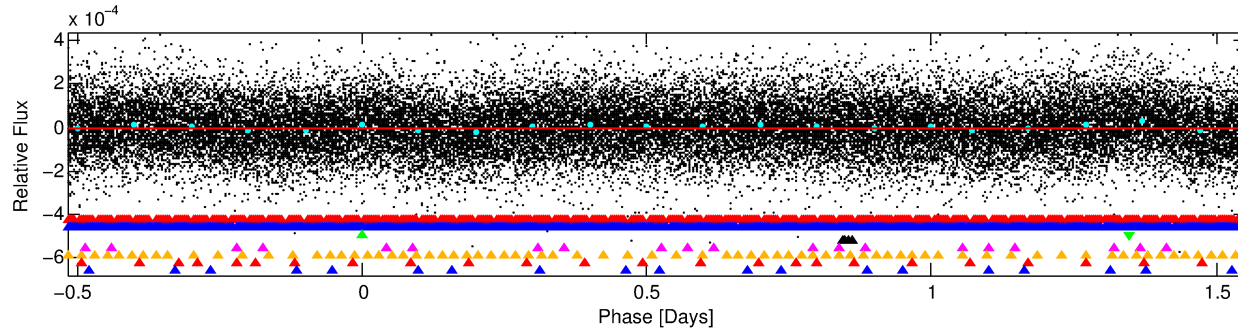
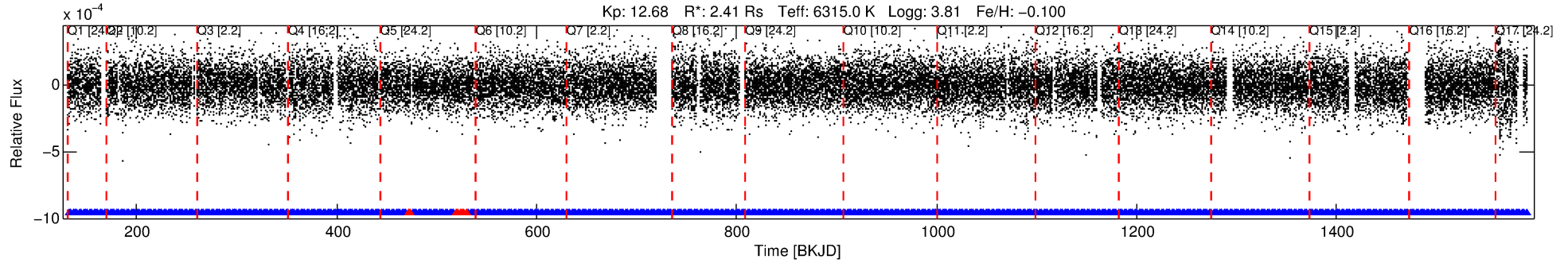
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008840117-03

No Significant Match Found

DV One-Page Summary

KIC: 8840117 Candidate: 3 of 8 Period: 2.070 d



DV Fit Results:

Period = 2.06975 [0.00007] d
Epoch = 132.5226 [0.0180] BKJD
Rp/R* = 0.0030 [0.0018]
a/R* = 1.12 [0.72]
b = 0.89 [0.77]
Seff = 6635.00 [3422.40]
Teq = 2301 [297] K
Rp = 0.80 [0.54] Re
a = 0.0353 [0.0113] AU
Ag = 21.13 [27.09] [0.74σ]
Teffp = 7629 [2259] K [2.34σ]

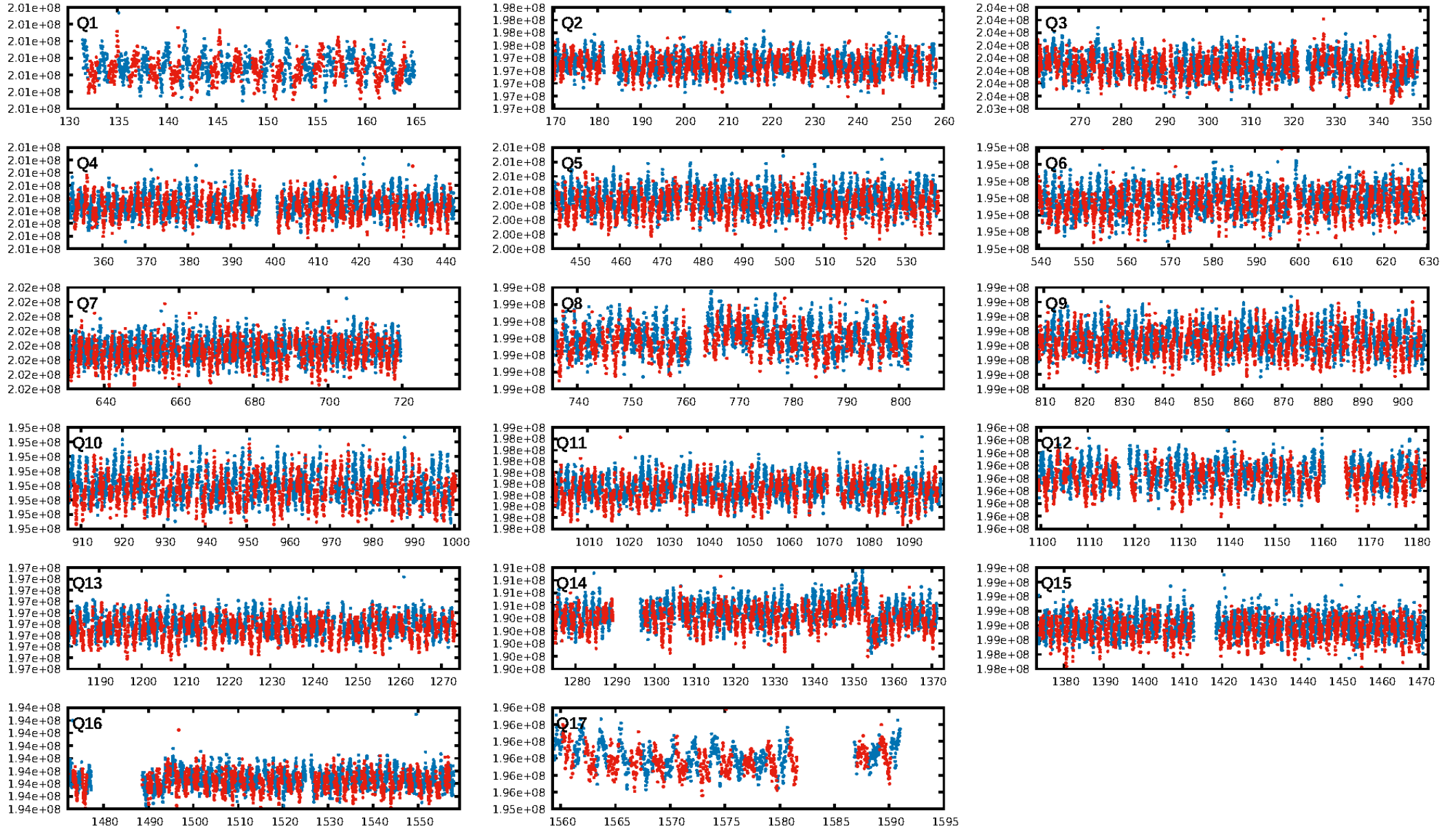
DV Diagnostic Results:

ShortPeriod-sig: 51.5% [0.70σ]
LongPeriod-sig: 100.0% [30.23σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [534/542]
GhostDiagnostic-chr: 0.3377
Centroid-sig: 4.3%
Centroid-so: 2.935 arcsec [1.44σ]
OotOffset-rm: 0.171 arcsec [0.91σ]
KicOffset-rm: 0.232 arcsec [1.43σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/17]

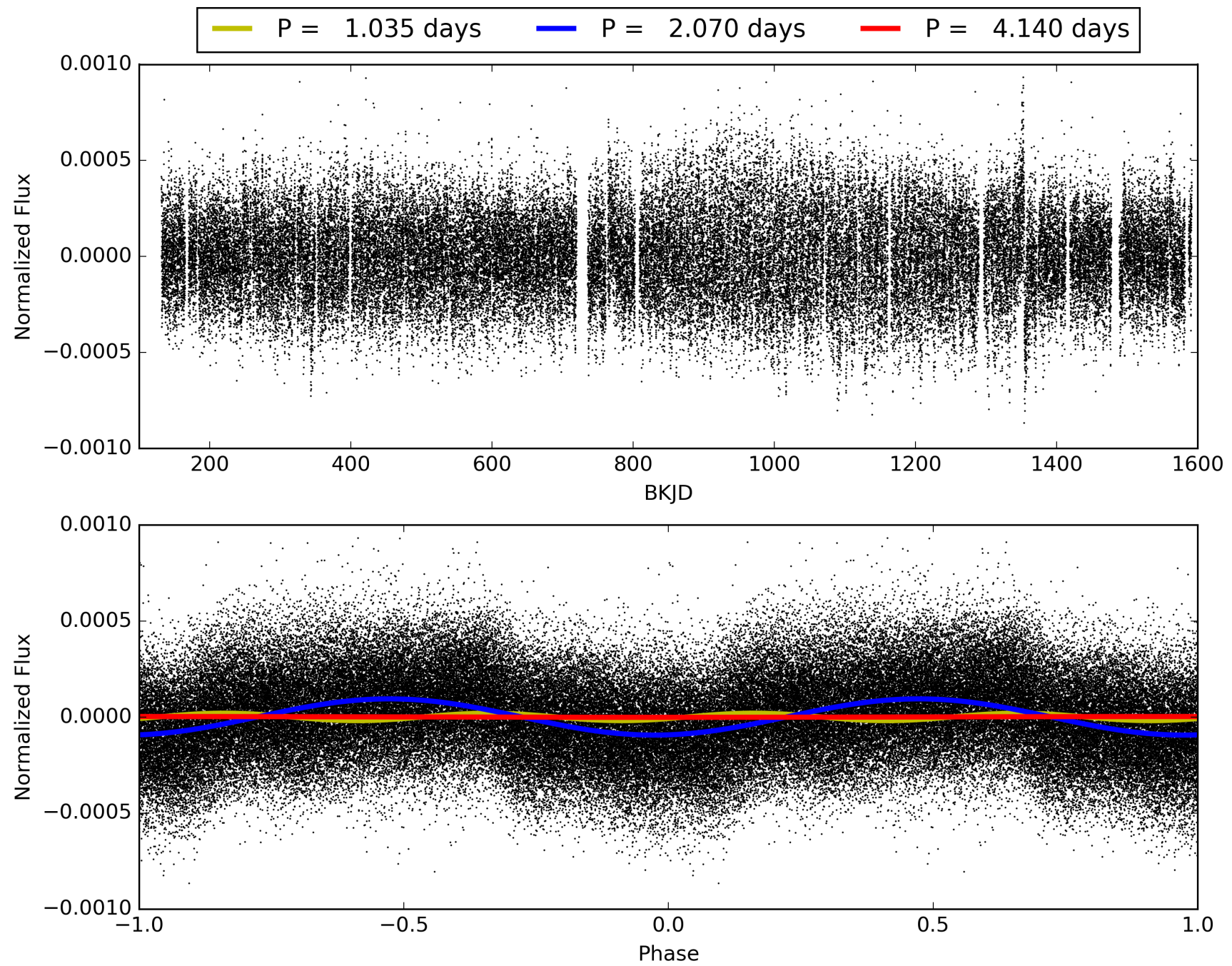
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:30:43 Z

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

TCE 008840117-03, PDC Light Curves

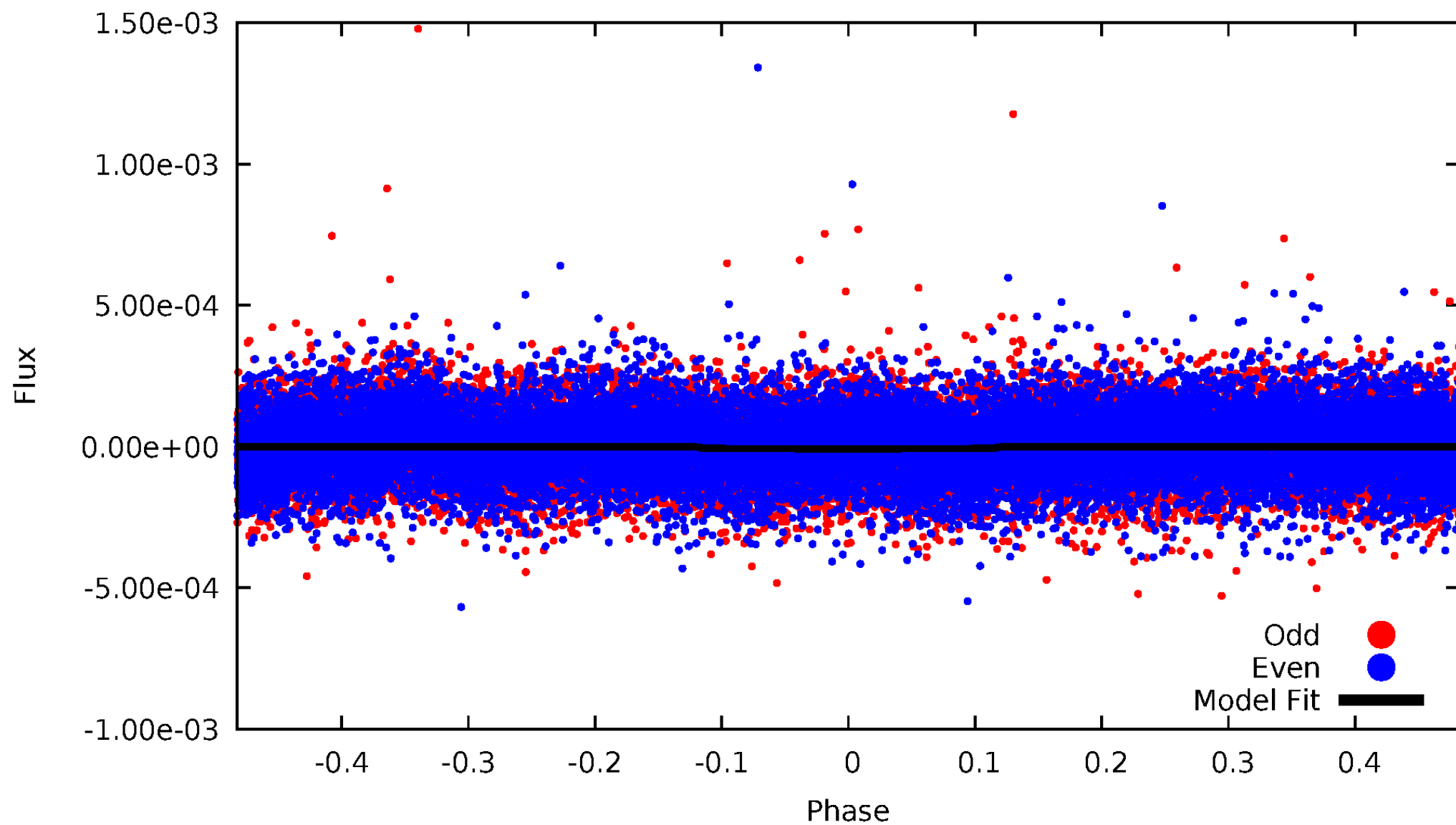


TCE 008840117-03



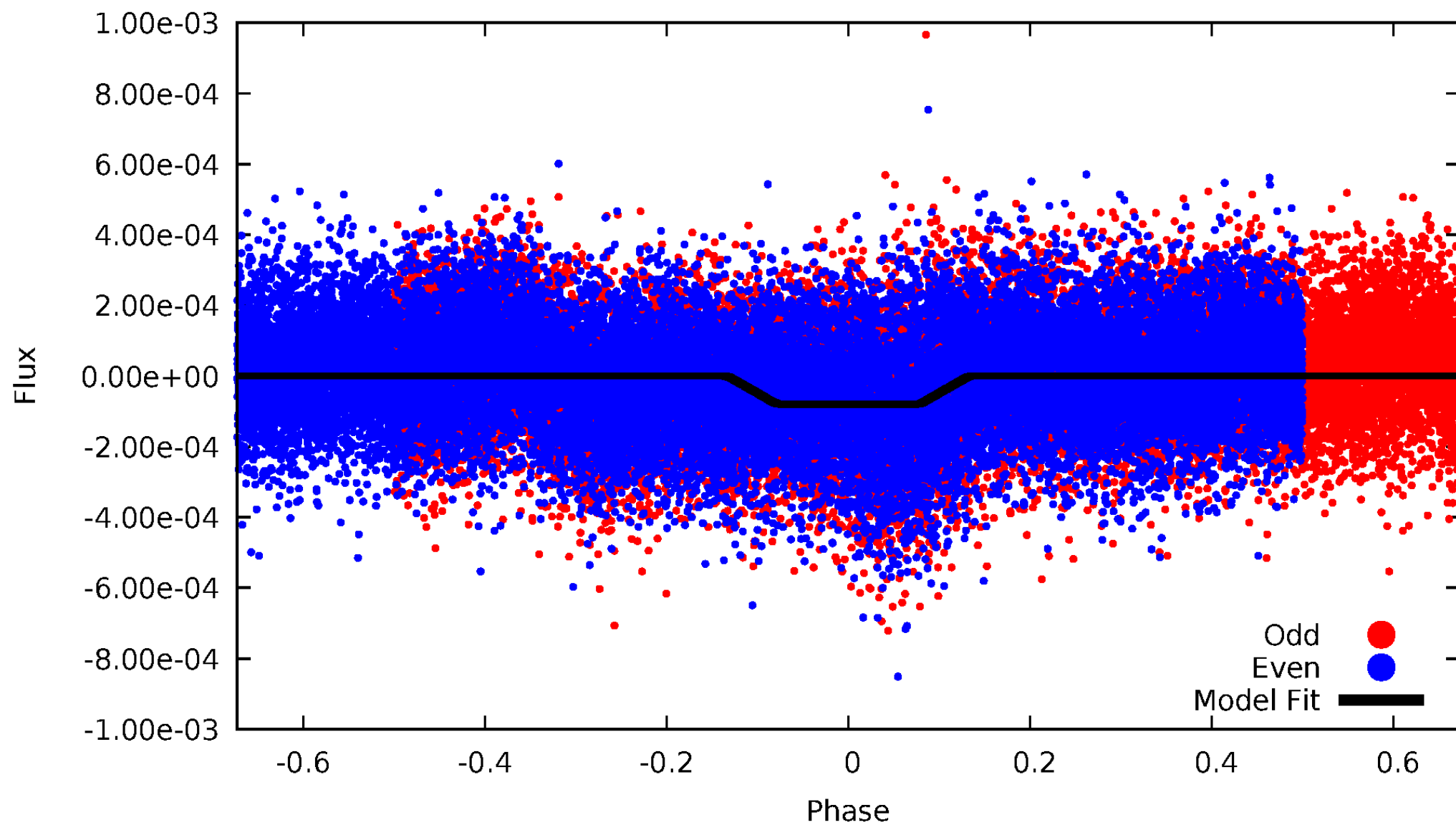
DV Odd/Even

TCE 008840117-03



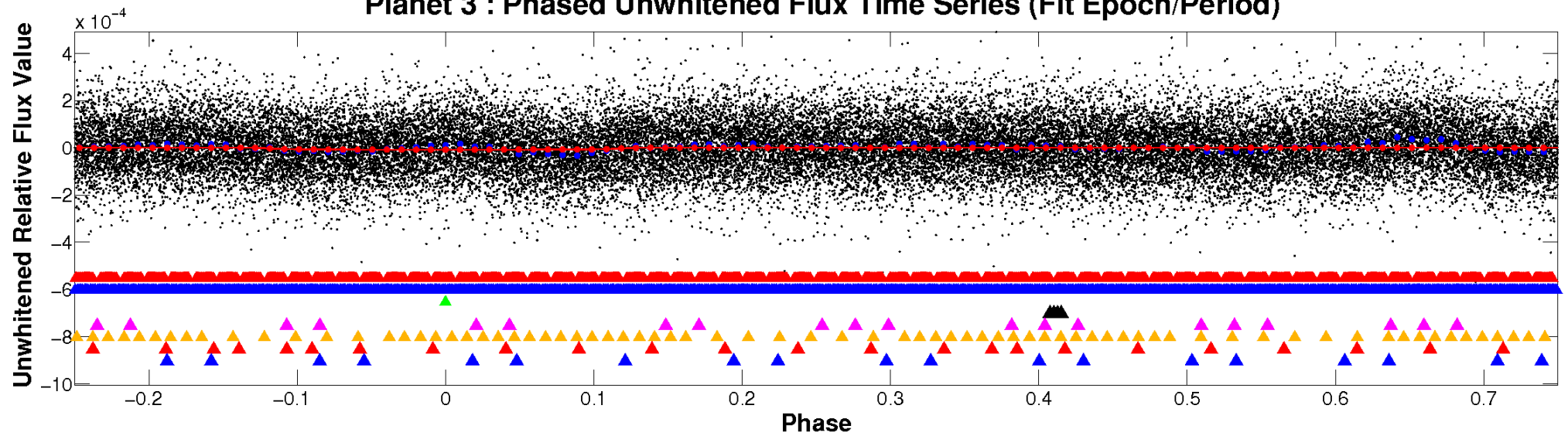
ALT Odd/Even

TCE 008840117-03

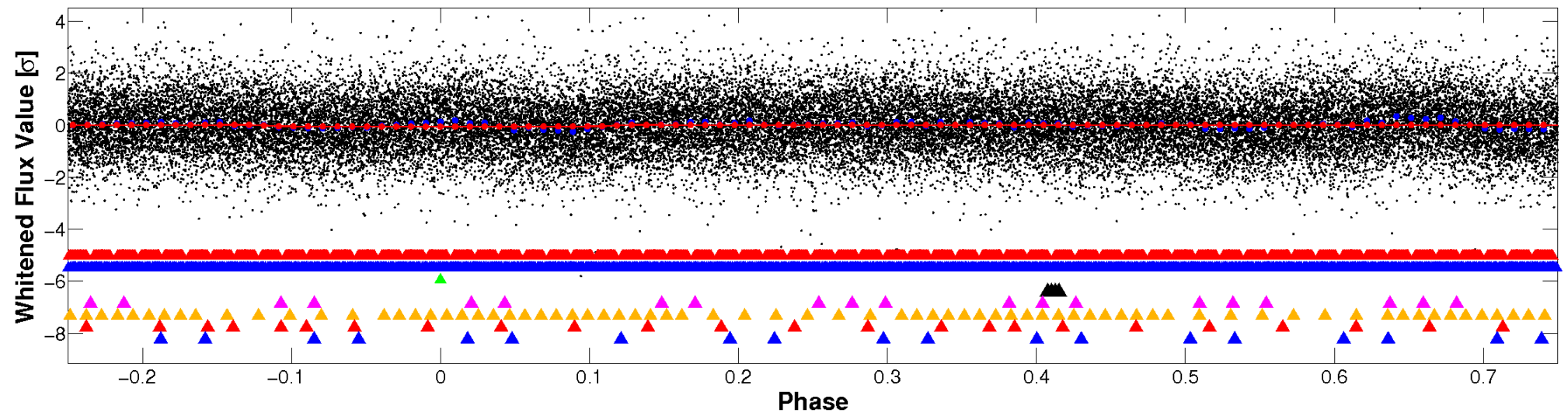


Non-Whitened Vs. Whitened Light Curve

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

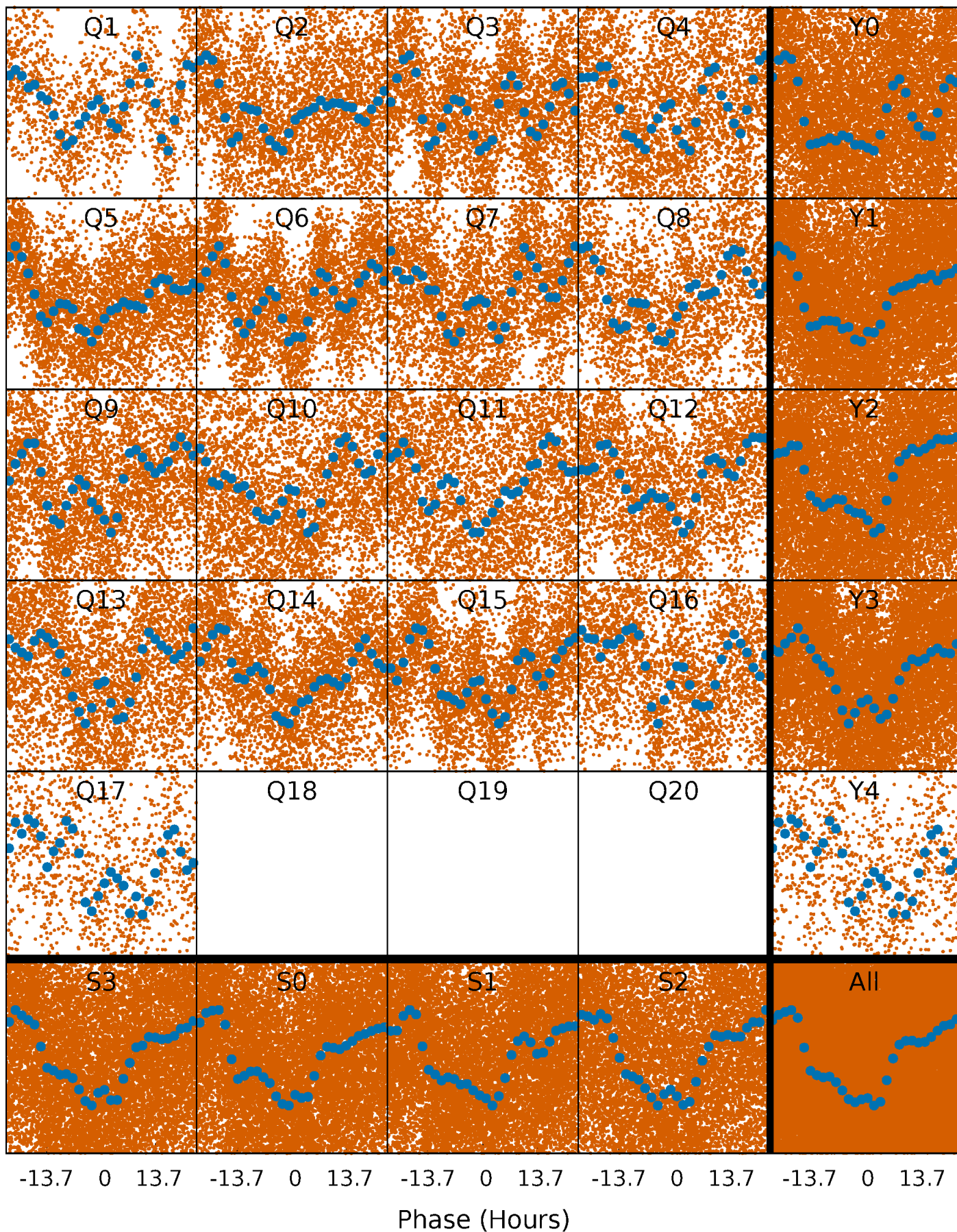


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



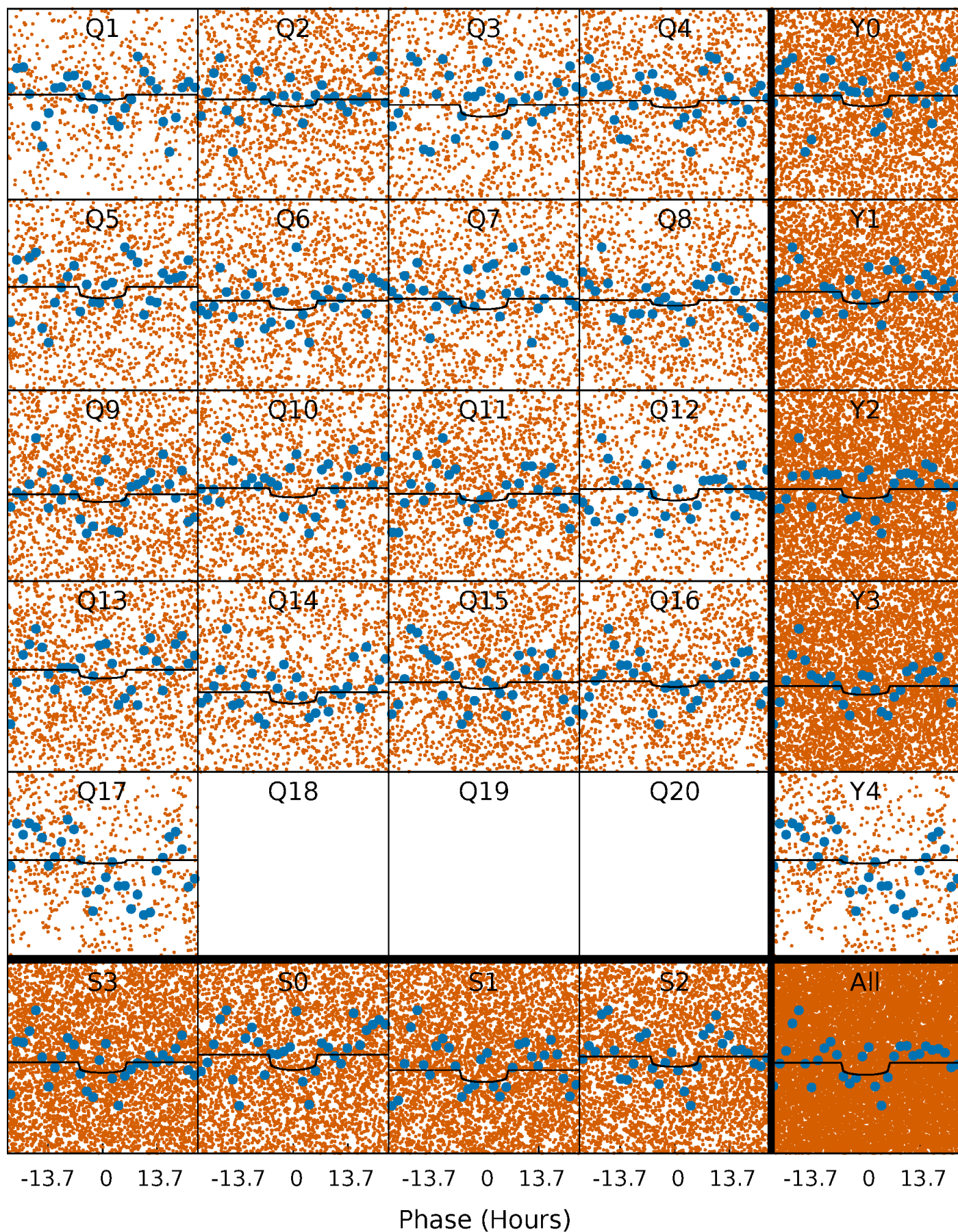
PDC Quarter-Phased Transit Curves

TCE 008840117-03 P= 2.069754 Days $T_0=132.522608$ (BKJD)



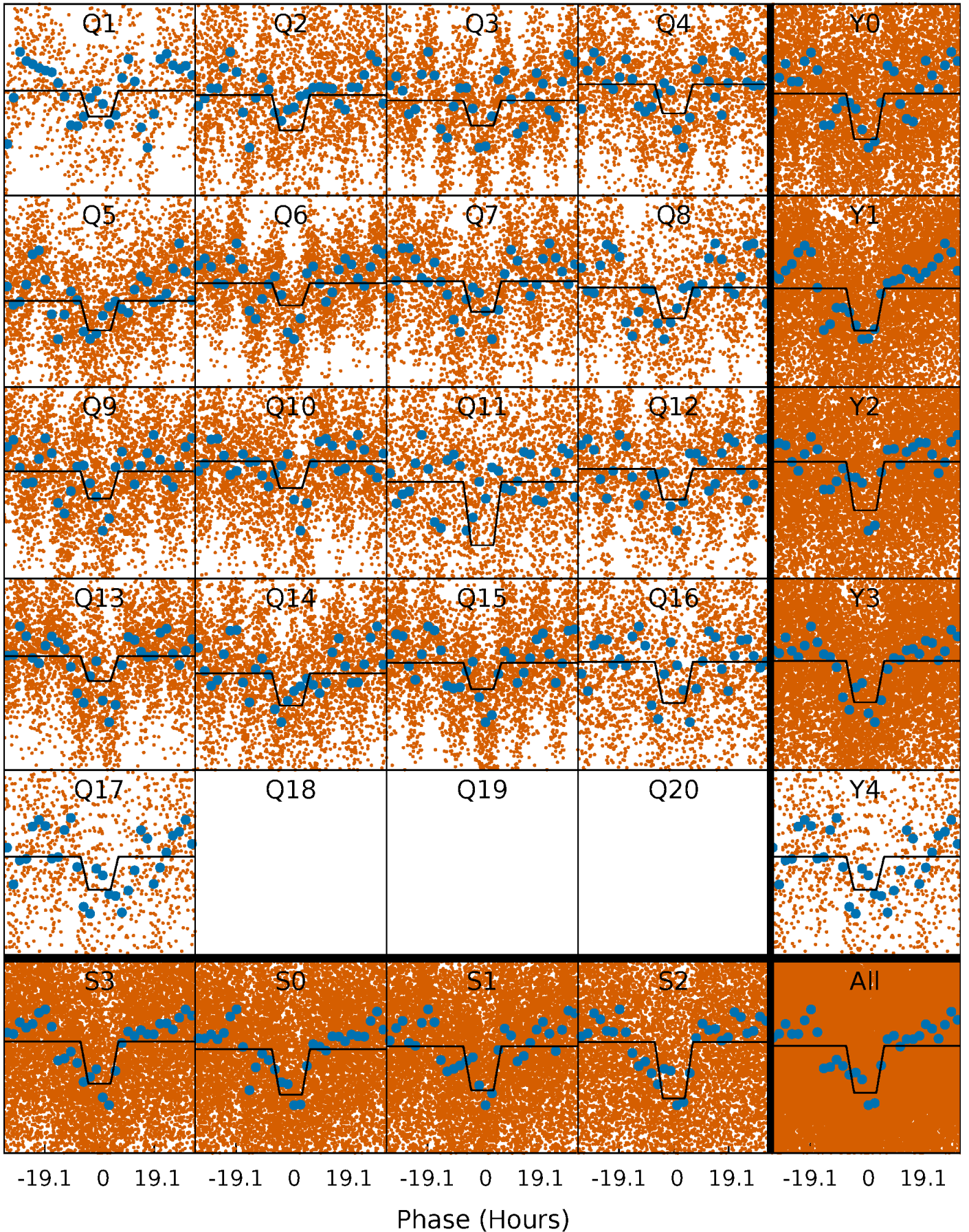
DV Quarter-Phased Transit Curves

TCE 008840117-03 $P = 2.069754$ Days $T_0 = 132.522608$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

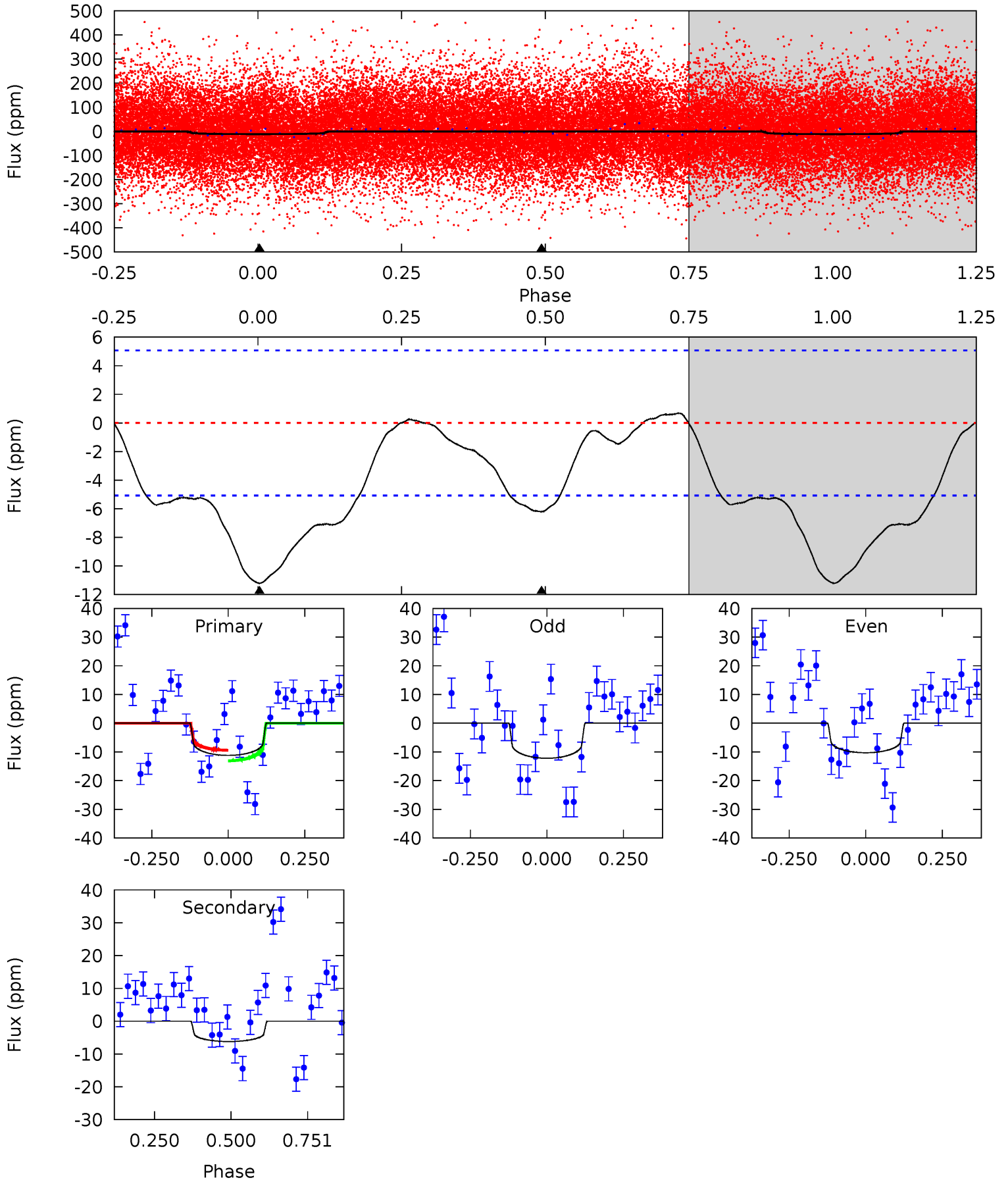
TCE 008840117-03 P= 2.069909 Days $T_0=132.513388$ (BKJD)



DV Model-Shift Uniqueness Test

008840117-03, P = 2.069754 Days, E = 130.452854 Days

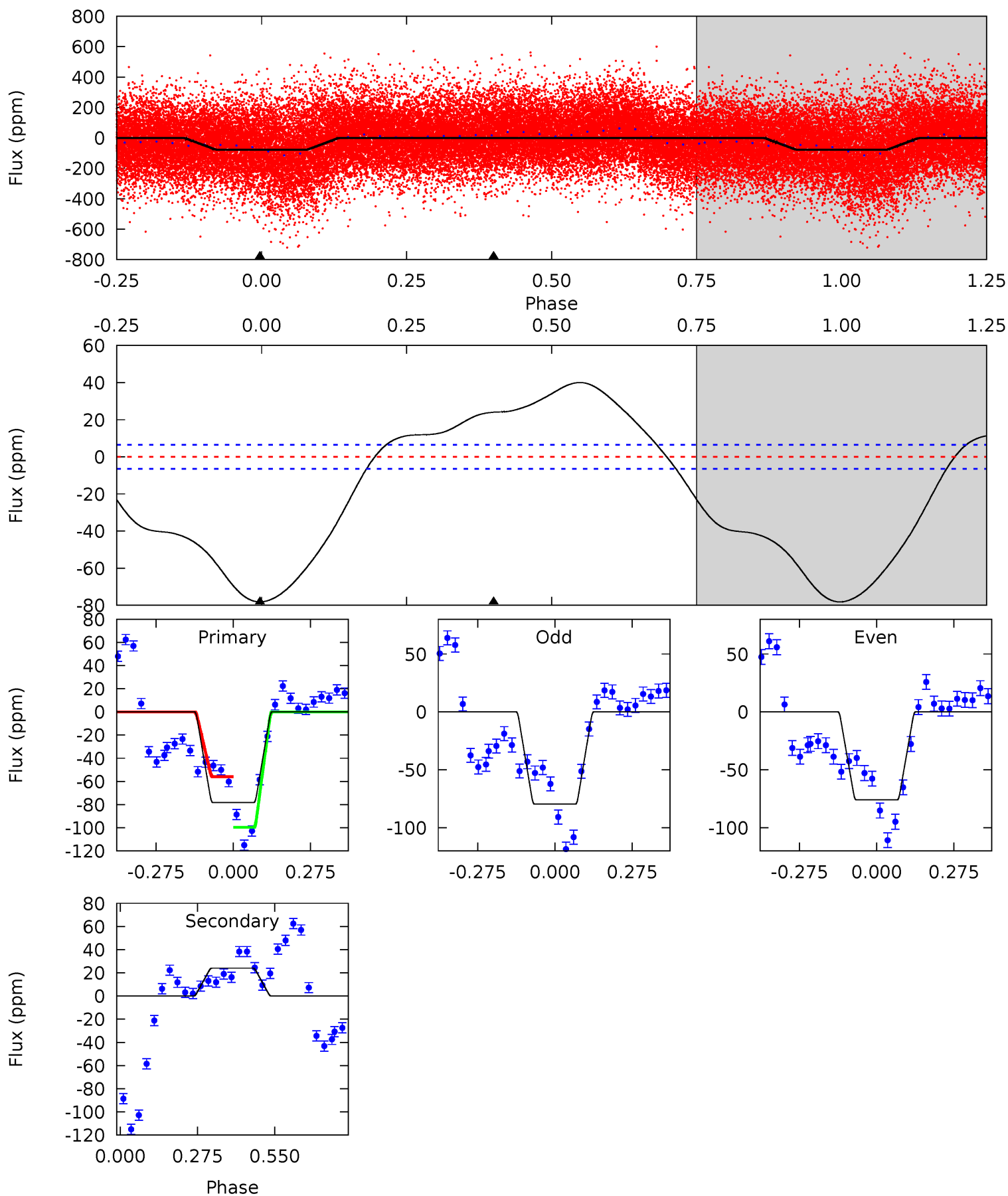
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.66	5.35	0	0	4.37	1.15	0.70	9.66	9.66	5.35	5.35	0.84	1.13	0.06	1.57



Alt Model-Shift Uniqueness Test

008840117-03, P = 2.069909 Days, E = 130.443479 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.8	-16.2	0	0	4.35	1.09	8.13	52.8	52.8	-16.2	-16.2	1.25	1.52	0.34	13.9



Stellar Parameters For KIC 008840117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6315^{+176}_{-176}	$3.811^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.410^{+0.447}_{-0.830}$	$1.371^{+0.239}_{-0.263}$	$0.138^{+0.270}_{-0.041}$
	+3%/-3%	+8%/-3%	+300%/-250%	+19%/-34%	+17%/-19%	+196%/-30%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008840117-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6 ± 1	$0.79^{+0.45}_{-0.45}$	3162^{+205}_{-261}	5601^{+3293}_{-1080}	$6.785^{+32.272}_{-4.094}$
Alt.	24 ± 1	$2.23^{+0.53}_{-0.60}$	3148^{+196}_{-266}	-4884^{+311}_{-520}	$-3.377^{+1.161}_{-2.541}$

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

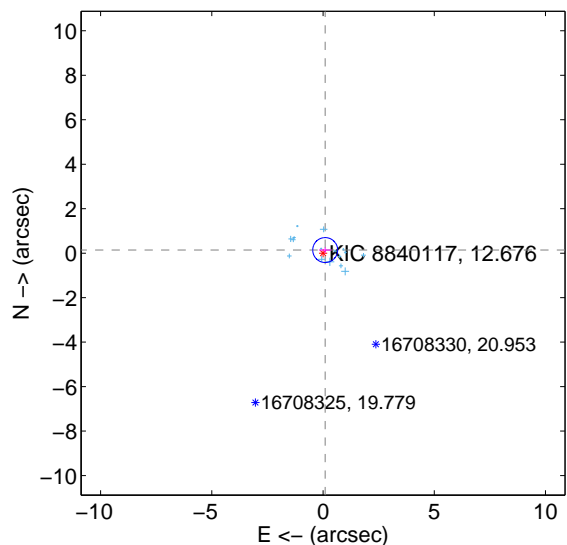
Supplemental centroid analysis for 008840117-03. Kepler magnitude: 12.68. Transit SNR 4.65

There are 16 quarters with good PRF difference image offsets

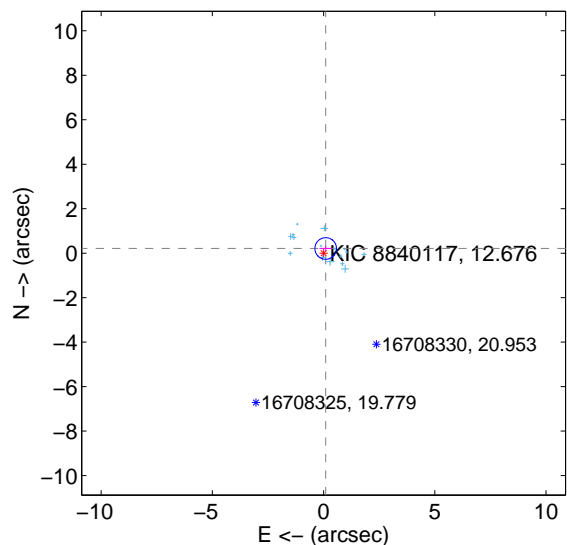
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.171 ± 0.187	0.91	-0.097 ± 0.278	0.140 ± 0.120
PRF-fit source offset from KIC position	0.232 ± 0.162	1.43	-0.095 ± 0.284	0.211 ± 0.123
photometric centroid source offset	2.93 ± 2.04	1.44	-2.30 ± 2.20	-1.83 ± 1.77

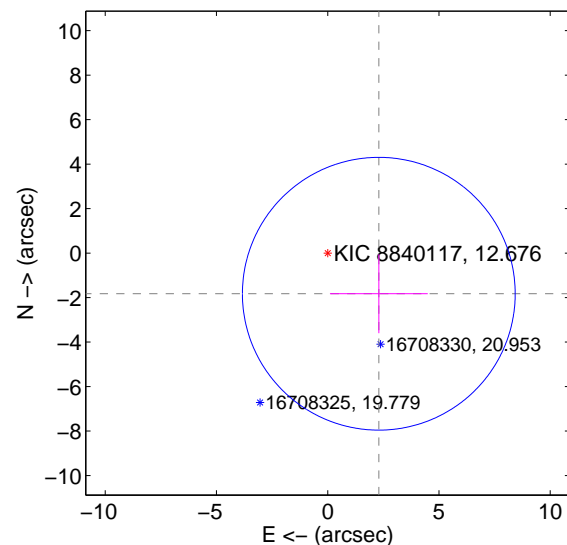
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

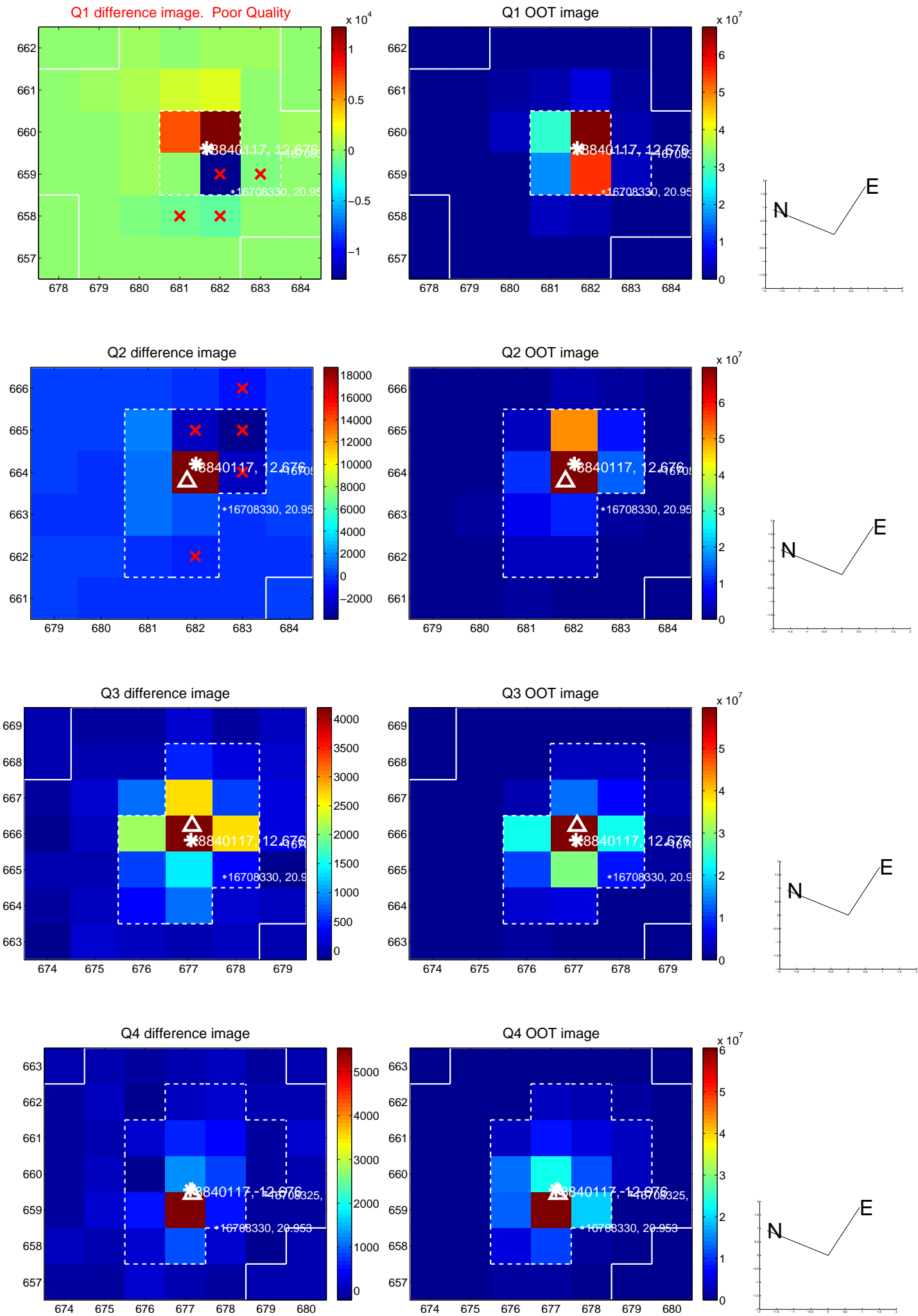


offset from photometric centroids

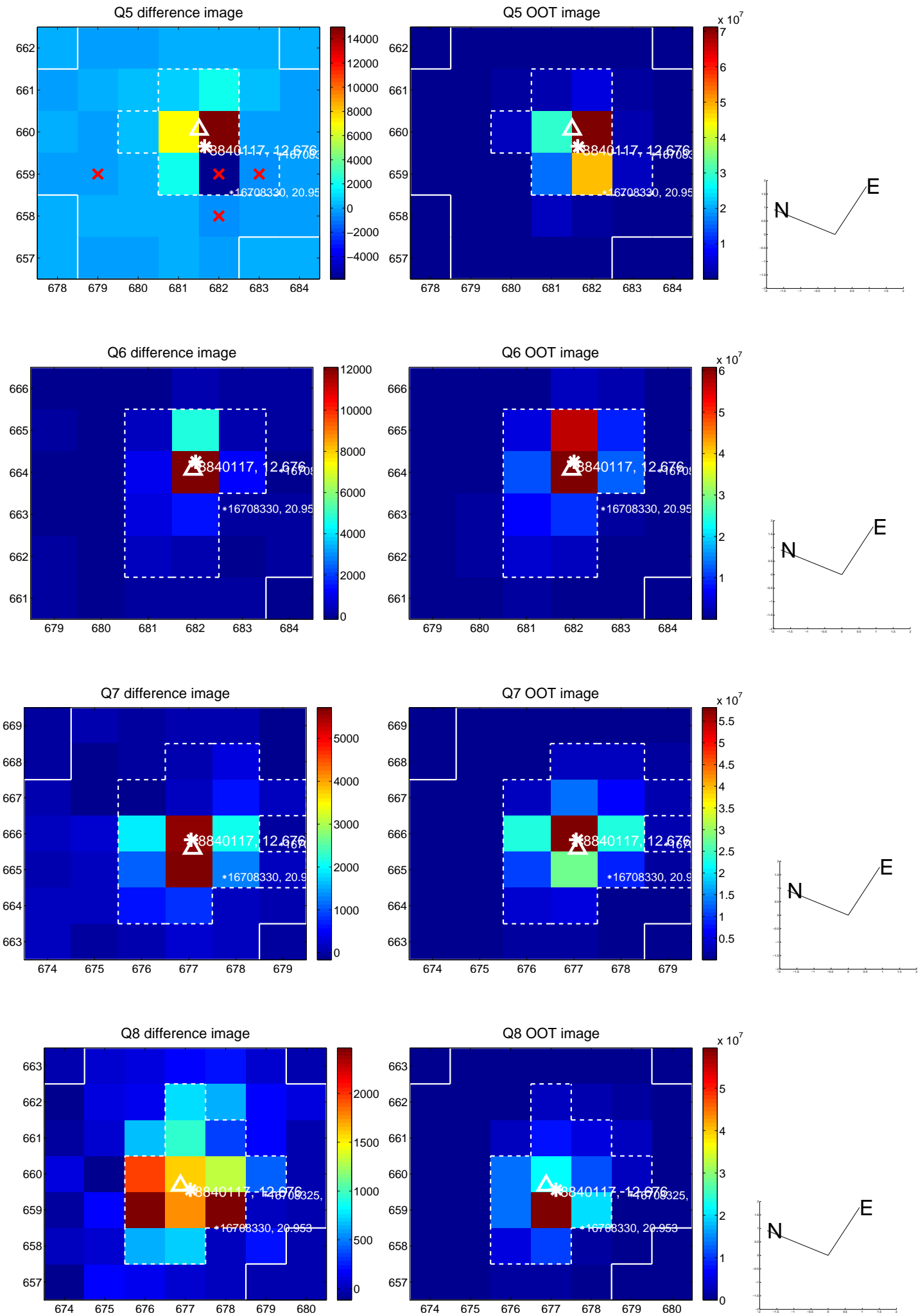


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

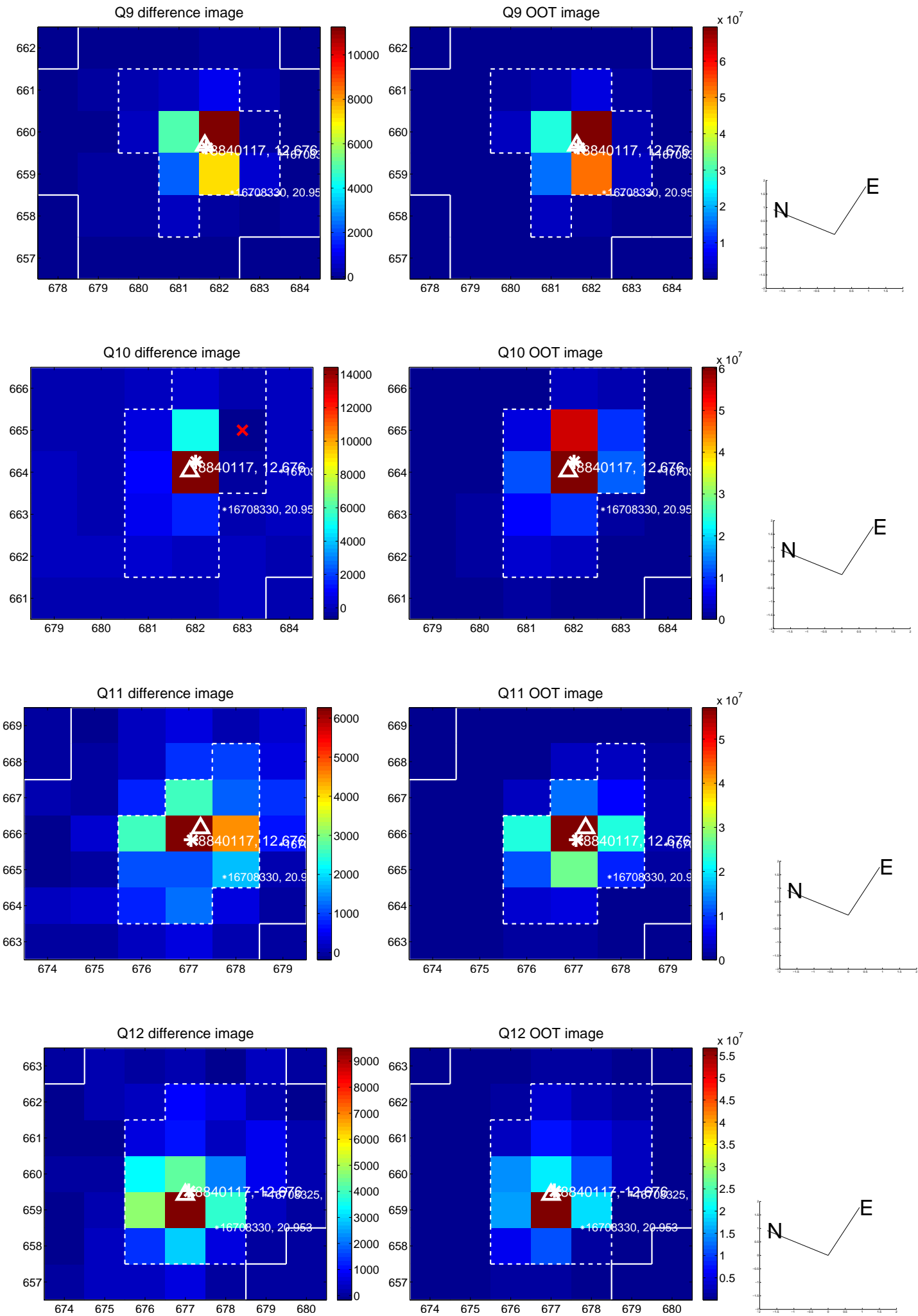
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



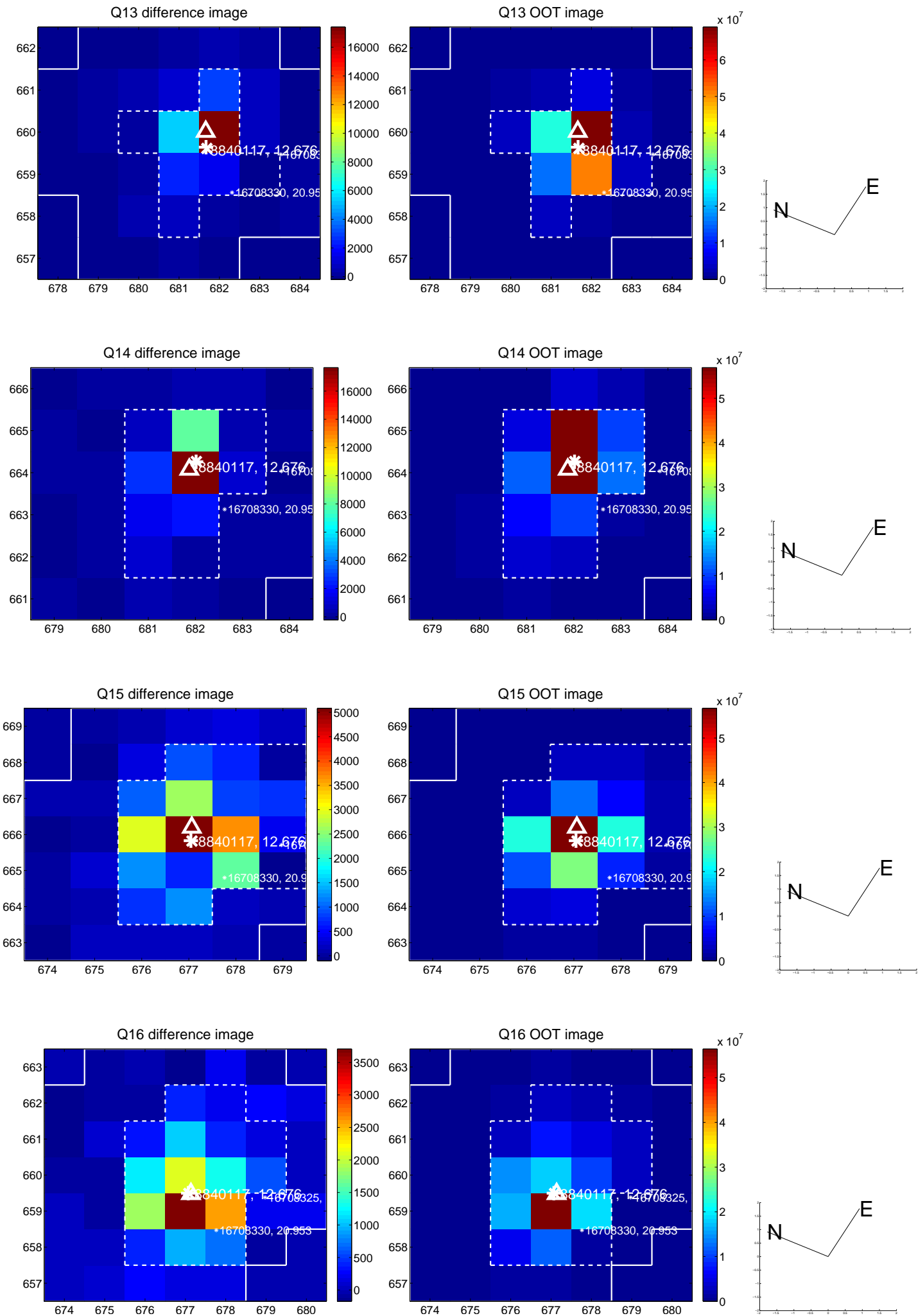
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



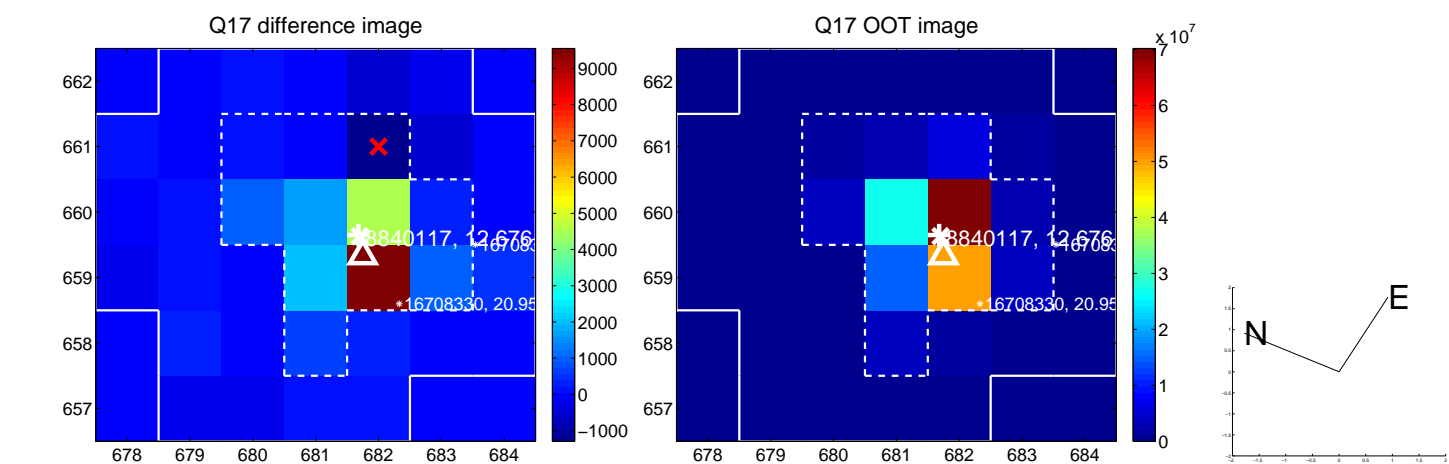
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



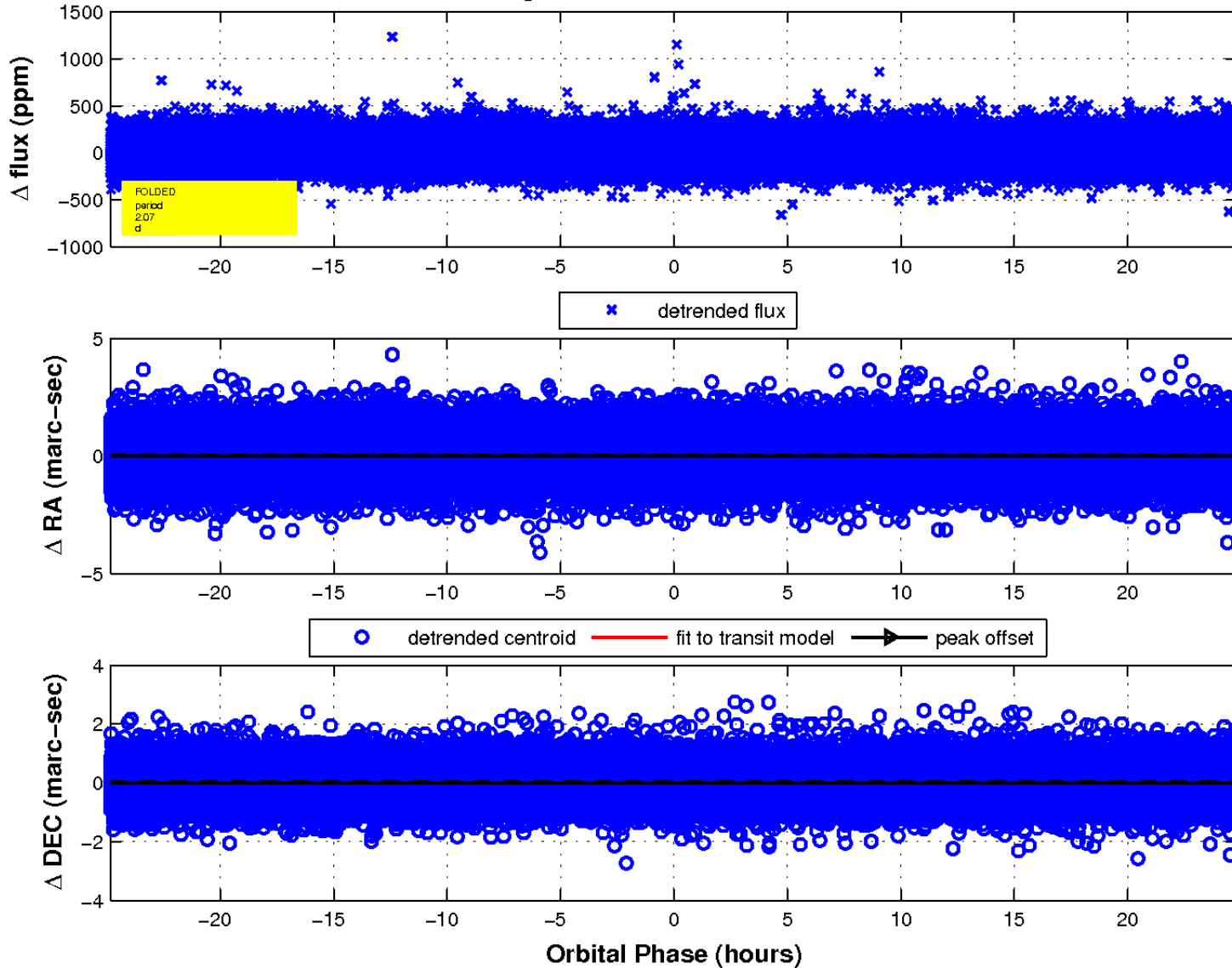
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

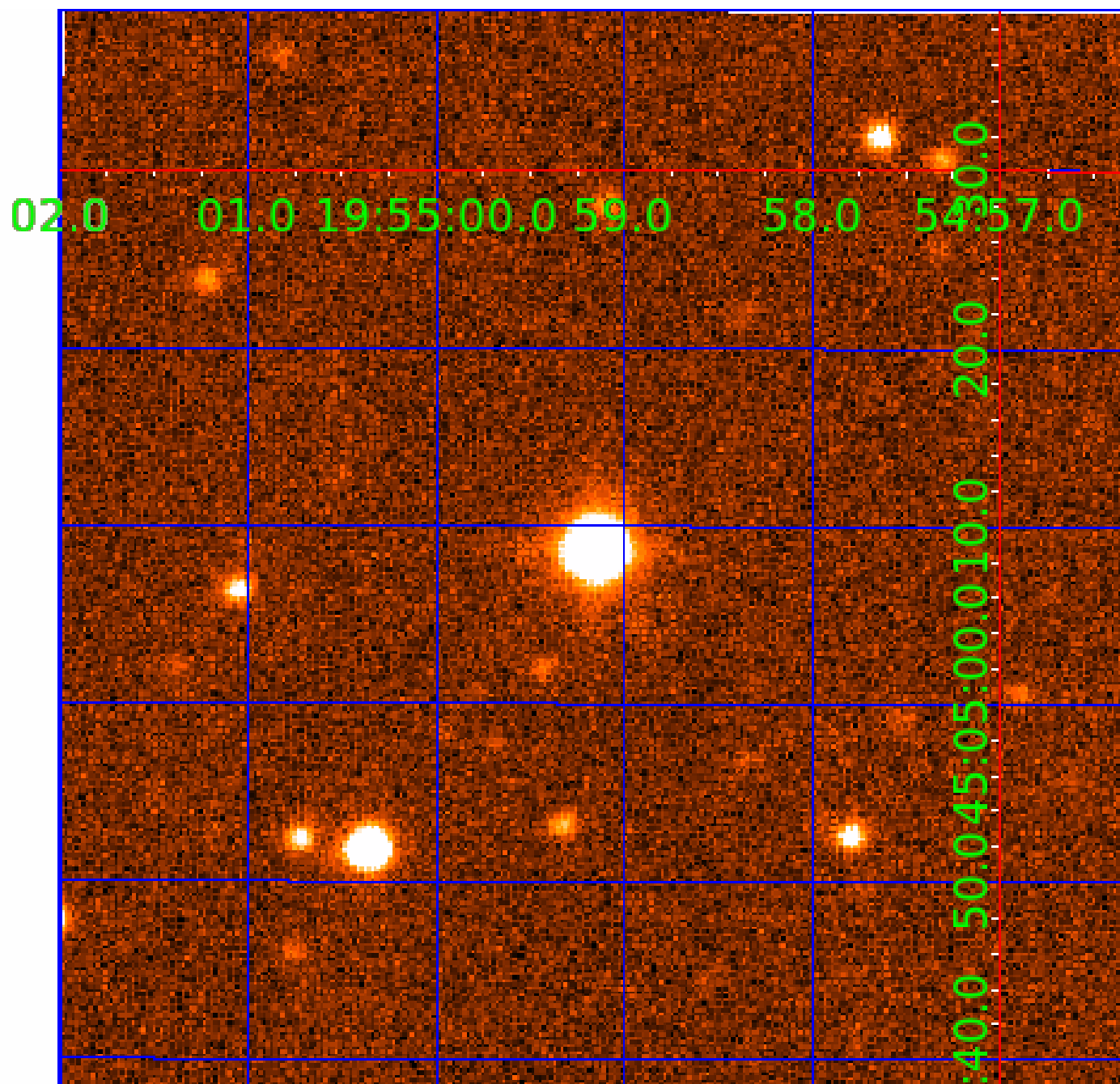


fluxWeightedCentroids, Planet 3 of 8



UKIRT Image

Declination



KIC 008840117

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})
008840117-01	OBS	No	1.702570	132.507027	138.6	3.000	11.4	-1.0	2.41	6315	2.85	8608.47
008840117-02	OBS	No	1.702833	132.129333	25.7	3.908	8.9	9.2	2.41	6315	2.21	8606.69
008840117-03	OBS	No	2.069754	132.522608	8.2	11.983	8.6	4.6	2.41	6315	0.80	6635.00
008840117-06	OBS	No	19.303168	148.719464	79.1	6.605	9.0	8.5	2.41	6315	2.44	337.98
008840117-07	OBS	No	61.108707	163.245592	102.4	7.741	8.5	6.5	2.41	6315	2.85	72.71
008840117-08	OBS	No	76.794060	139.134112	209.7	2.000	7.1	-1.0	2.41	6315	3.51	53.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008840117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS
008840117-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
008840117-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008840117-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008840117-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008840117-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

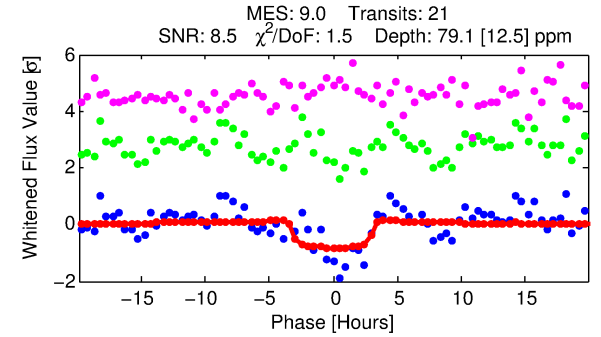
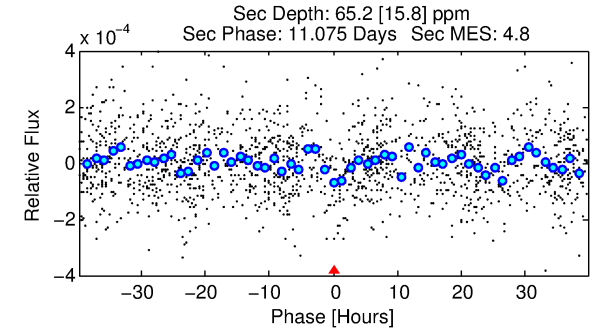
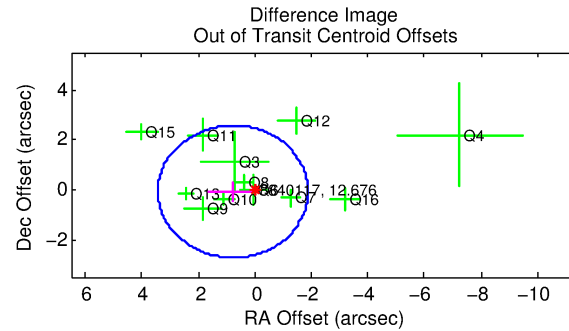
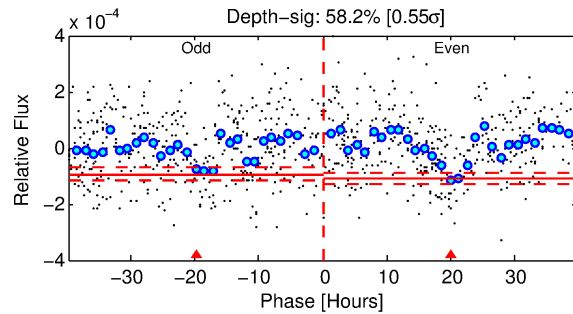
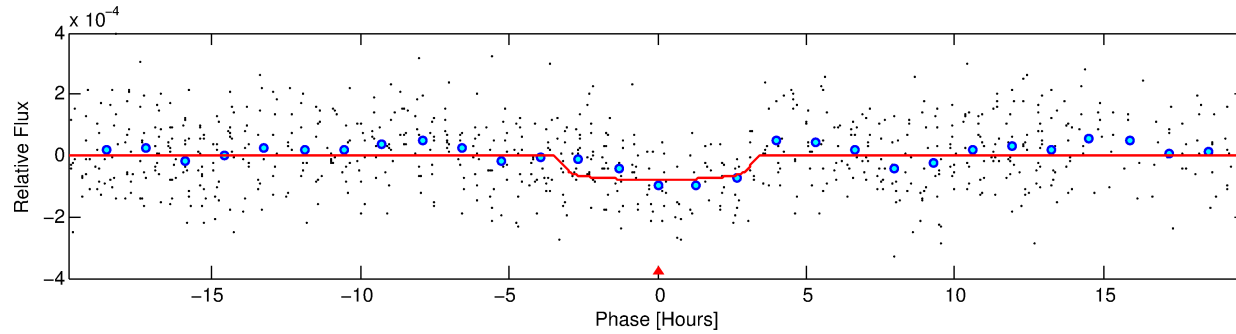
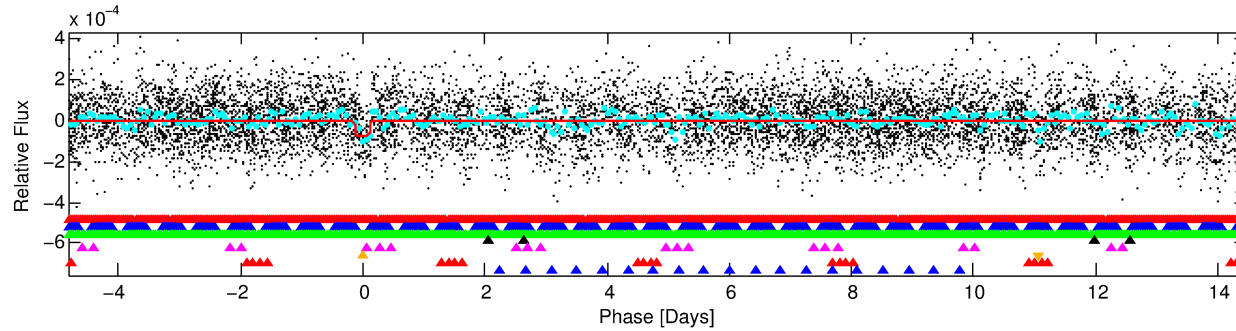
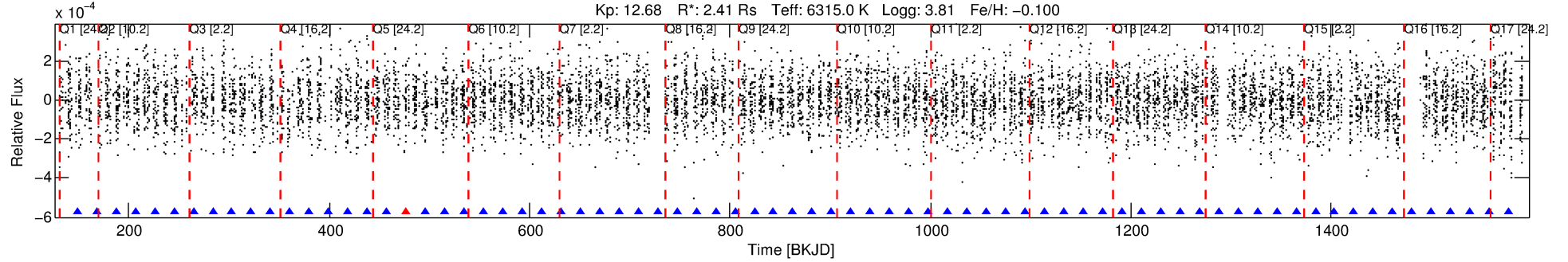
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008840117-06

No Significant Match Found

DV One-Page Summary

KIC: 8840117 Candidate: 6 of 8 Period: 19.303 d



DV Fit Results:

Period = 19.30317 [0.00059] d
Epoch = 148.7195 [0.0152] BKJD
Rp/R* = 0.0093 [0.0080]
a/R* = 11.86 [56.12]
b = 0.86 [1.47]
Seff = 337.98 [174.33]
Teq = 1093 [141] K
Rp = 2.44 [2.26] Re
a = 0.1565 [0.0502] AU
Ag = 147.74 [267.40] [0.55 σ]
Teffp = 5893 [2567] K [1.87 σ]

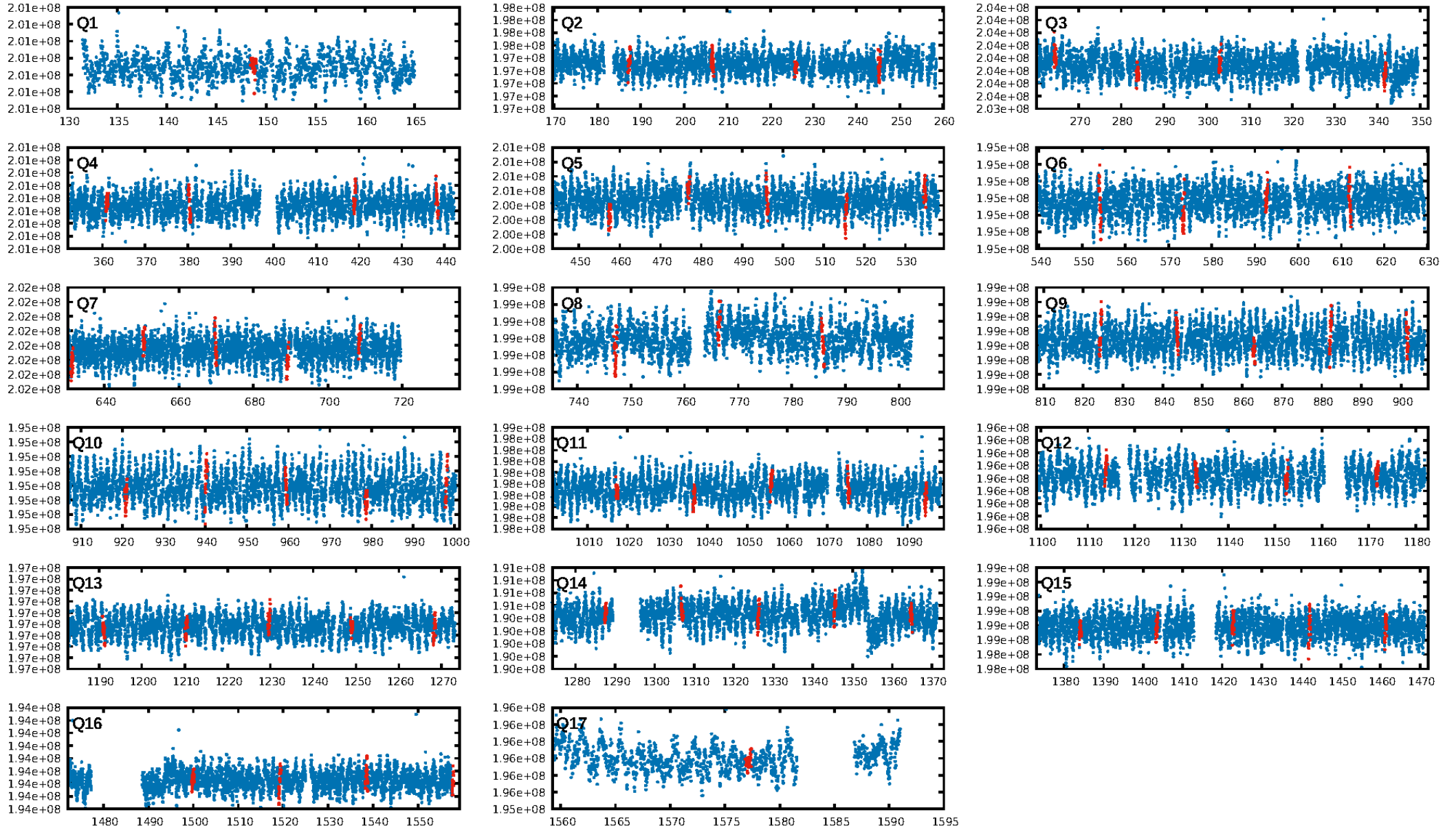
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.23 σ]
LongPeriod-sig: 100.0% [98.60 σ]
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [20/21]
GhostDiagnostic-chr: 1.399
Centroid-sig: 79.9%
Centroid-so: 0.331 arcsec [0.39 σ]
OotOffset-rm: 0.780 arcsec [0.88 σ]
OotOffset-st: 2/4/4/2 [12]
KicOffset-rm: 0.764 arcsec [0.89 σ]
KicOffset-st: 2/4/4/2 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 0.00 [0/17]

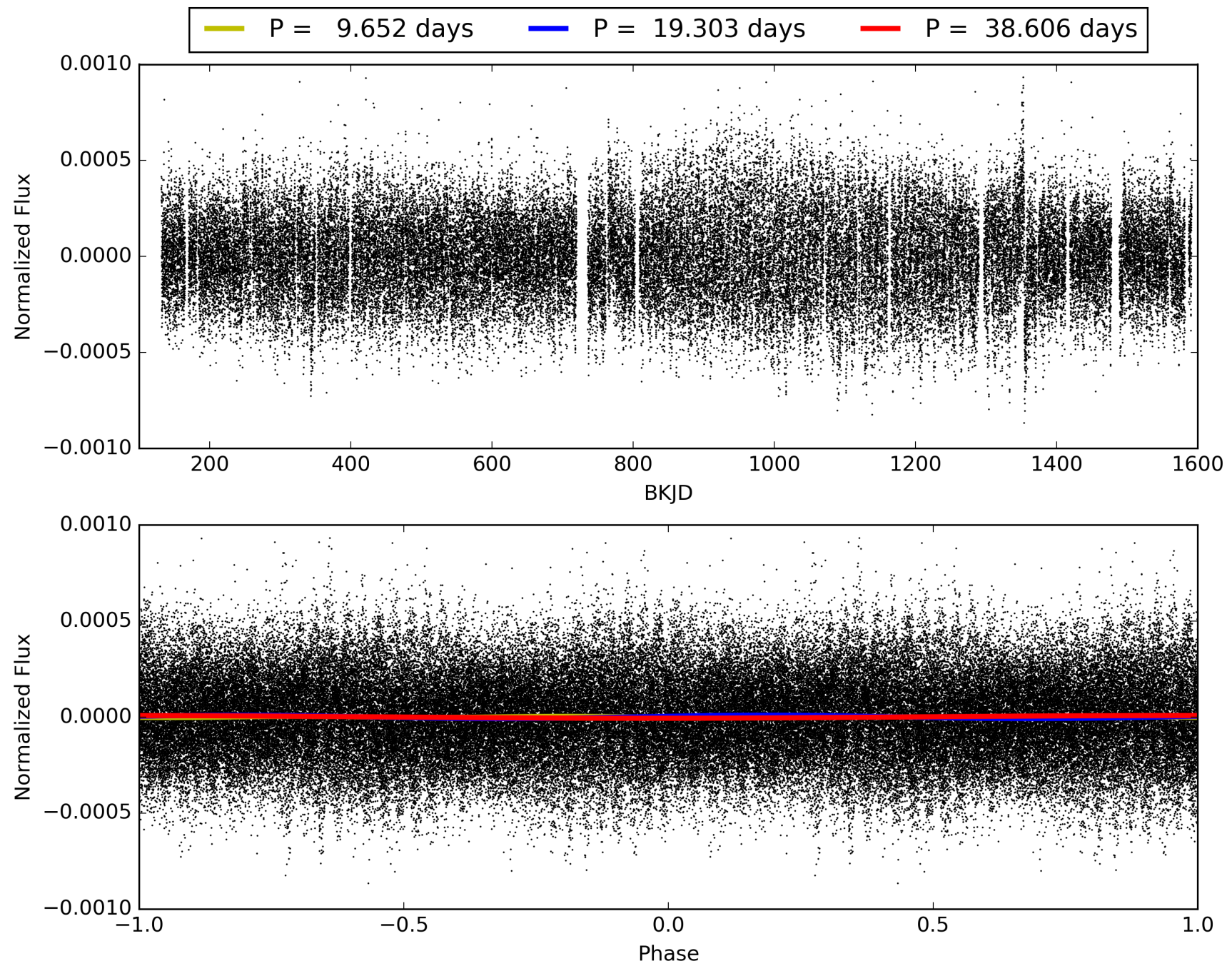
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:31:01 Z

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

TCE 008840117-06, PDC Light Curves

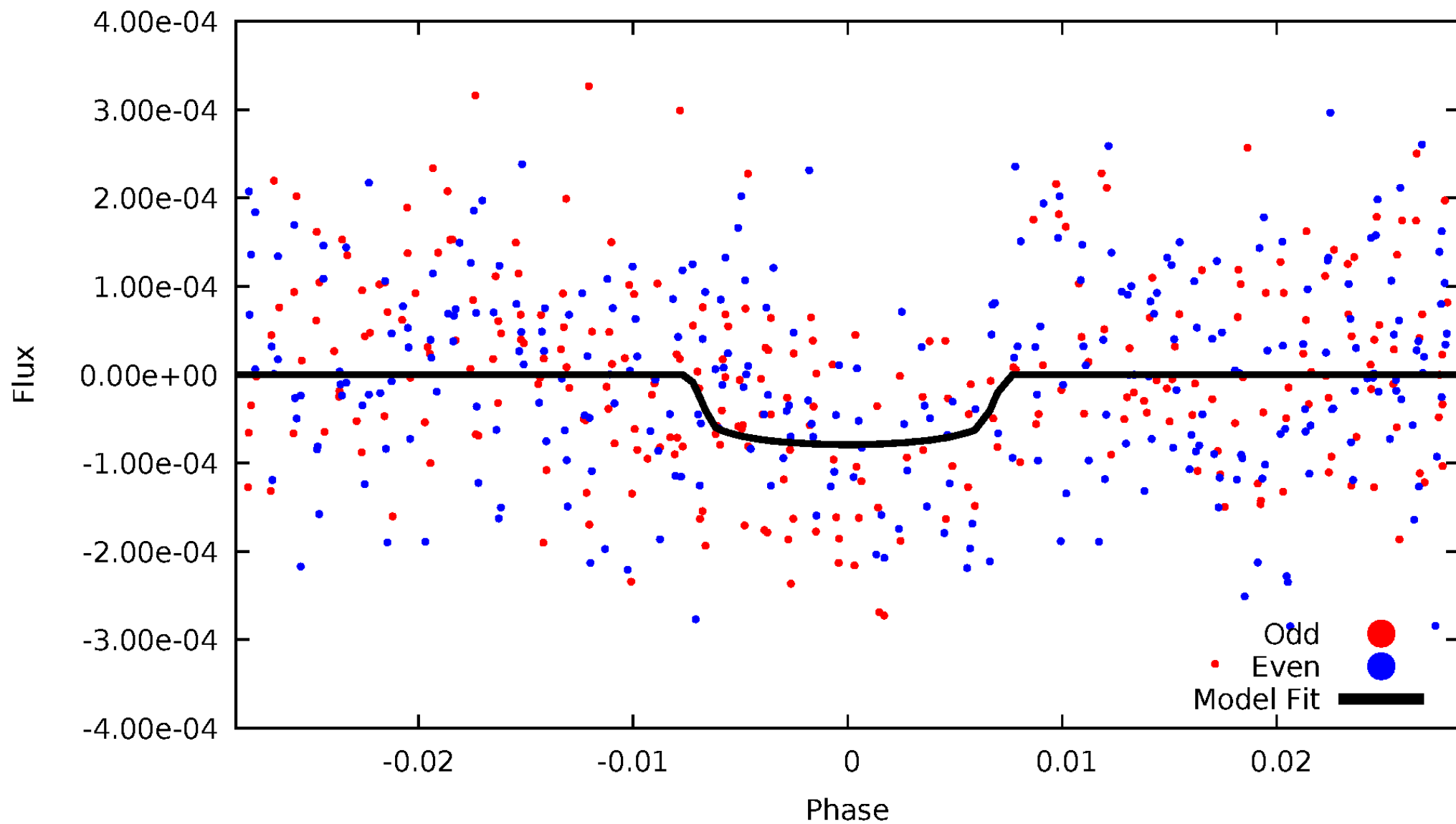


TCE 008840117-06



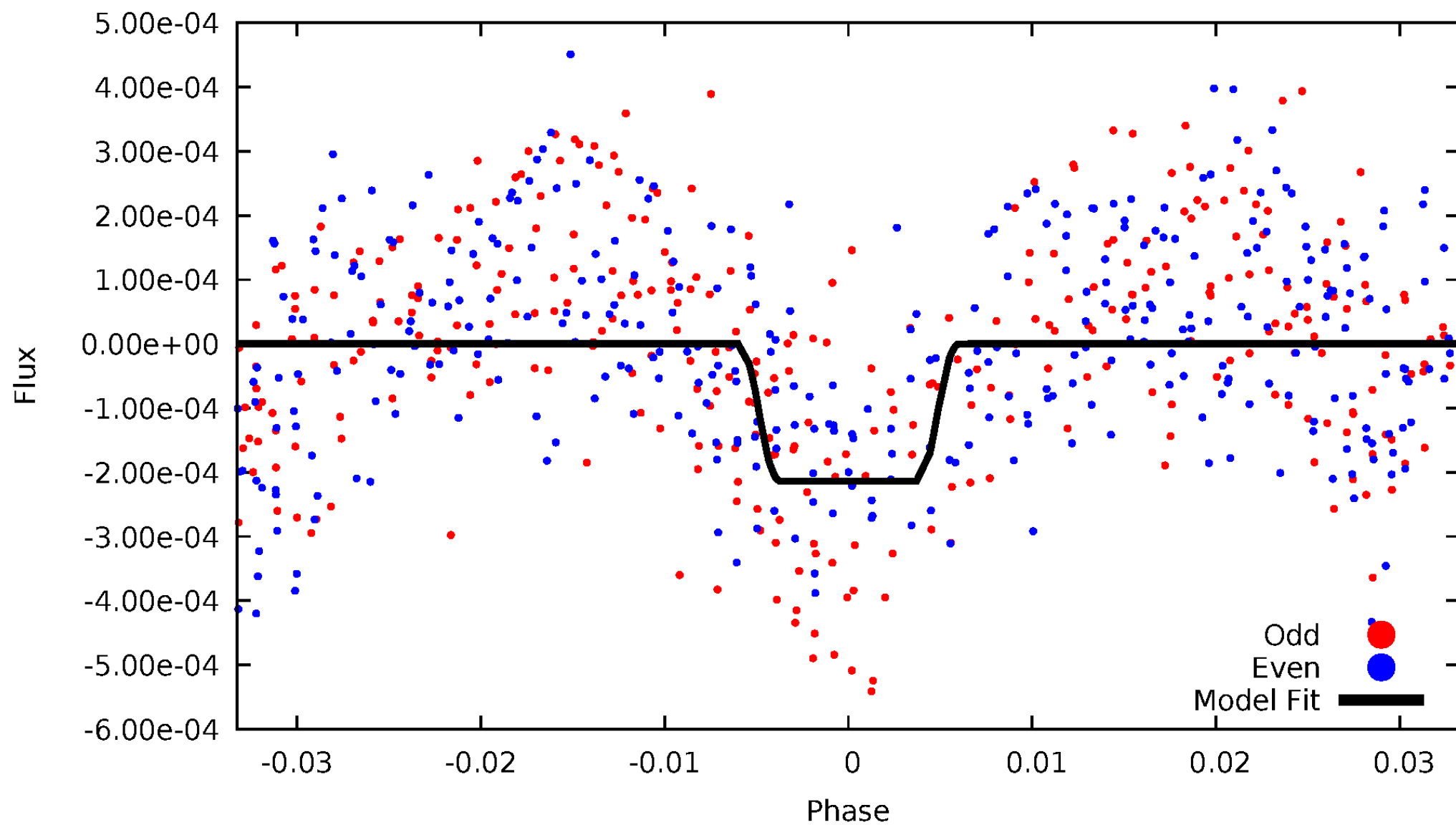
DV Odd/Even

TCE 008840117-06



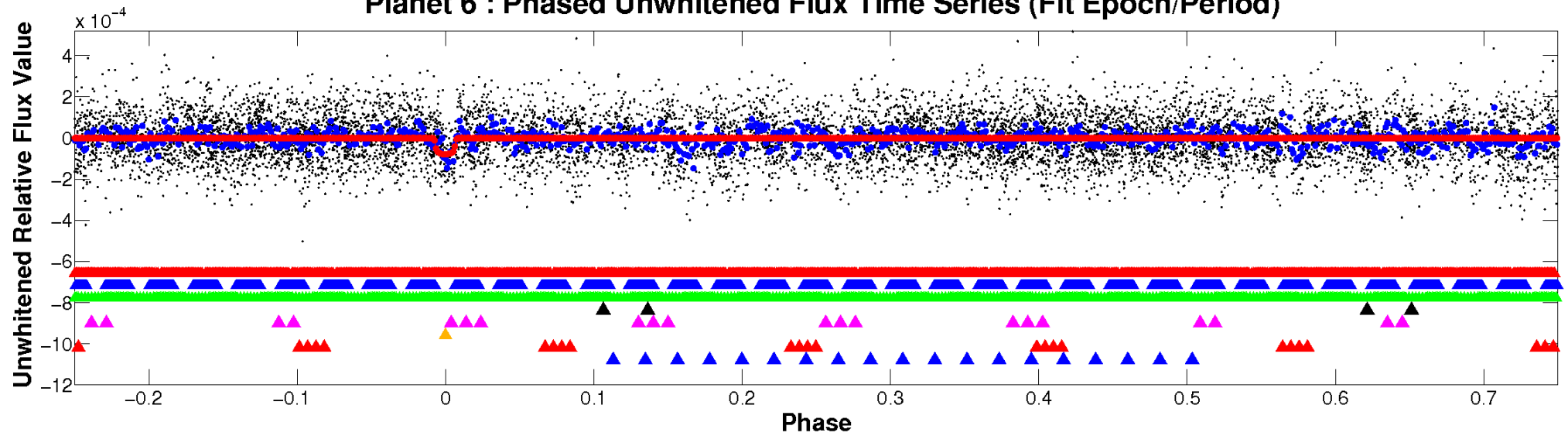
ALT Odd/Even

TCE 008840117-06

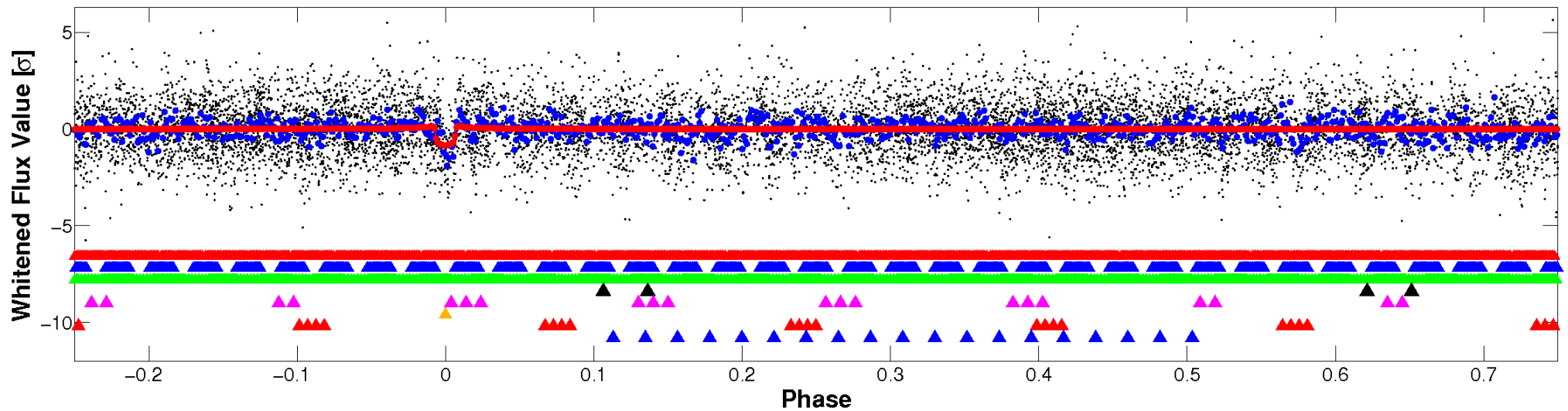


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

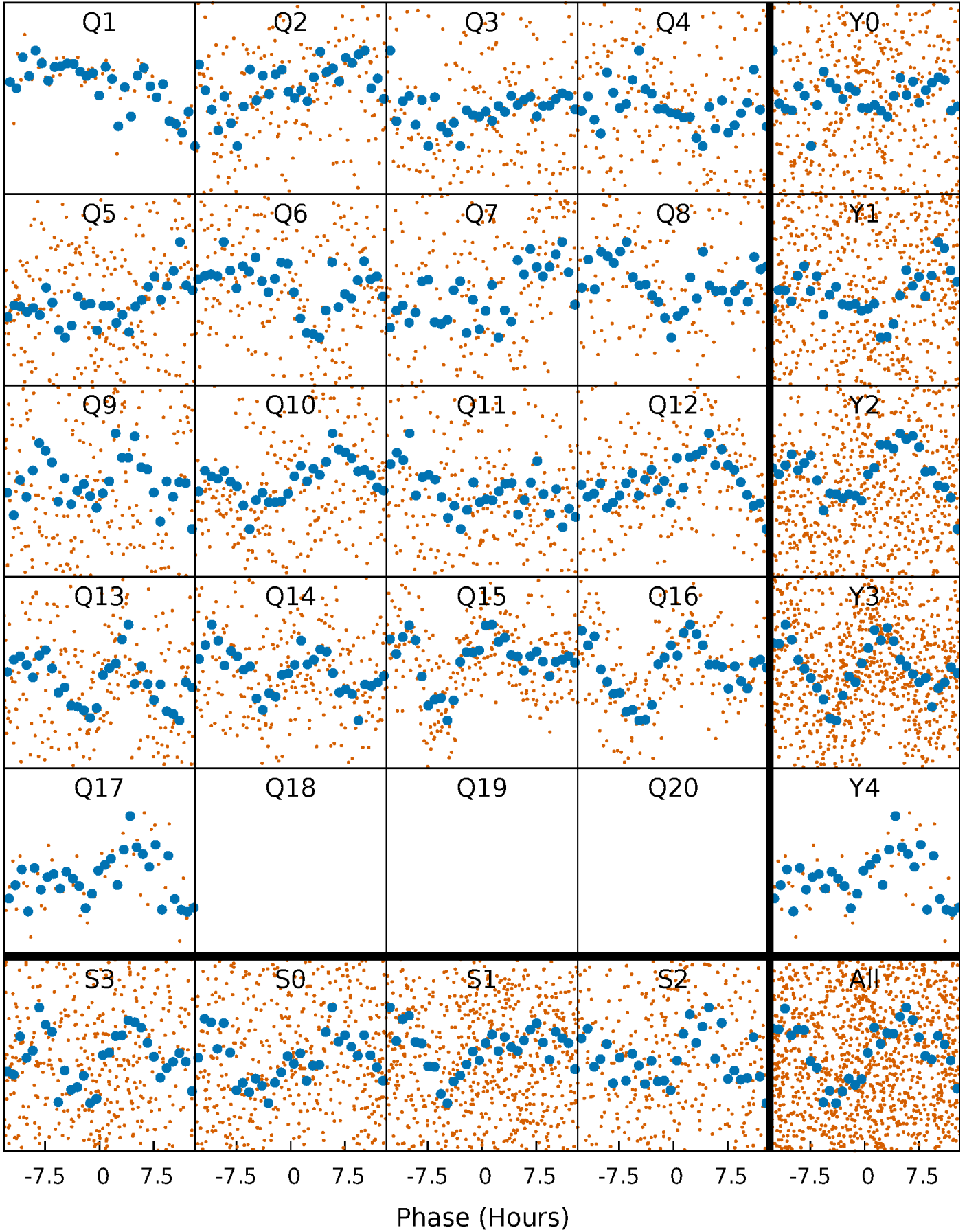


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



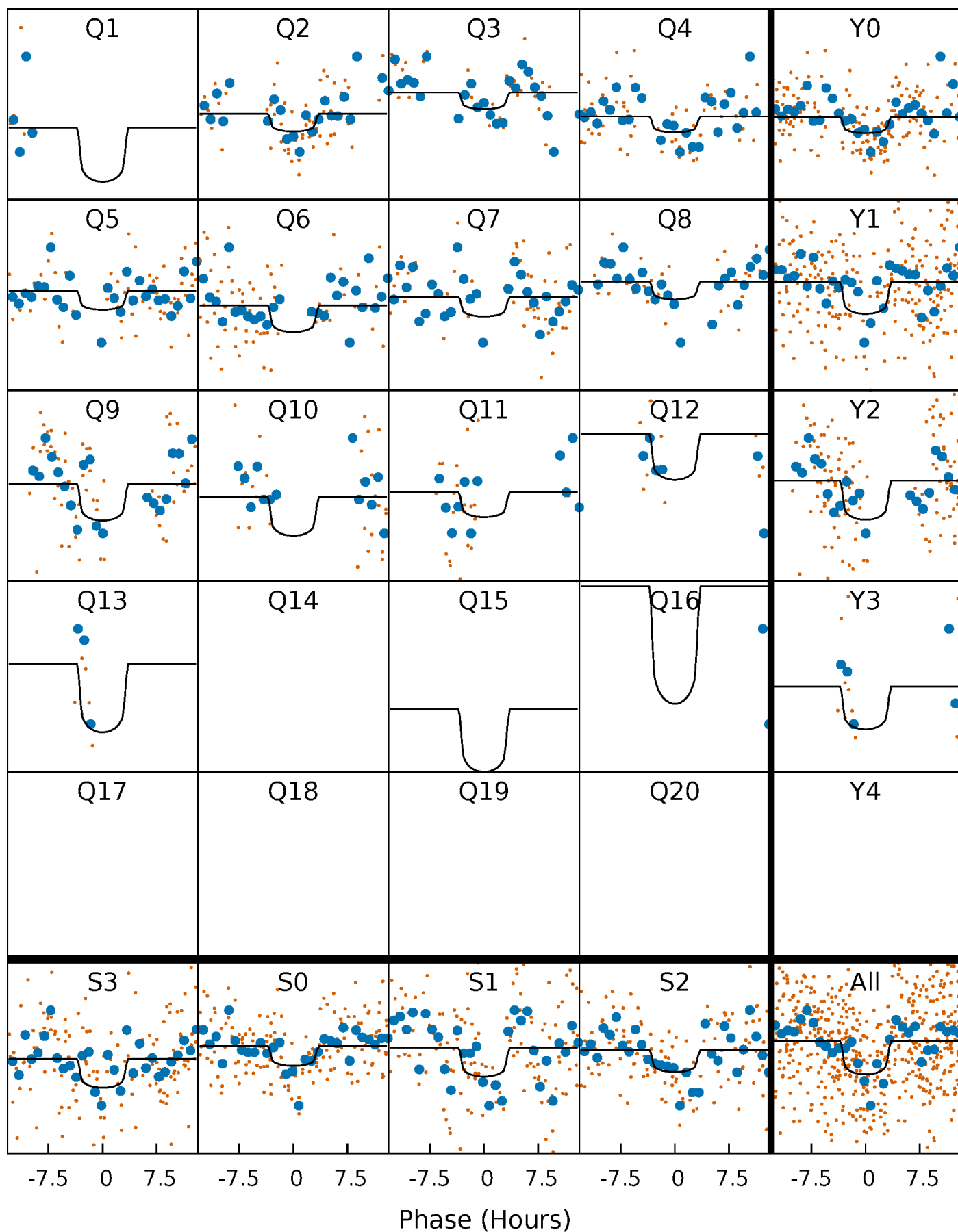
PDC Quarter-Phased Transit Curves

TCE 008840117-06 P= 19.303168 Days $T_0=148.719464$ (BKJD)



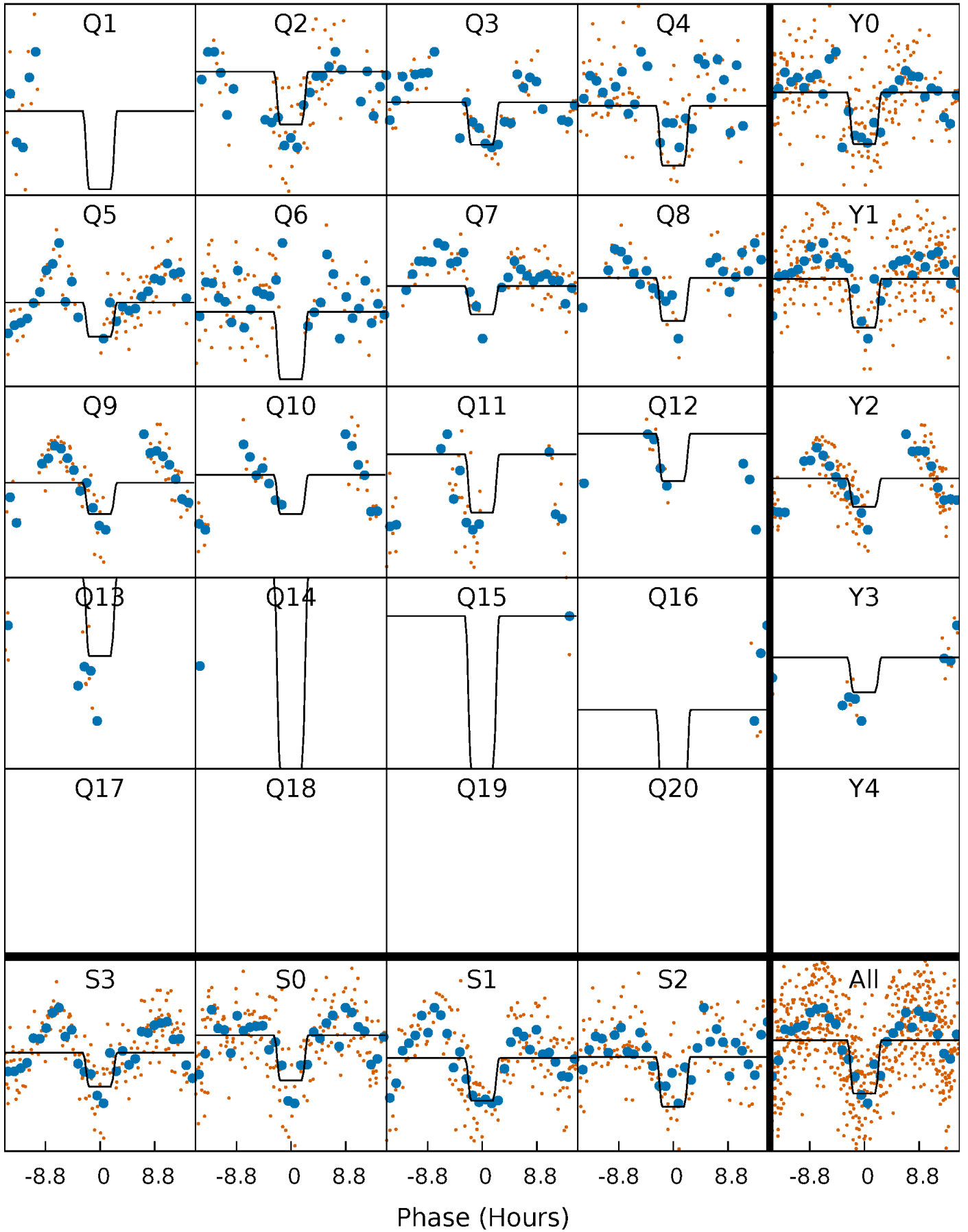
DV Quarter-Phased Transit Curves

TCE 008840117-06 P= 19.303168 Days $T_0=148.719464$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

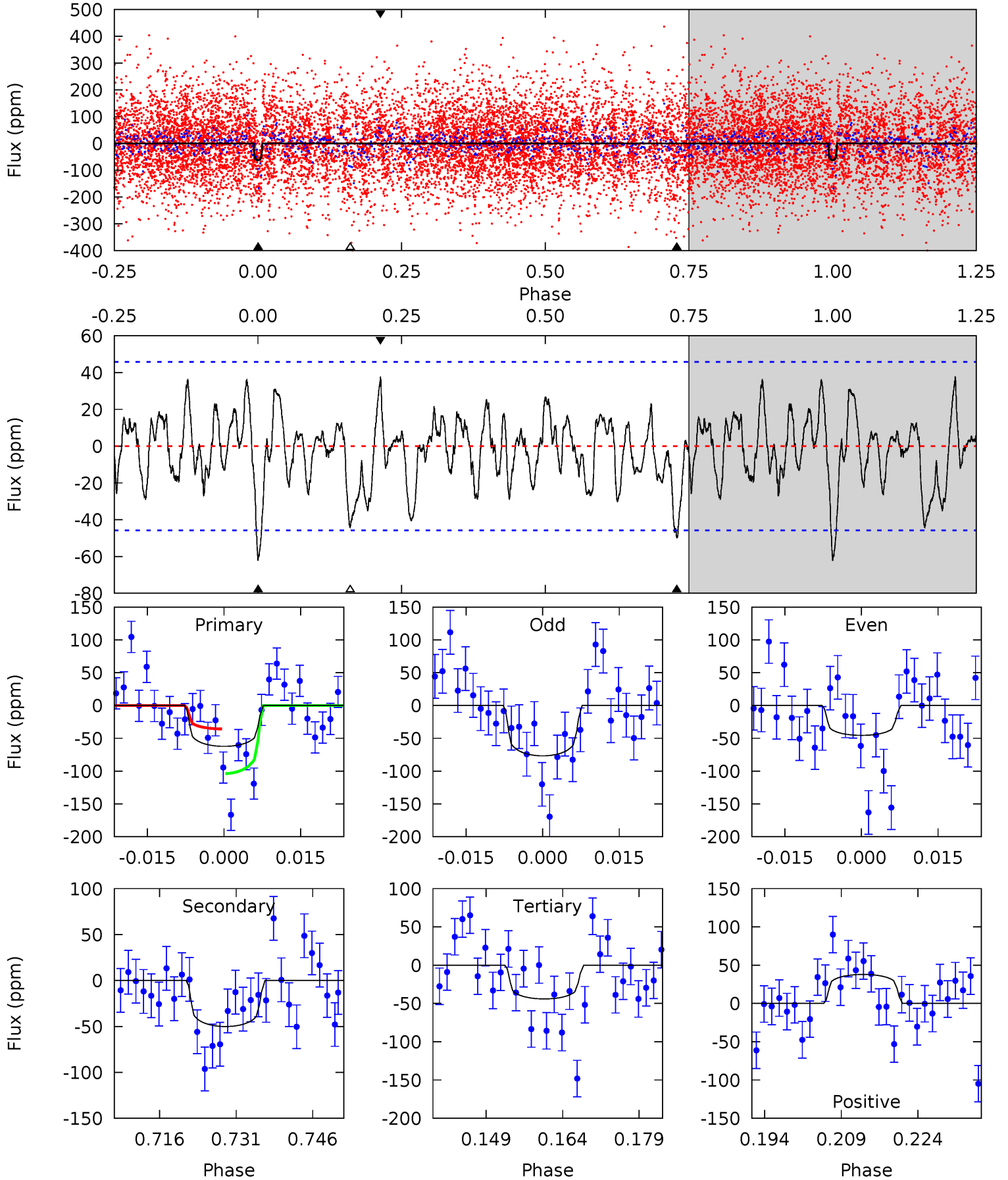
TCE 008840117-06 P= 19.302556 Days $T_0=148.729271$ (BKJD)



DV Model-Shift Uniqueness Test

008840117-06, P = 19.303168 Days, E = 129.416296 Days

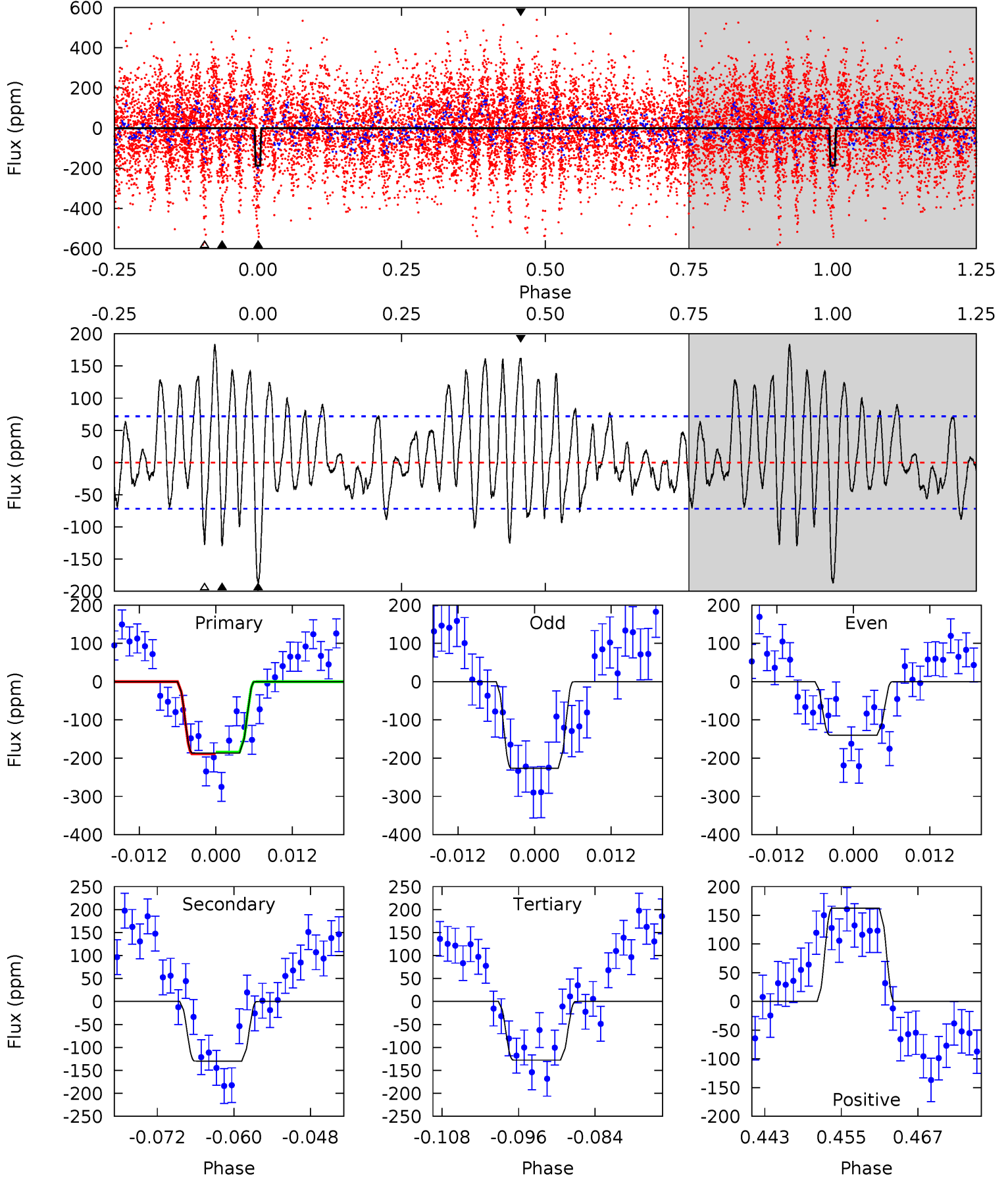
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.73	5.42	4.76	4.09	4.95	2.43	1.62	1.97	2.64	0.65	1.32	1.68	0.84	0.38	3.58



Alt Model-Shift Uniqueness Test

008840117-06, $P = 19.302556$ Days, $E = 129.426715$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	9.02	8.89	11.3	4.99	2.51	4.37	4.11	1.69	0.13	-2.29	3.01	0.98	0.50	0.15



Stellar Parameters For KIC 008840117

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6315^{+176}_{-176}	$3.811^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.410^{+0.447}_{-0.830}$	$1.371^{+0.239}_{-0.263}$	$0.138^{+0.270}_{-0.041}$
	+3%/-3%	+8%/-3%	+300%/-250%	+19%/-34%	+17%/-19%	+196%/-30%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008840117-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-50 ± 9	$2.59^{+1.96}_{-1.70}$	1503^{+97}_{-120}	5260^{+3990}_{-1051}	105^{+689}_{-73}
Alt.	-130 ± 14	$3.71^{+2.22}_{-1.83}$	1507^{+85}_{-137}	5513^{+2532}_{-945}	126^{+395}_{-75}

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

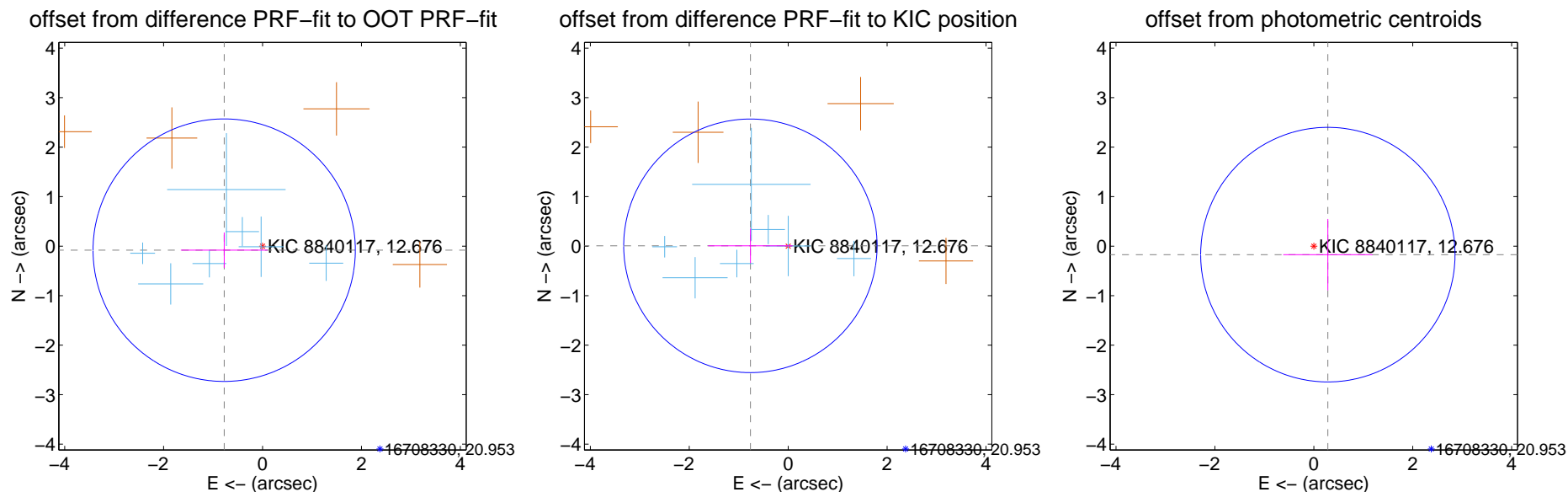
DV Centroid Data

Supplemental centroid analysis for 008840117-06. Kepler magnitude: 12.68. Transit SNR 8.47

There are 7 quarters with good PRF difference image offsets

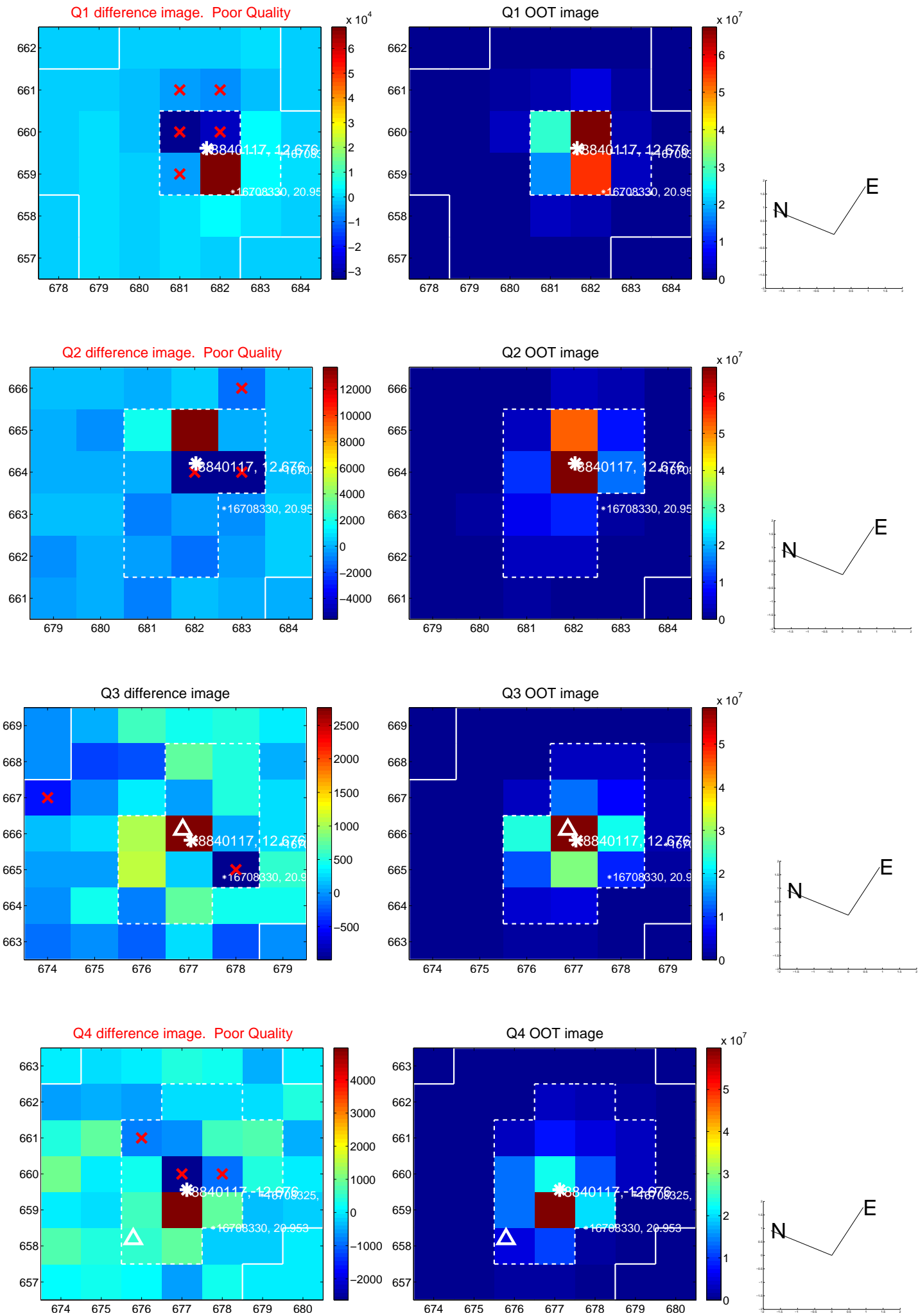
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.780 ± 0.884	0.88	0.776 ± 0.877	-0.081 ± 0.357
PRF-fit source offset from KIC position	0.764 ± 0.854	0.89	0.764 ± 0.854	0.007 ± 0.351
photometric centroid source offset	0.33 ± 0.86	0.39	-0.28 ± 0.90	-0.17 ± 0.72

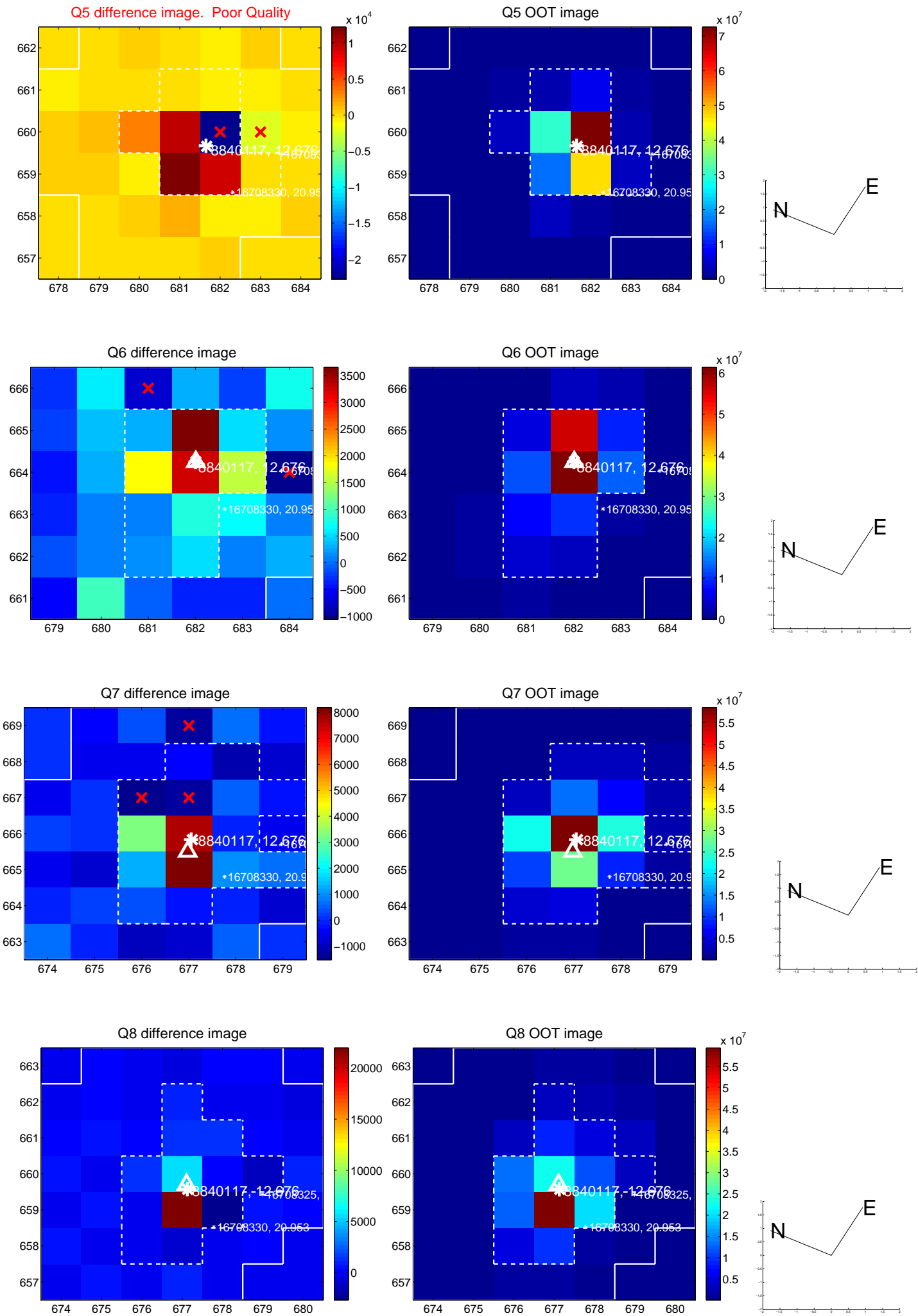


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

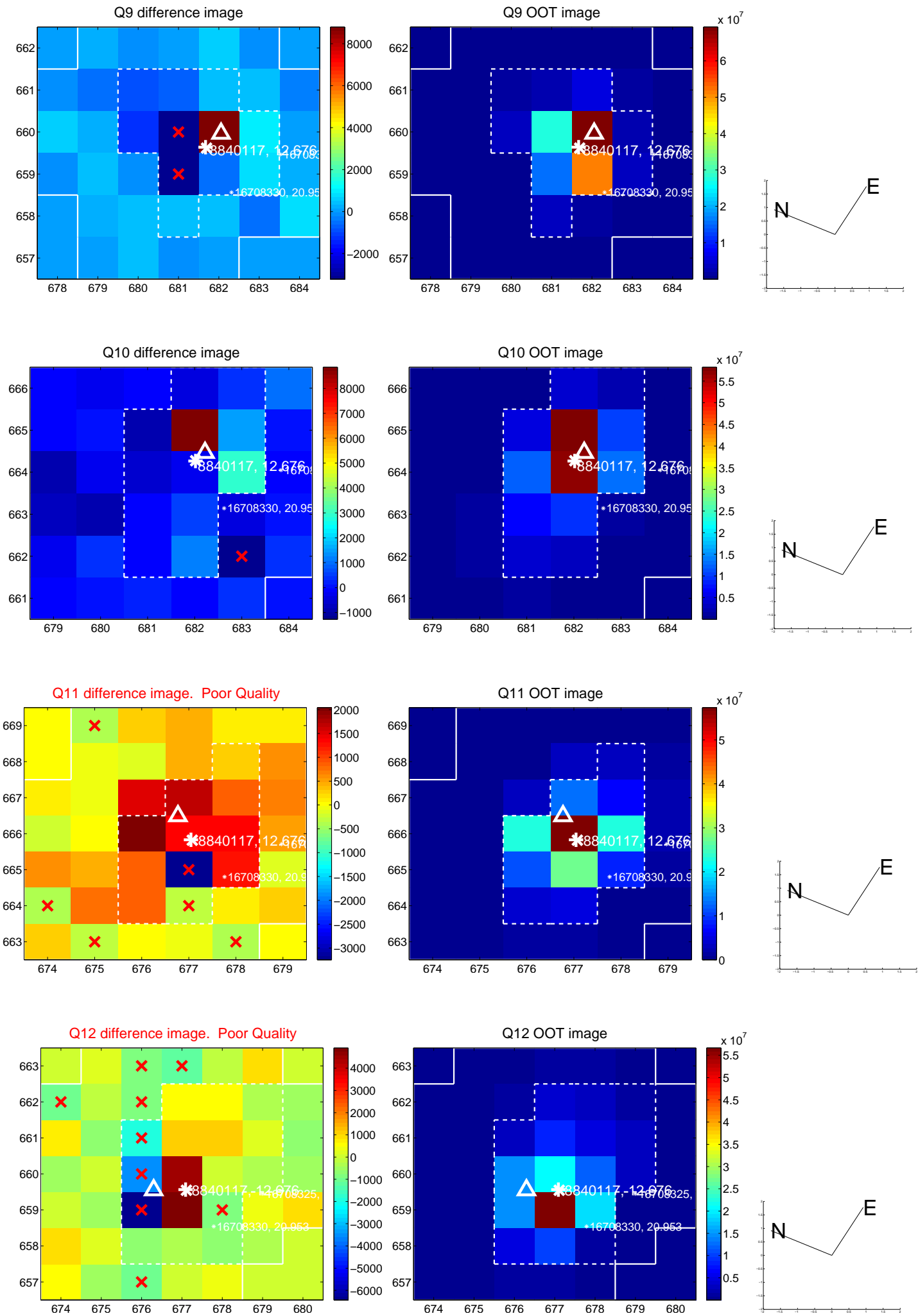
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



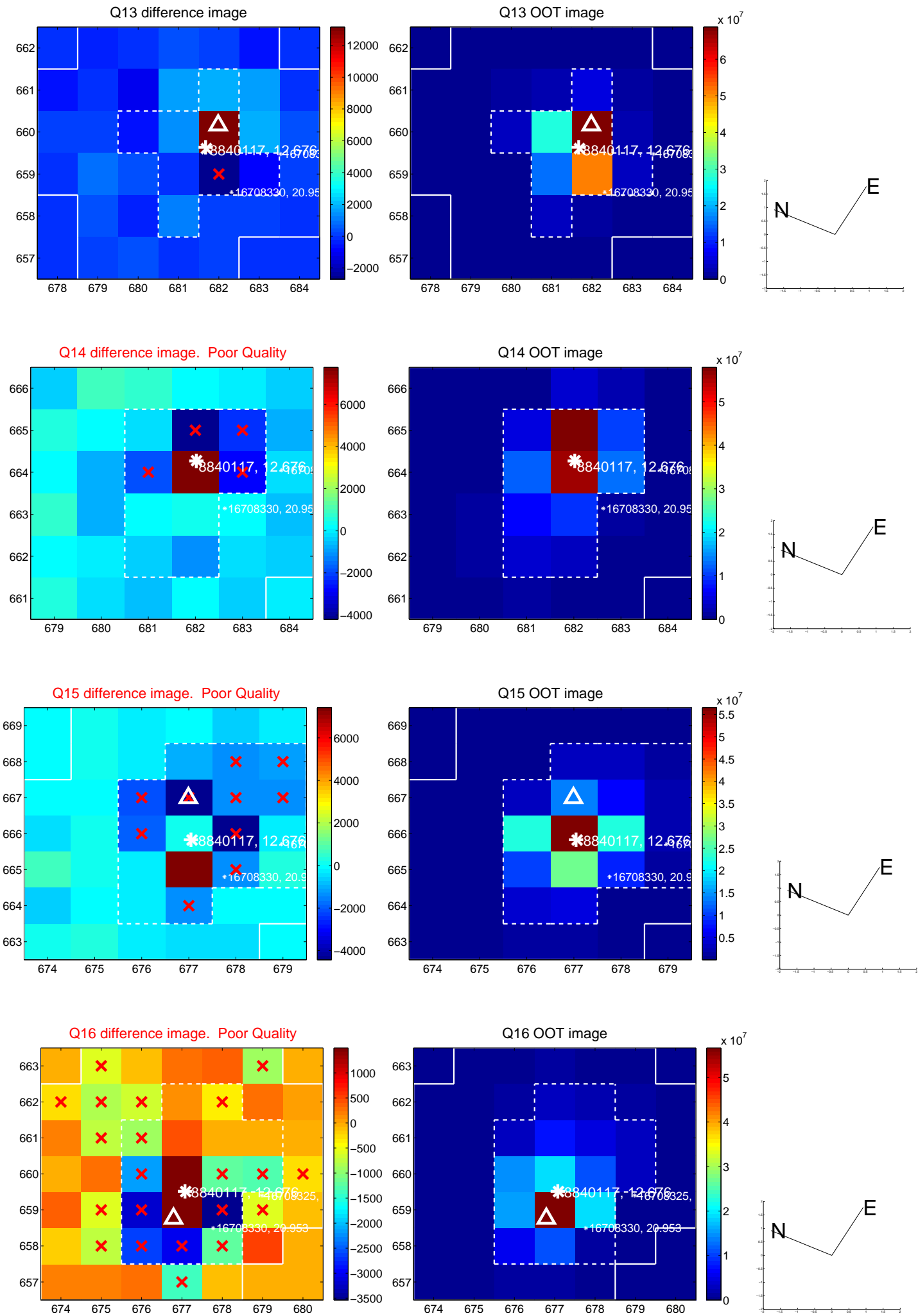
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



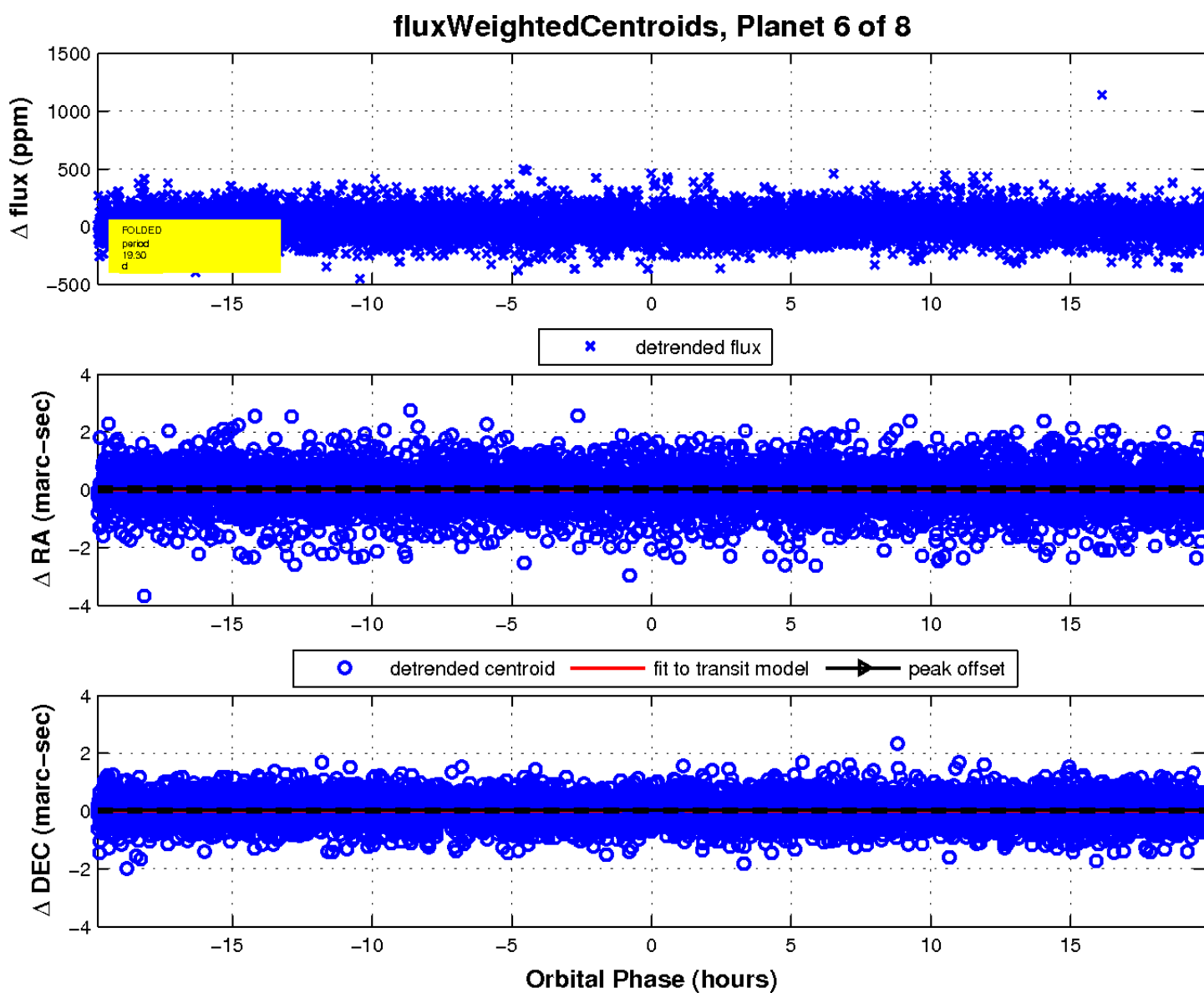
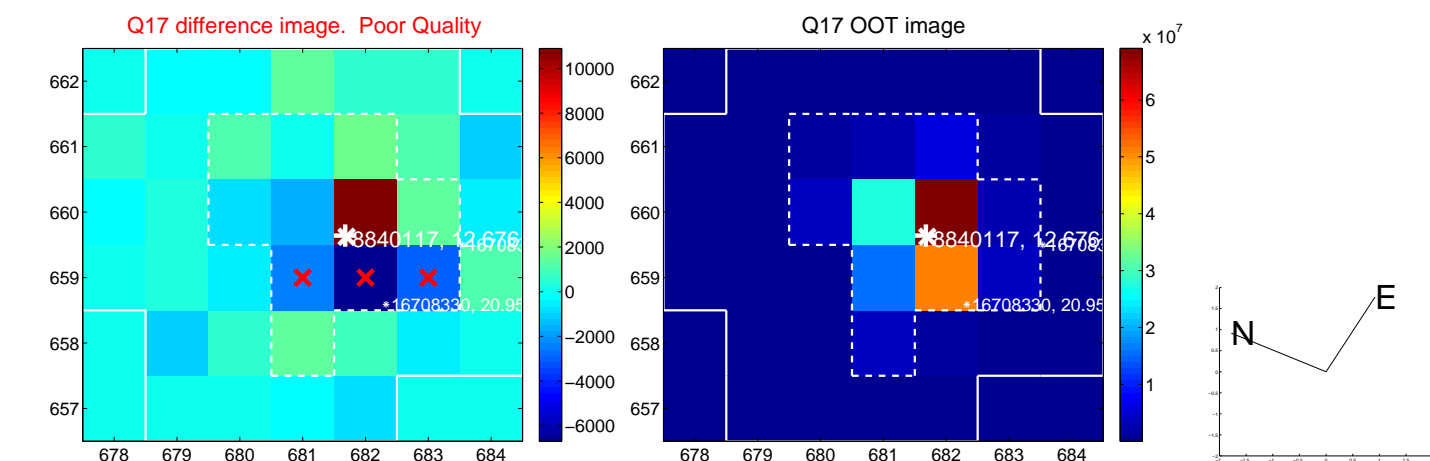
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

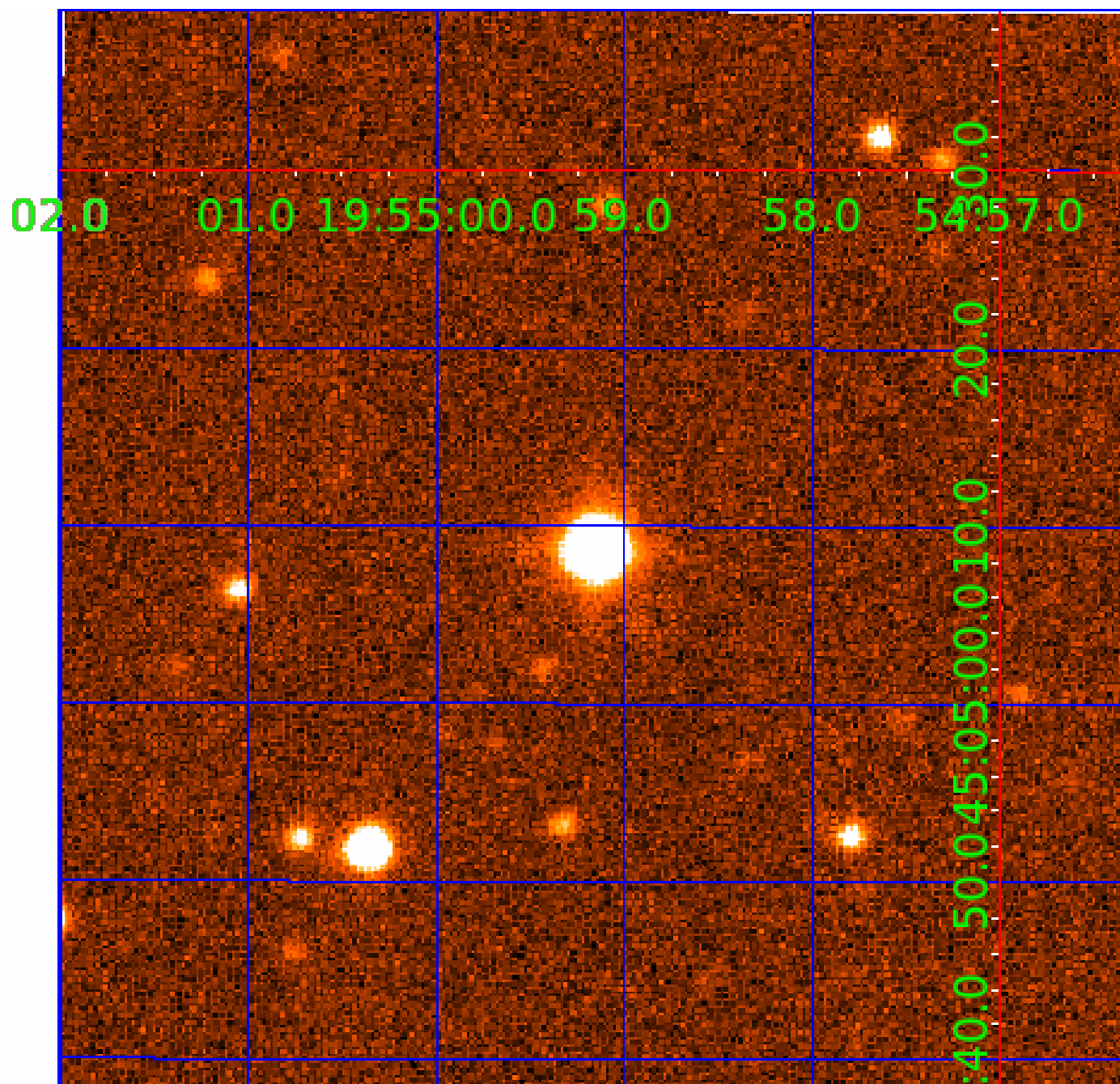


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008840117

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})
008840117-01	OBS	No	1.702570	132.507027	138.6	3.000	11.4	-1.0	2.41	6315	2.85	8608.47
008840117-02	OBS	No	1.702833	132.129333	25.7	3.908	8.9	9.2	2.41	6315	2.21	8606.69
008840117-03	OBS	No	2.069754	132.522608	8.2	11.983	8.6	4.6	2.41	6315	0.80	6635.00
008840117-06	OBS	No	19.303168	148.719464	79.1	6.605	9.0	8.5	2.41	6315	2.44	337.98
008840117-07	OBS	No	61.108707	163.245592	102.4	7.741	8.5	6.5	2.41	6315	2.85	72.71
008840117-08	OBS	No	76.794060	139.134112	209.7	2.000	7.1	-1.0	2.41	6315	3.51	53.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008840117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS
008840117-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
008840117-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008840117-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008840117-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008840117-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

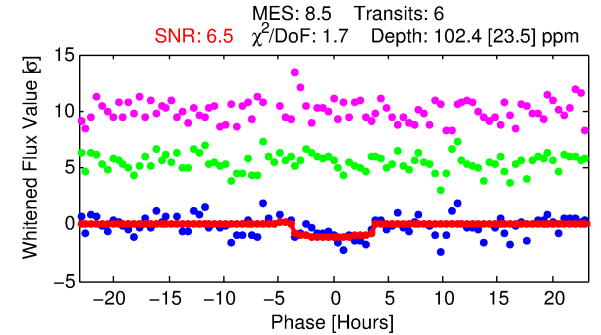
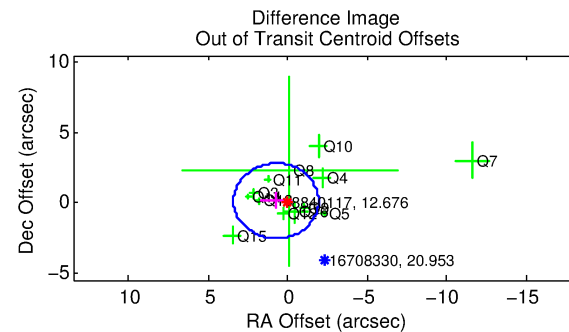
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 008840117-07

No Significant Match Found

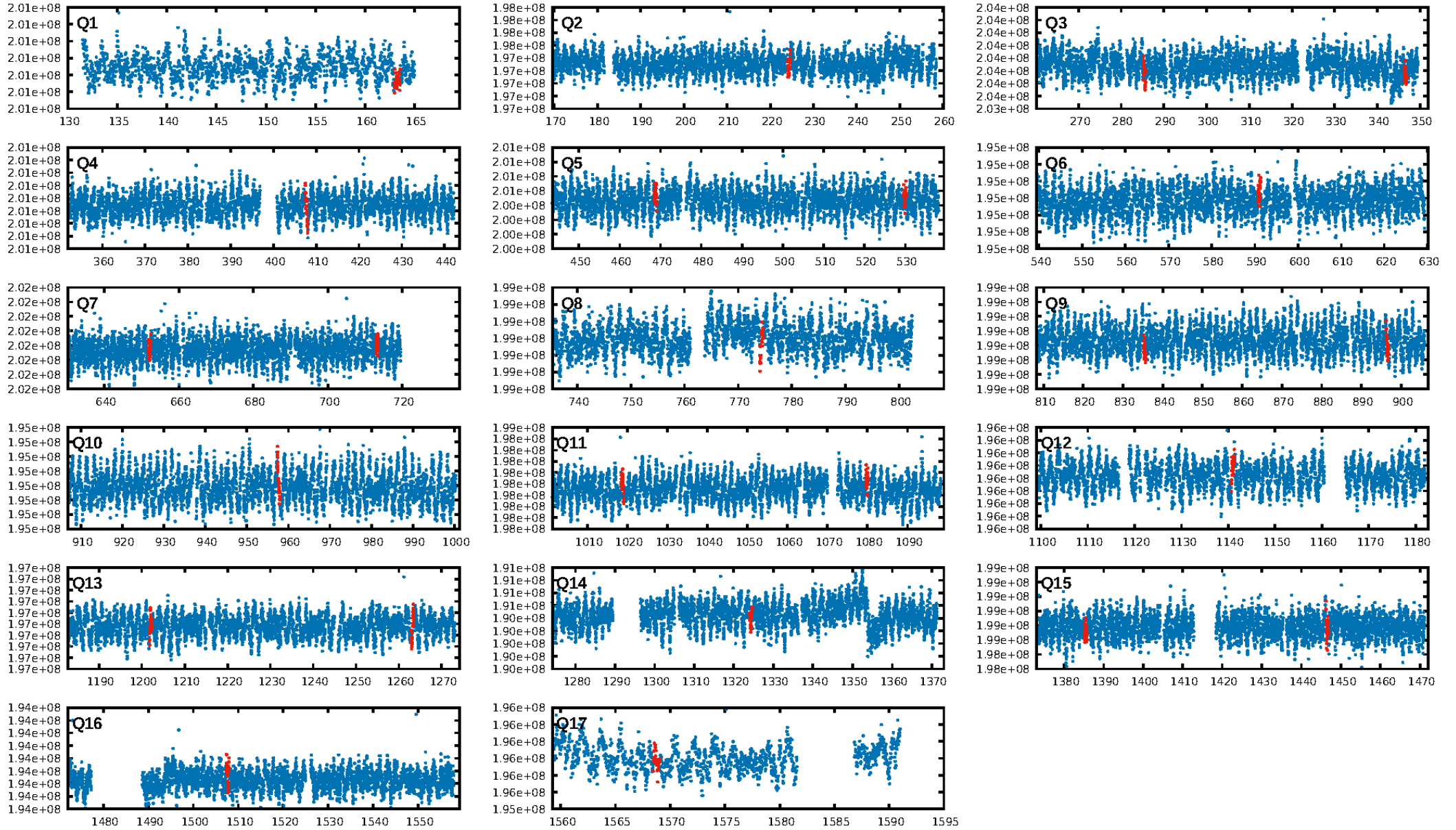
KIC: 8840117 Candidate: 7 of 8 Period: 61.109 d



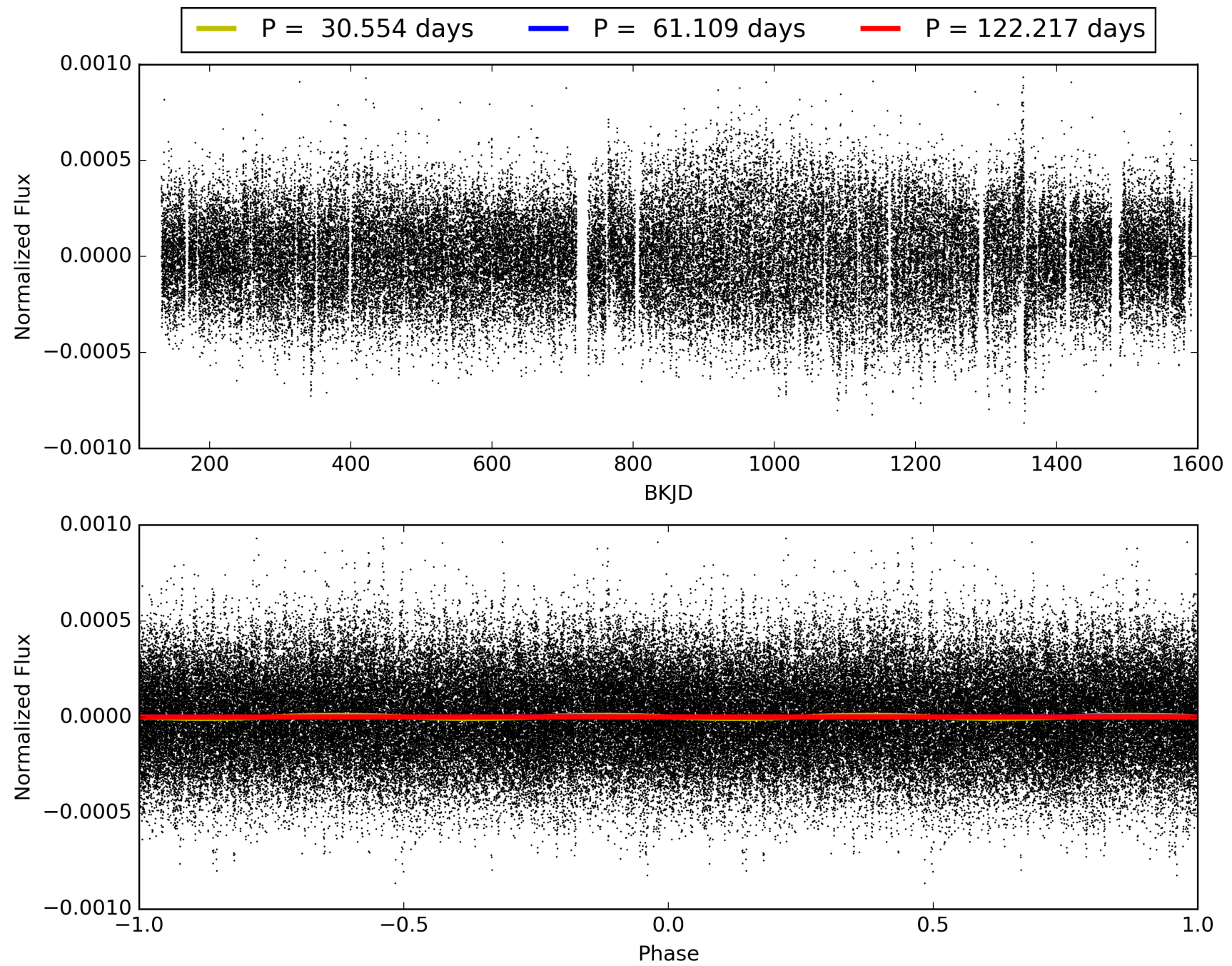
ShortPeriod-sig: 100.0% [98.60σ]
LongPeriod-sig: 100.0% [34.99σ]
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.264

Centroid-sig: 9.9%
Centroid-so: 1.234 arcsec [1.28σ]
OotOffset-rm: 0.750 arcsec [0.84σ]
KicOffset-rm: 0.763 arcsec [0.93σ]
OotOffset-st: 2/4/4/3 [13]
KicOffset-st: 2/4/4/3 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 0.00 [0/16]

TCE 008840117-07, PDC Light Curves

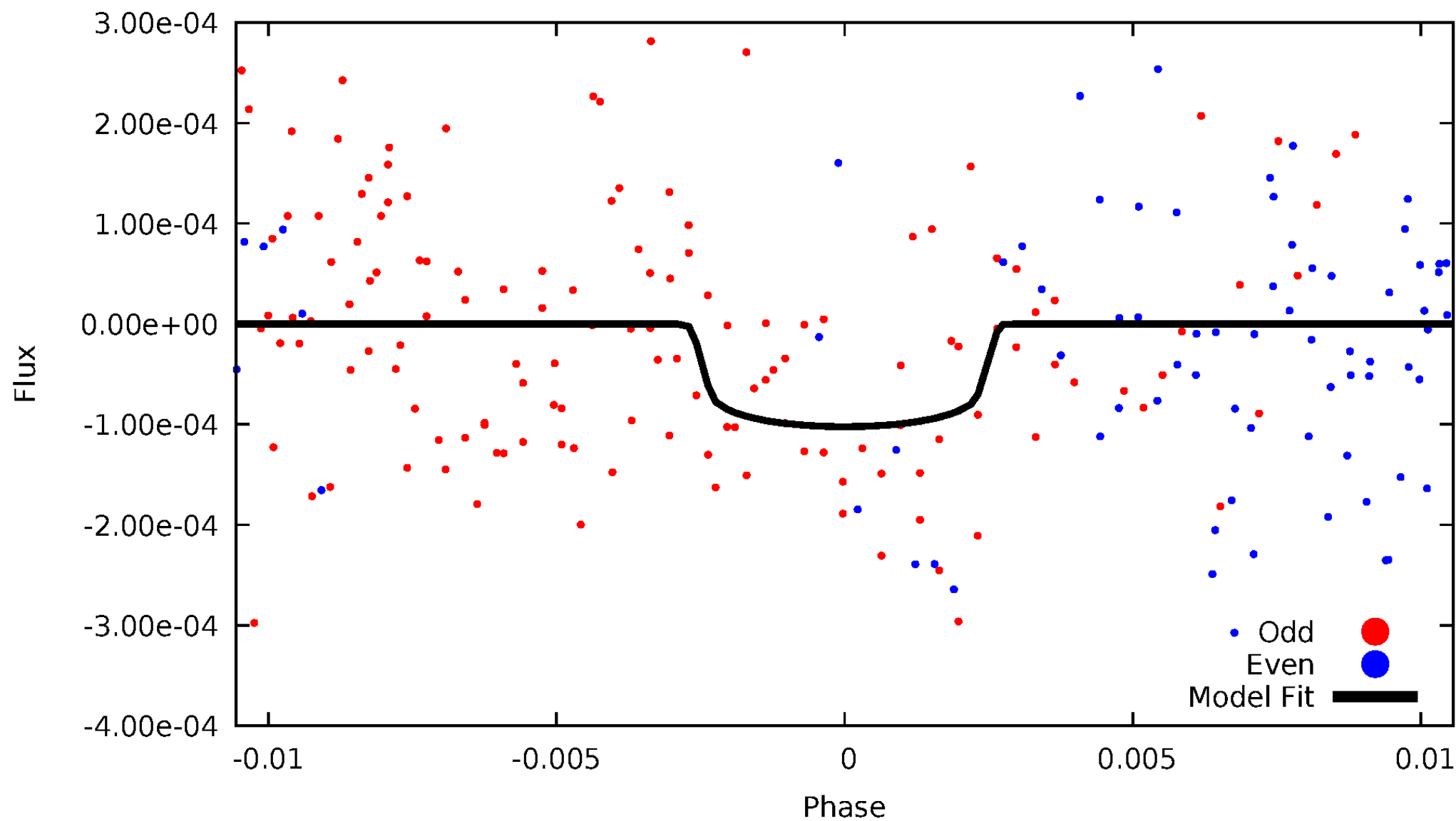


TCE 008840117-07



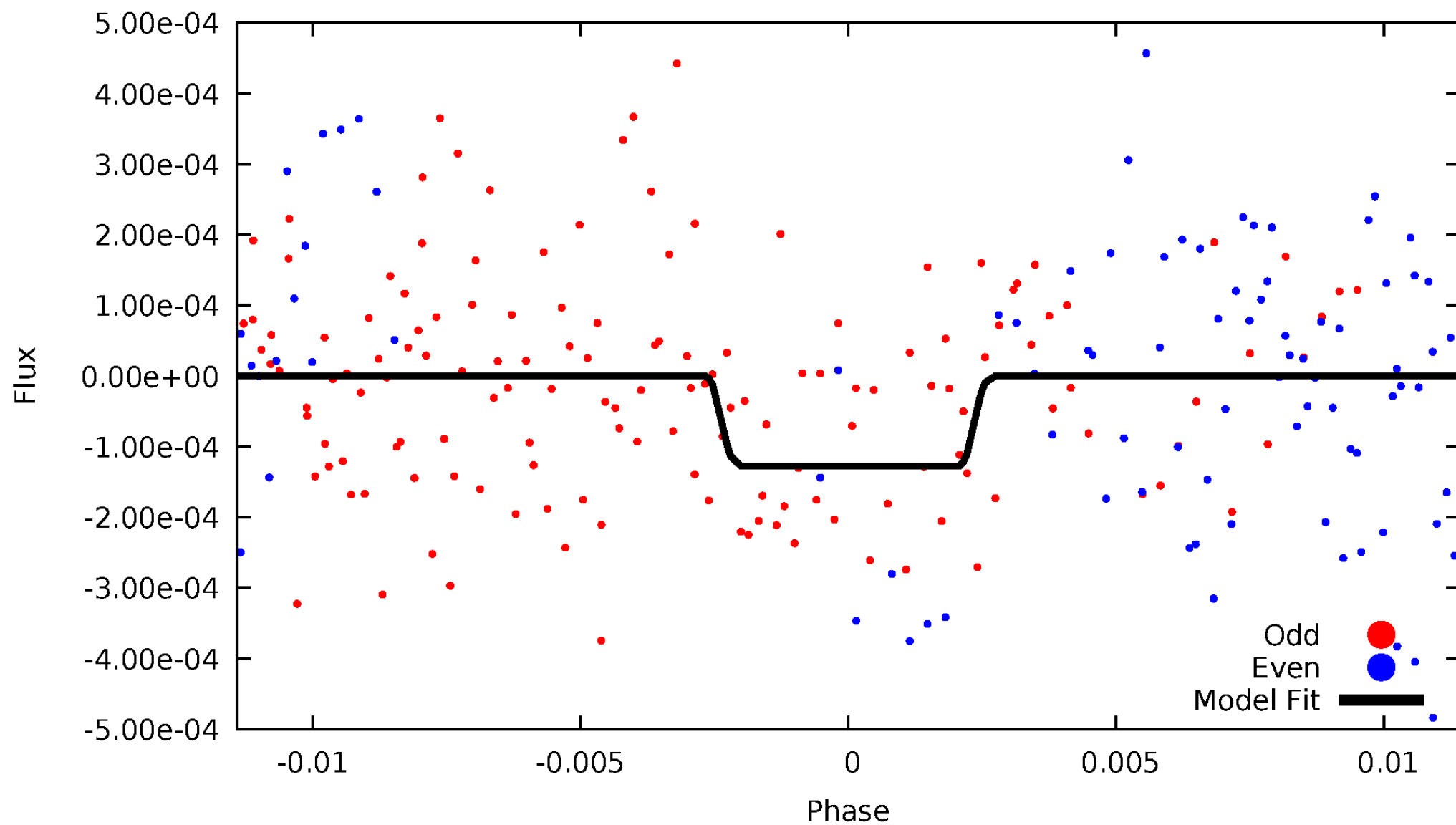
DV Odd/Even

TCE 008840117-07



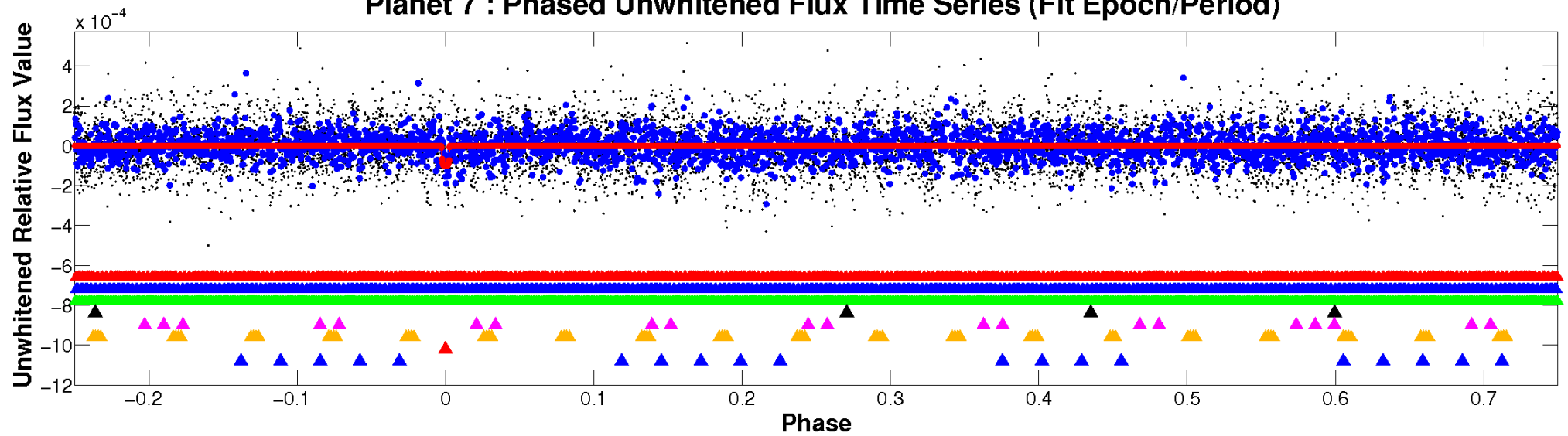
ALT Odd/Even

TCE 008840117-07

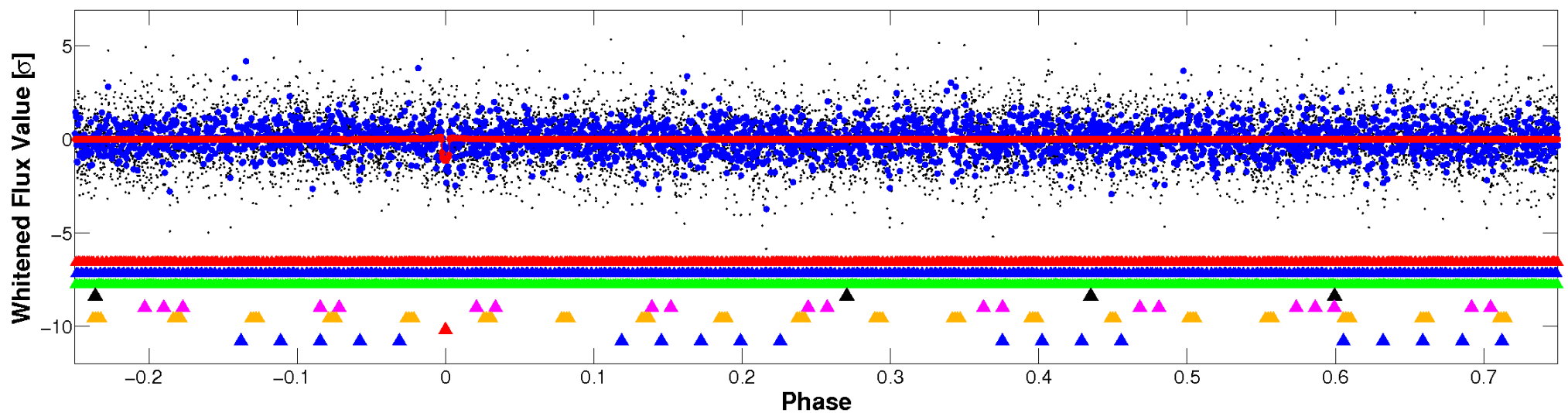


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

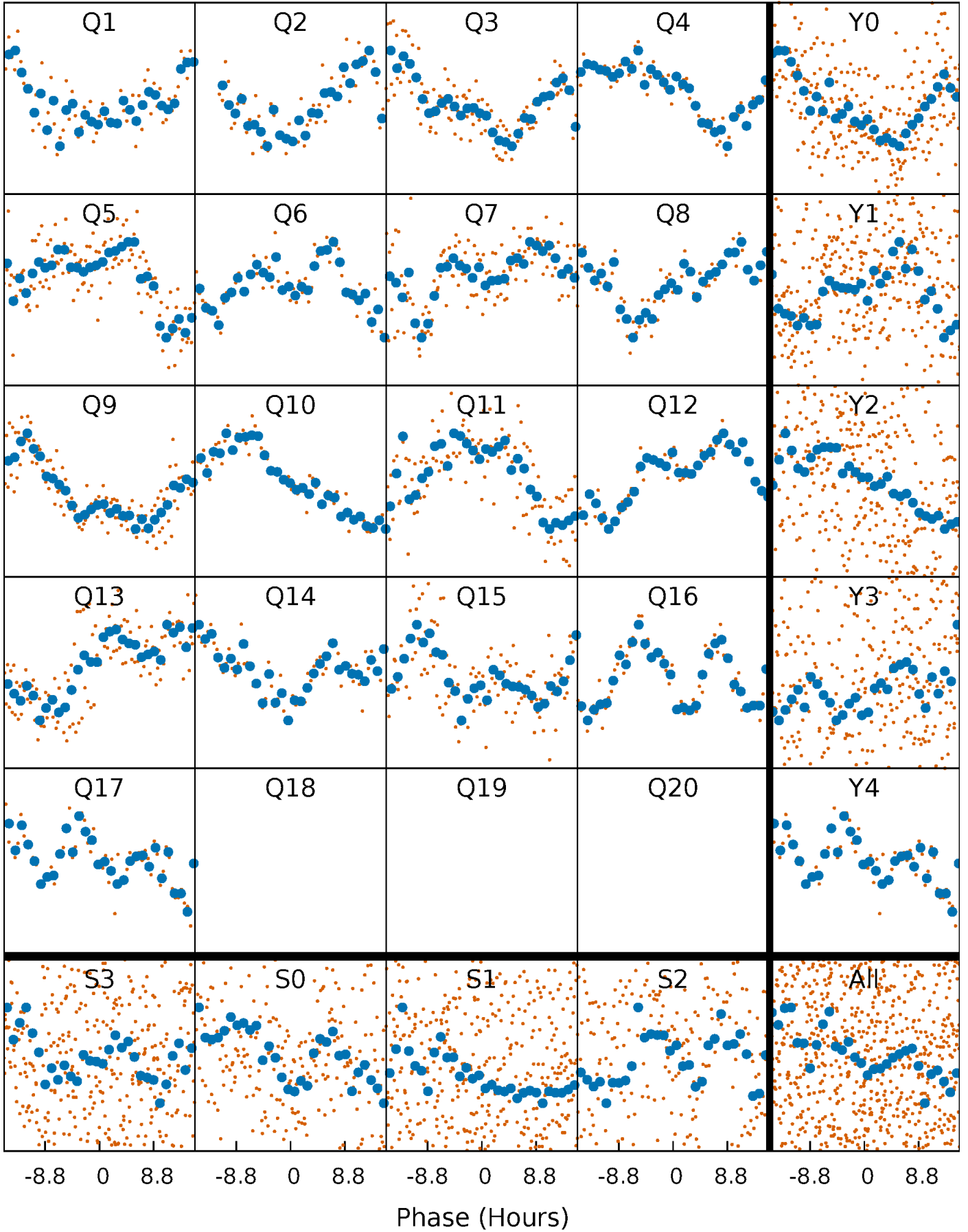


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



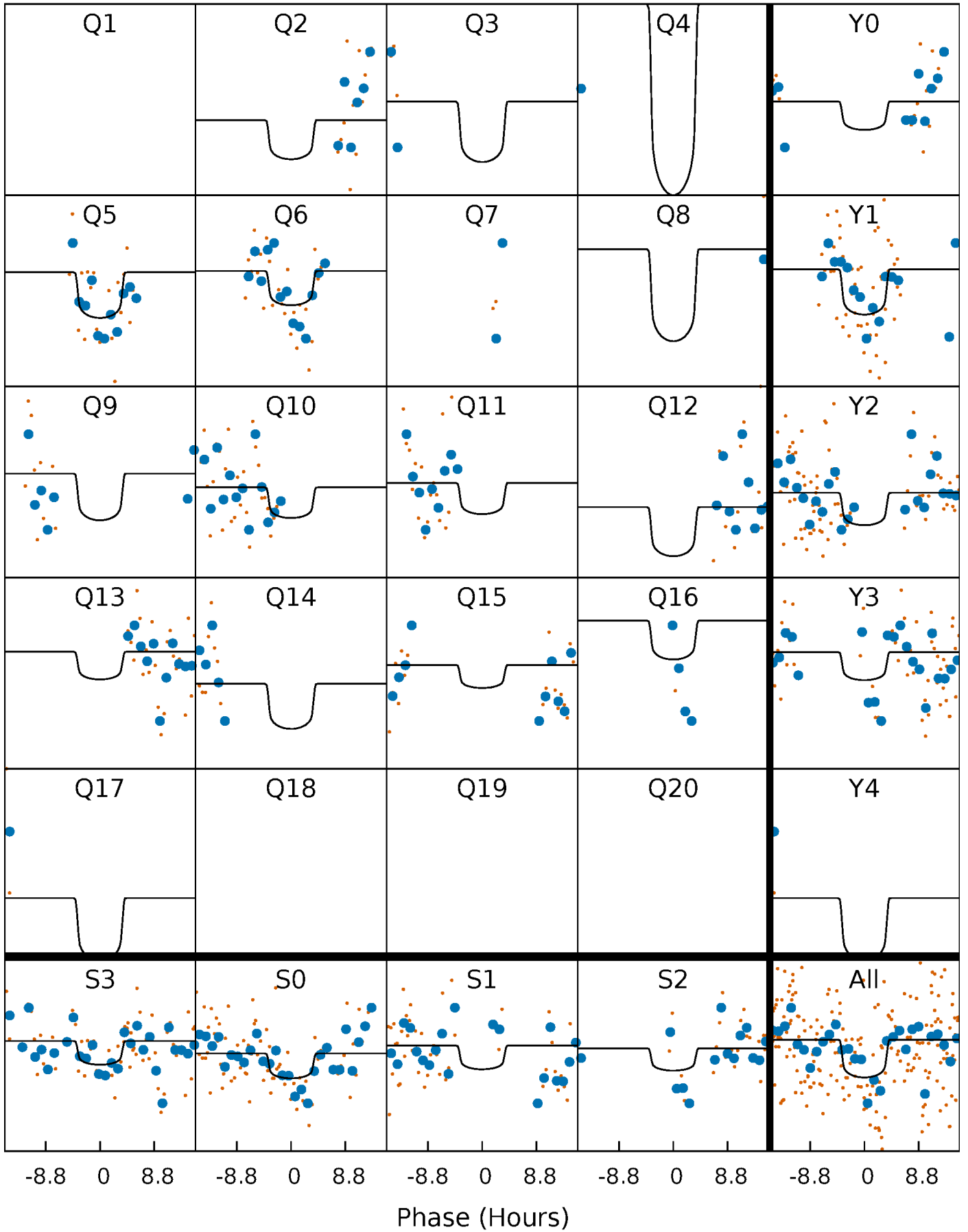
PDC Quarter-Phased Transit Curves

TCE 008840117-07 P= 61.108707 Days $T_0=163.245592$ (BKJD)



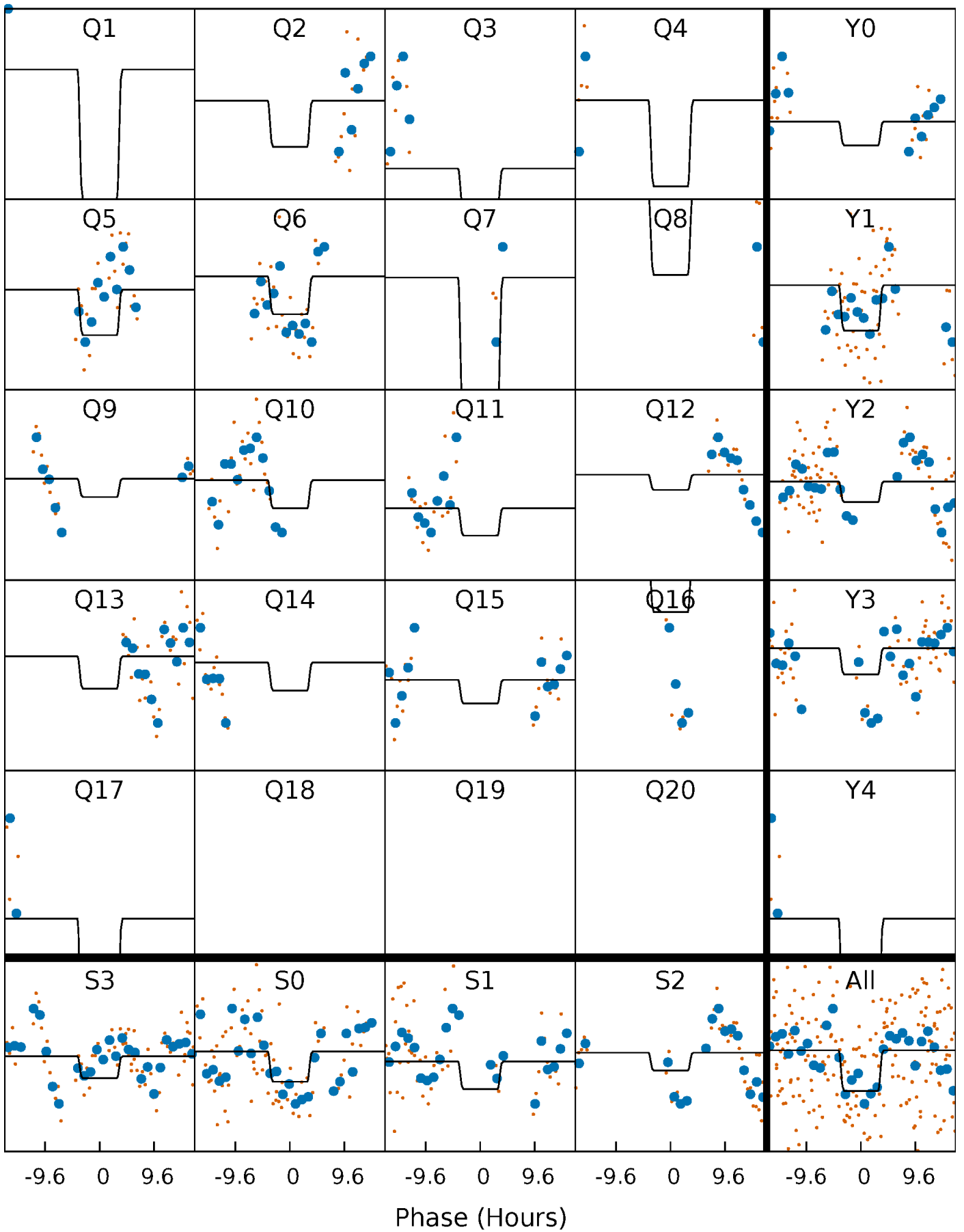
DV Quarter-Phased Transit Curves

TCE 008840117-07 P= 61.108707 Days $T_0=163.245592$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

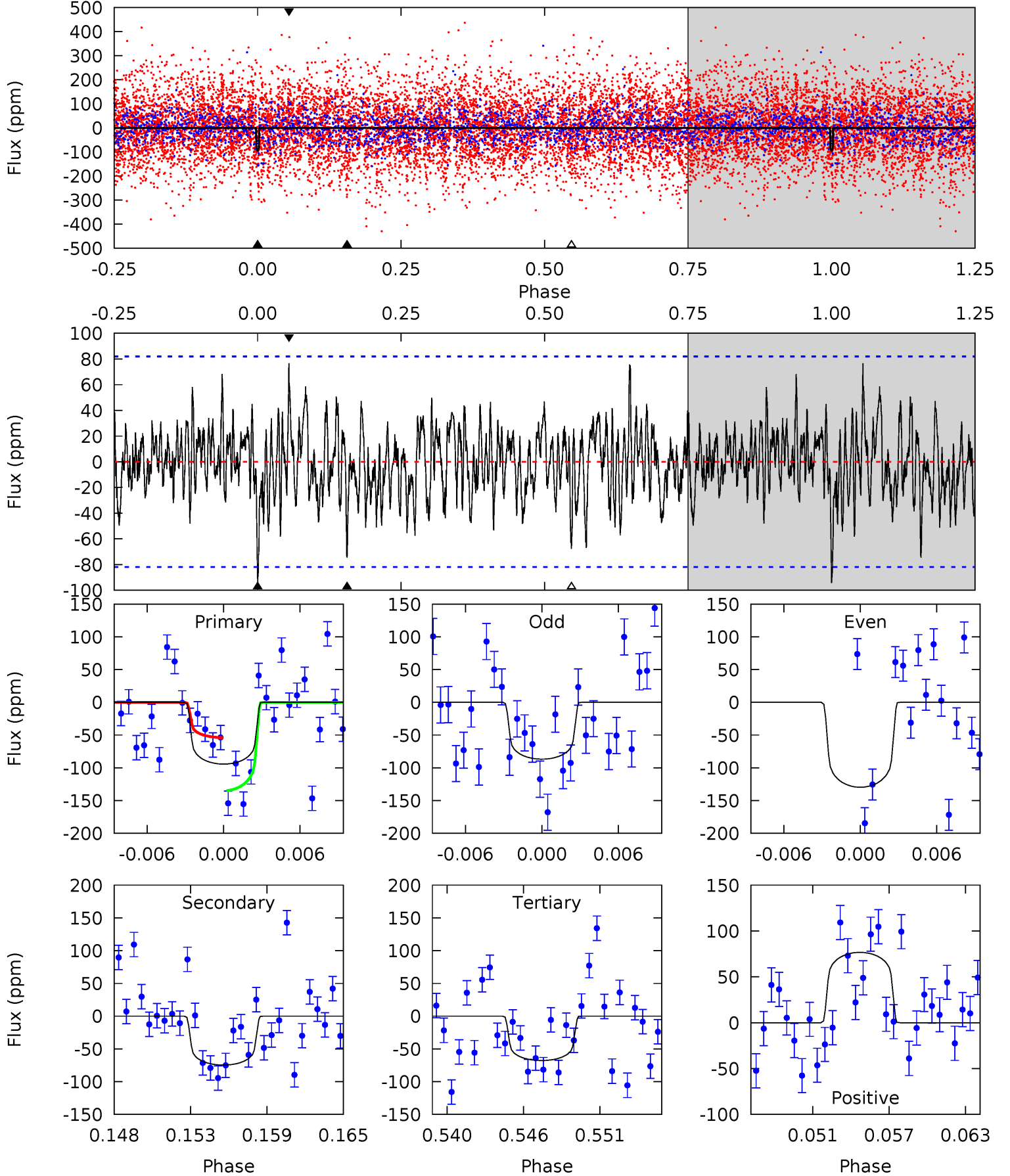
TCE 008840117-07 P= 61.110811 Days $T_0=163.204243$ (BKJD)



DV Model-Shift Uniqueness Test

008840117-07, P = 61.108707 Days, E = 102.136885 Days

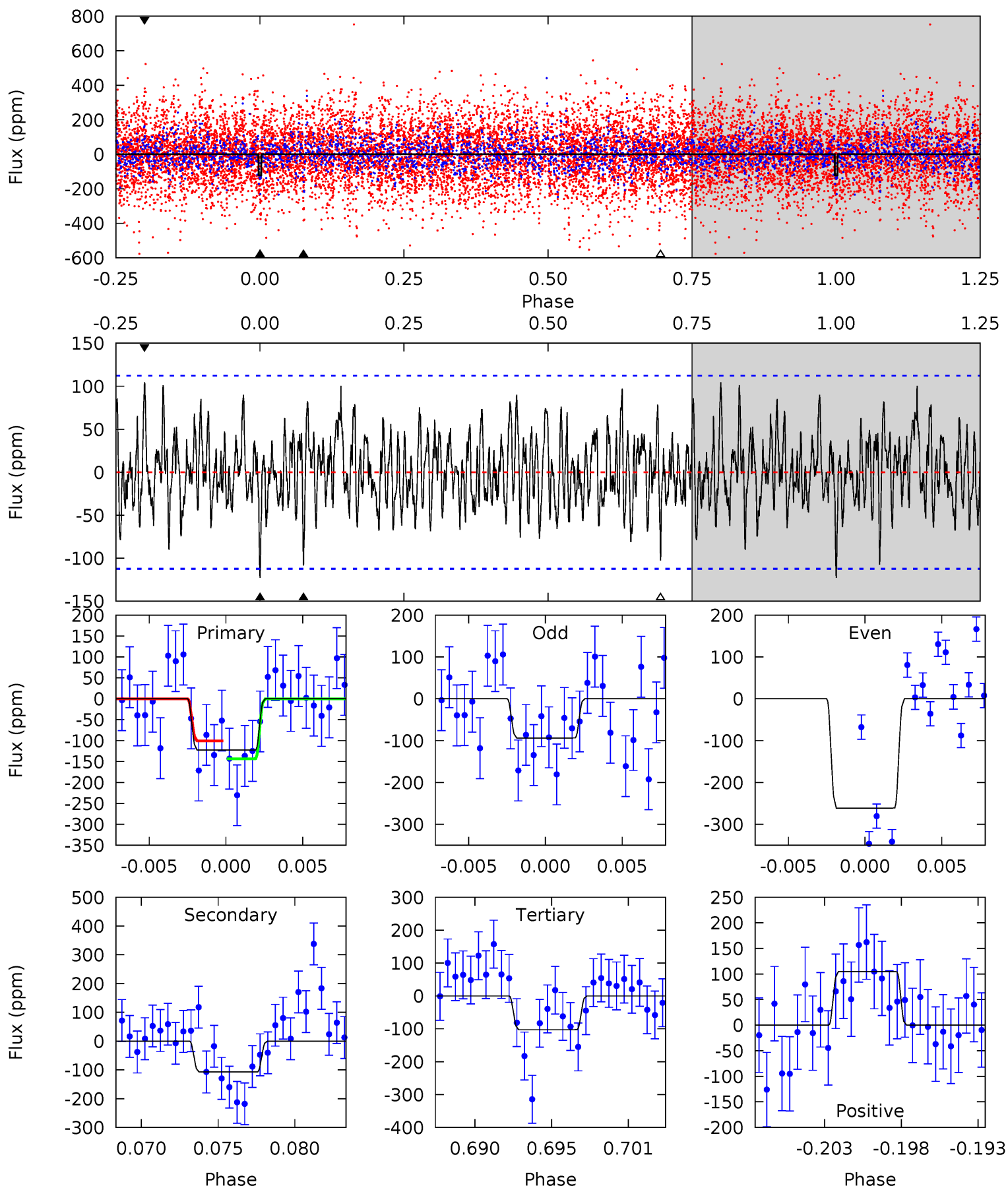
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.92	4.68	4.25	4.81	5.13	2.77	1.47	1.67	1.11	0.44	-0.12	1.01	0.68	0.45	2.53



Alt Model-Shift Uniqueness Test

008840117-07, P = 61.110811 Days, E = 102.093432 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.62	4.91	4.70	4.79	5.15	2.79	1.57	0.92	0.83	0.21	0.12	2.74	1.03	0.46	0.98



Stellar Parameters For KIC 008840117

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6315^{+176}_{-176}	$3.811^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.410^{+0.447}_{-0.830}$	$1.371^{+0.239}_{-0.263}$	$0.138^{+0.270}_{-0.041}$
	+3%/-3%	+8%/-3%	+300%/-250%	+19%/-34%	+17%/-19%	+196%/-30%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008840117-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-75 ± 16	$2.75^{+1.70}_{-1.38}$	1022^{+59}_{-96}	5533^{+2443}_{-964}	606^{+1863}_{-371}
Alt.	-107 ± 22	$2.82^{+1.66}_{-1.35}$	1025^{+60}_{-91}	5941^{+2483}_{-1062}	834^{+2070}_{-512}

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

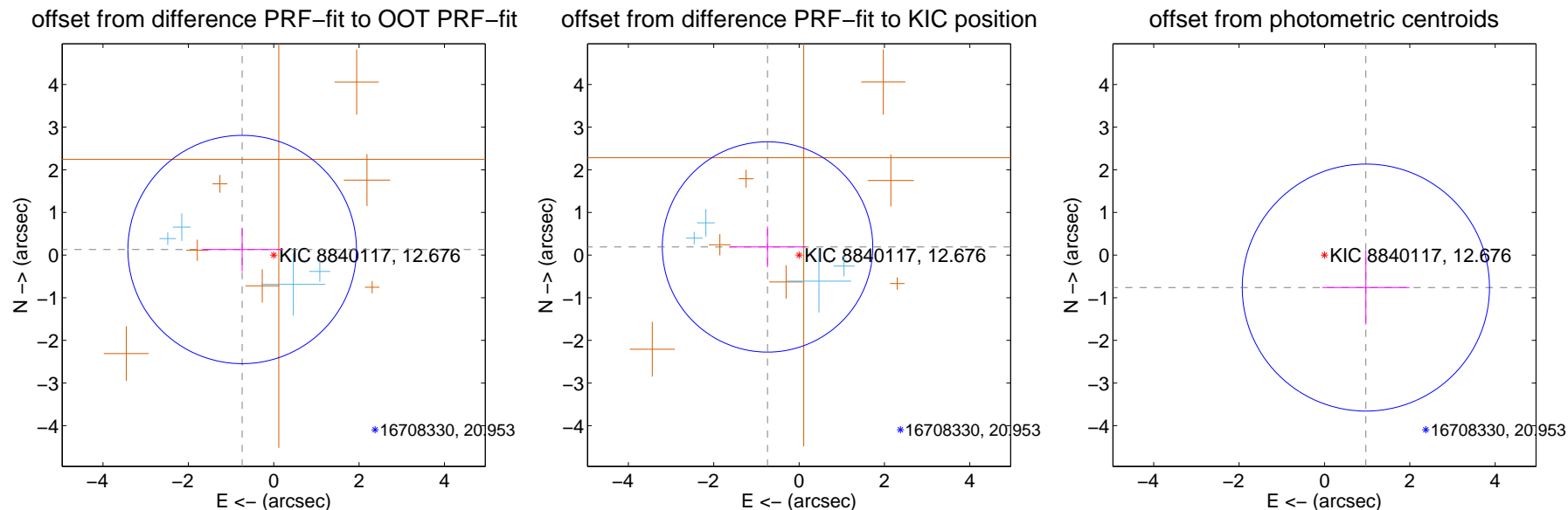
DV Centroid Data

Supplemental centroid analysis for 008840117-07. Kepler magnitude: 12.68. Transit SNR 6.49

There are 4 quarters with good PRF difference image offsets

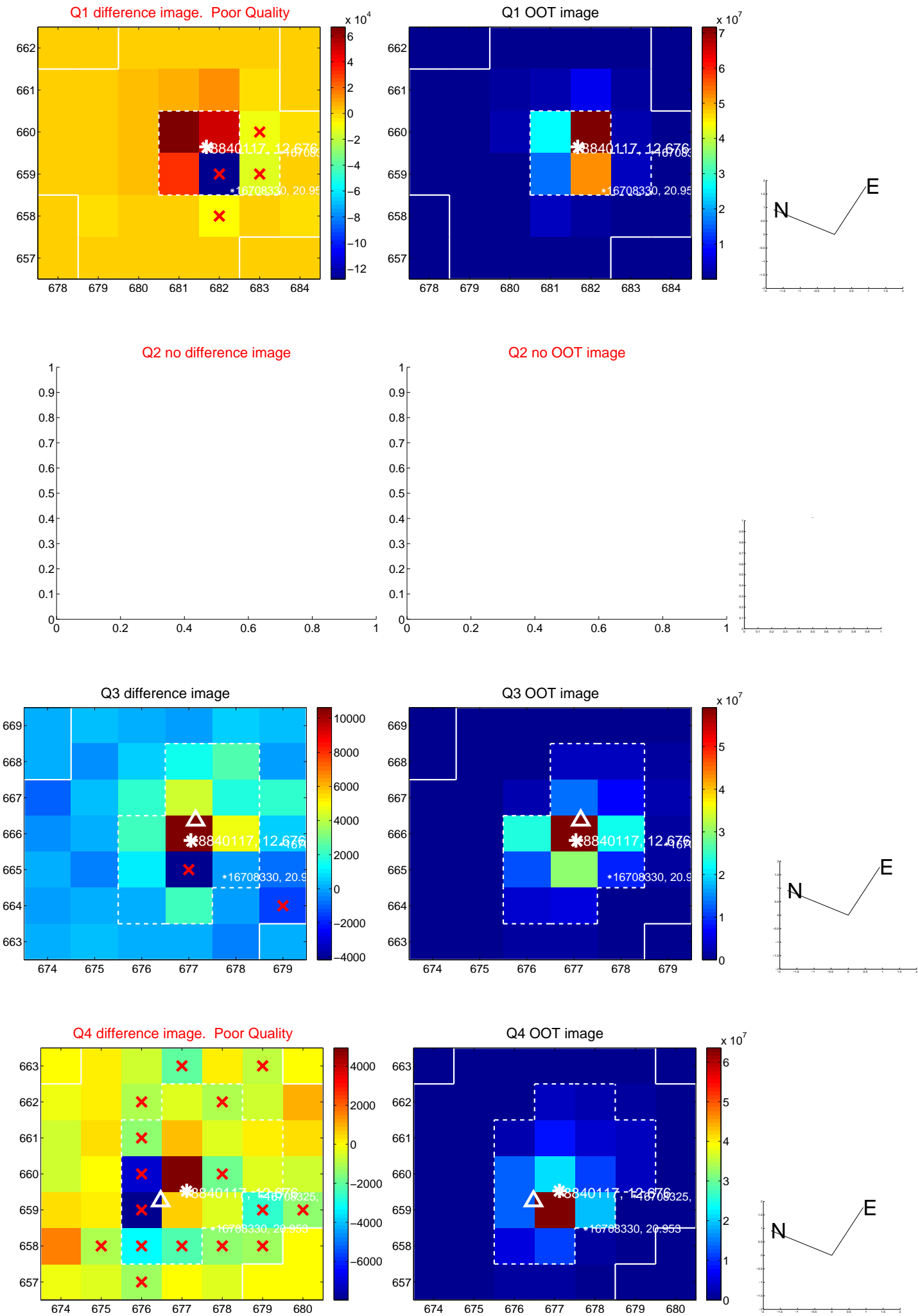
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.750 ± 0.892	0.84	0.739 ± 0.947	0.131 ± 0.510
PRF-fit source offset from KIC position	0.763 ± 0.822	0.93	0.739 ± 0.899	0.191 ± 0.479
photometric centroid source offset	1.23 ± 0.97	1.28	-0.97 ± 1.02	-0.76 ± 0.87

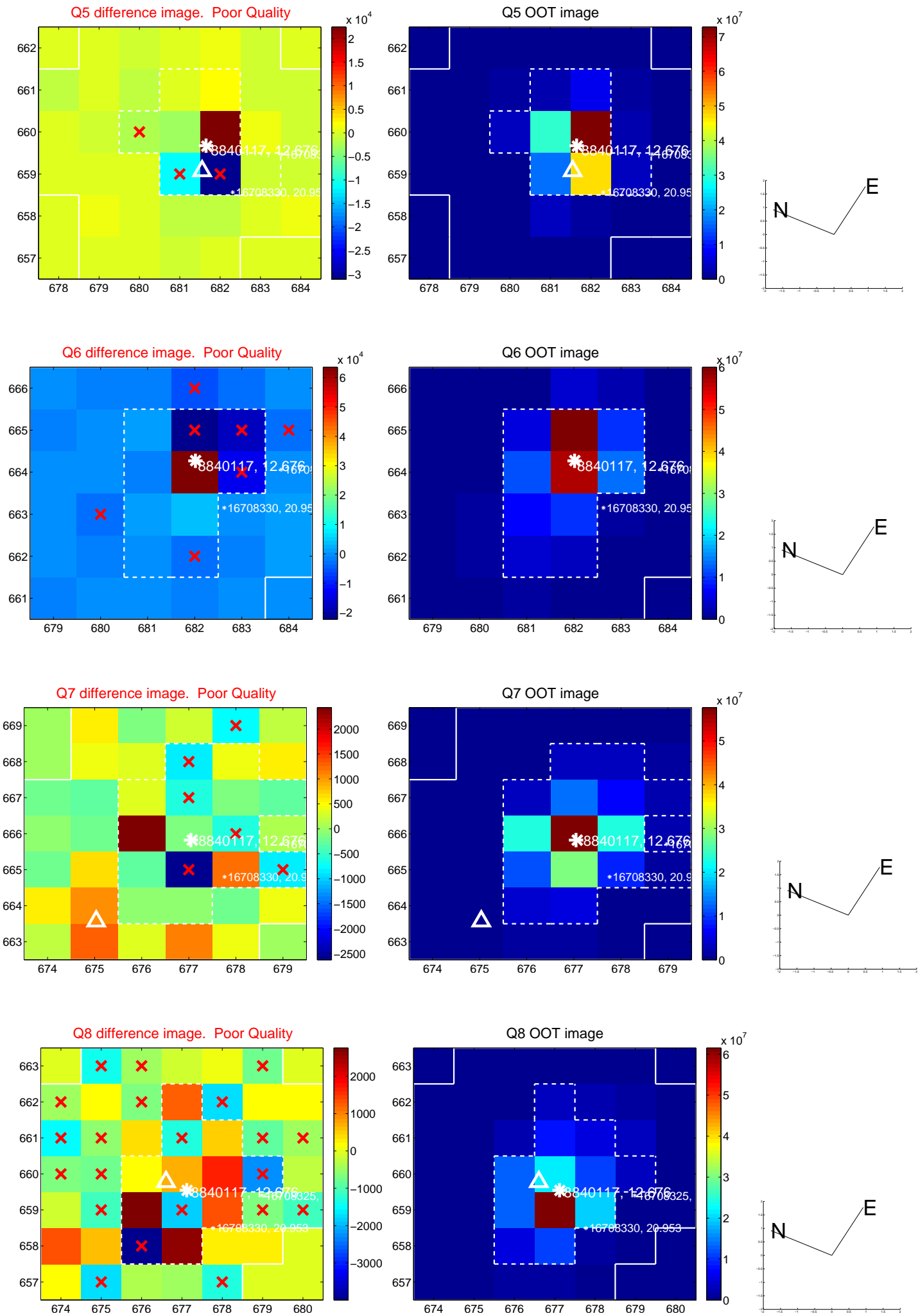


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

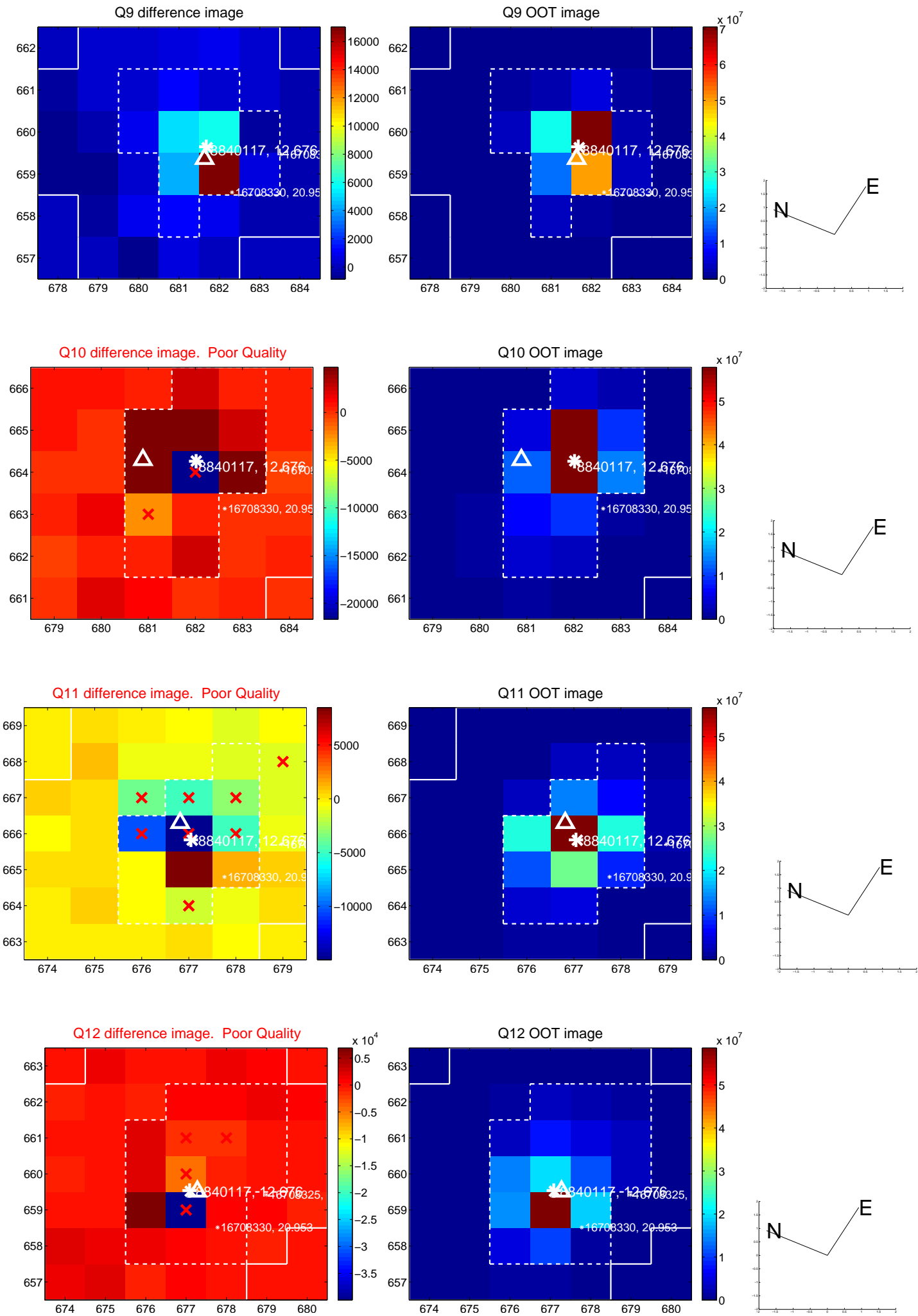
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



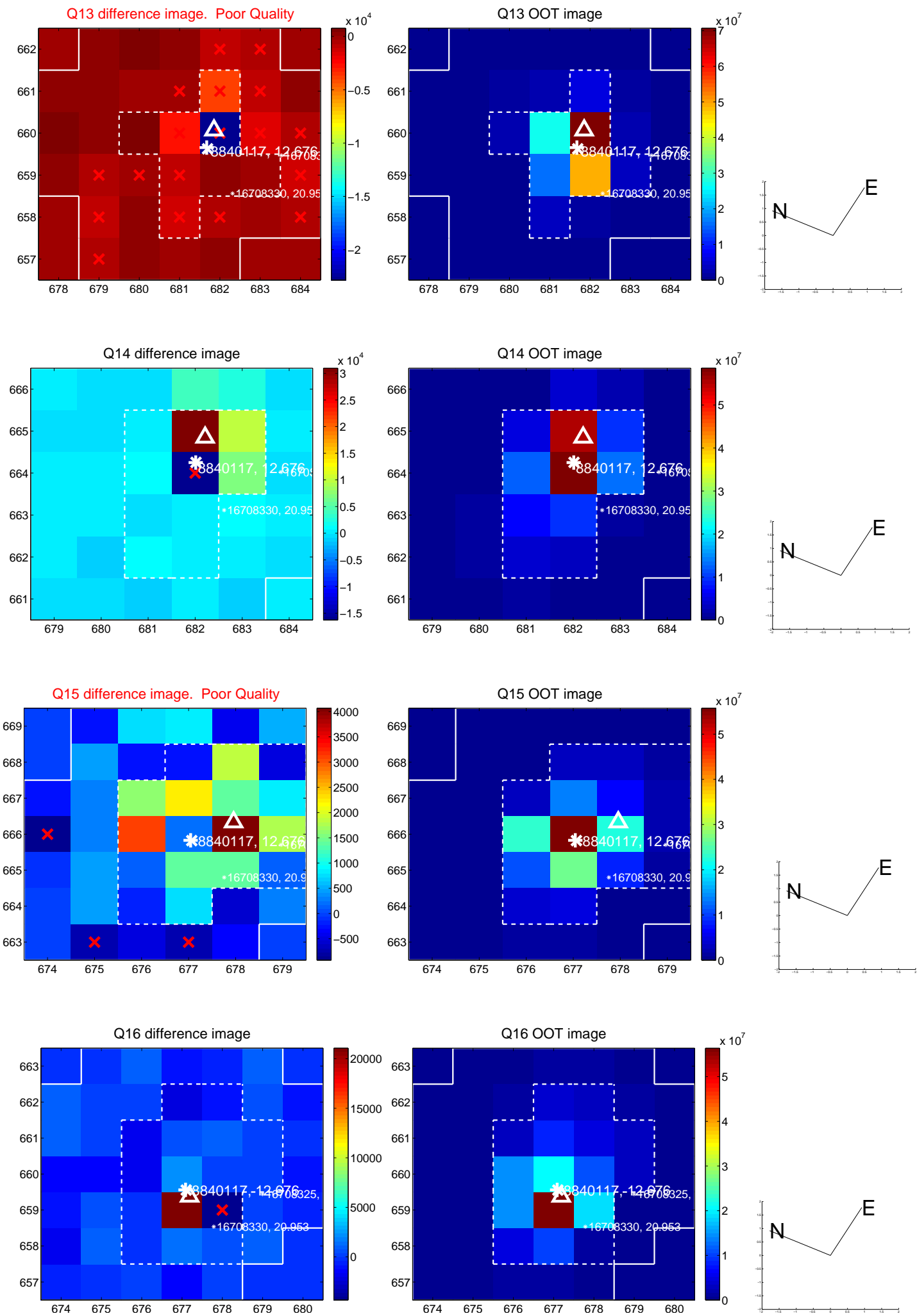
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



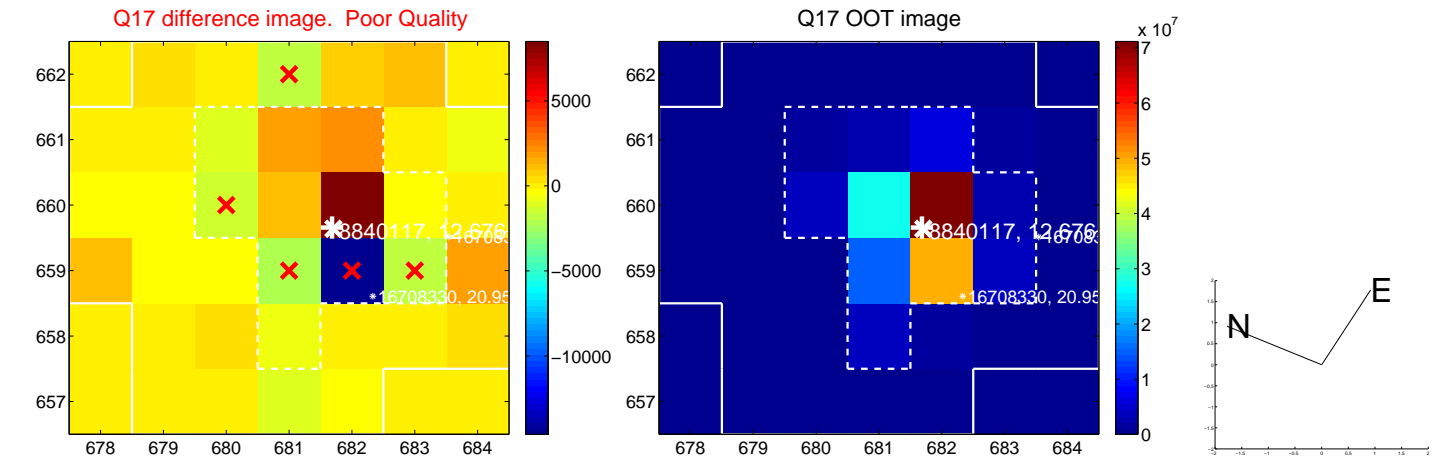
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



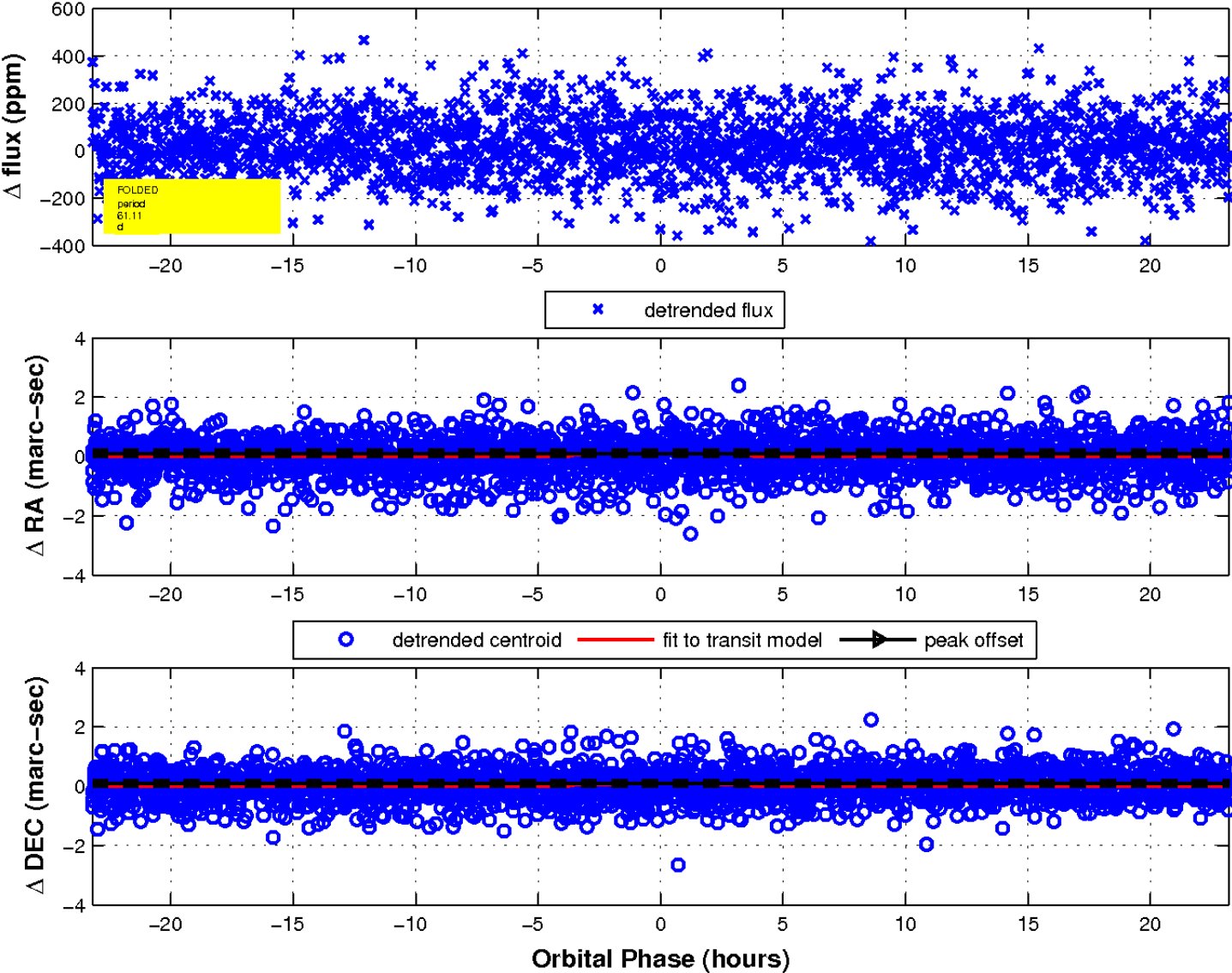
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

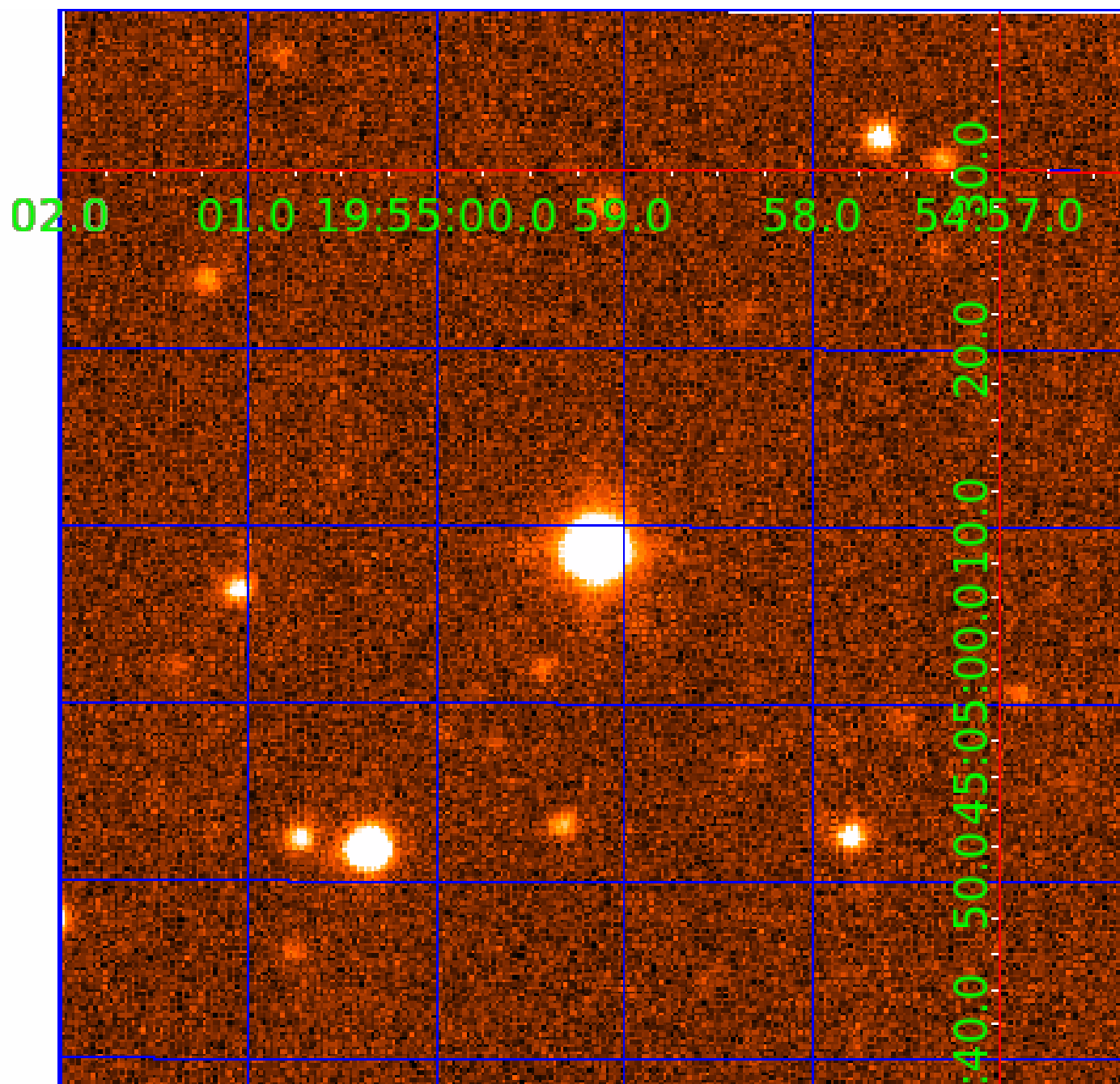


fluxWeightedCentroids, Planet 7 of 8



UKIRT Image

Declination



KIC 008840117

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})
008840117-01	OBS	No	1.702570	132.507027	138.6	3.000	11.4	-1.0	2.41	6315	2.85	8608.47
008840117-02	OBS	No	1.702833	132.129333	25.7	3.908	8.9	9.2	2.41	6315	2.21	8606.69
008840117-03	OBS	No	2.069754	132.522608	8.2	11.983	8.6	4.6	2.41	6315	0.80	6635.00
008840117-06	OBS	No	19.303168	148.719464	79.1	6.605	9.0	8.5	2.41	6315	2.44	337.98
008840117-07	OBS	No	61.108707	163.245592	102.4	7.741	8.5	6.5	2.41	6315	2.85	72.71
008840117-08	OBS	No	76.794060	139.134112	209.7	2.000	7.1	-1.0	2.41	6315	3.51	53.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008840117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS
008840117-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
008840117-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008840117-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008840117-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008840117-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

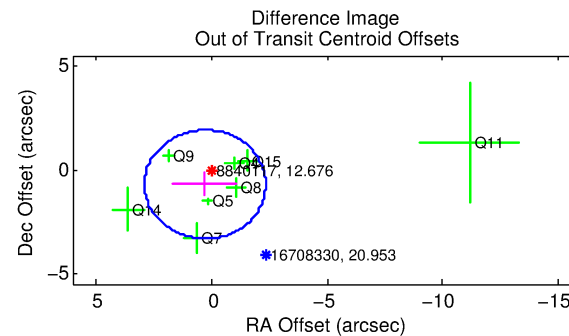
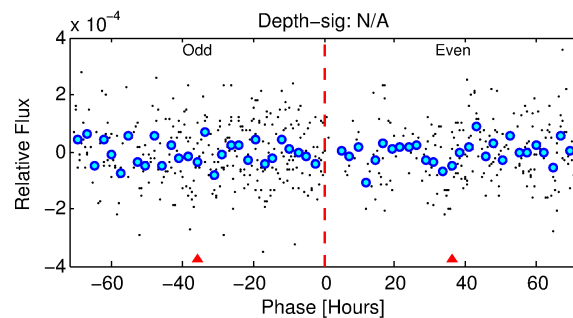
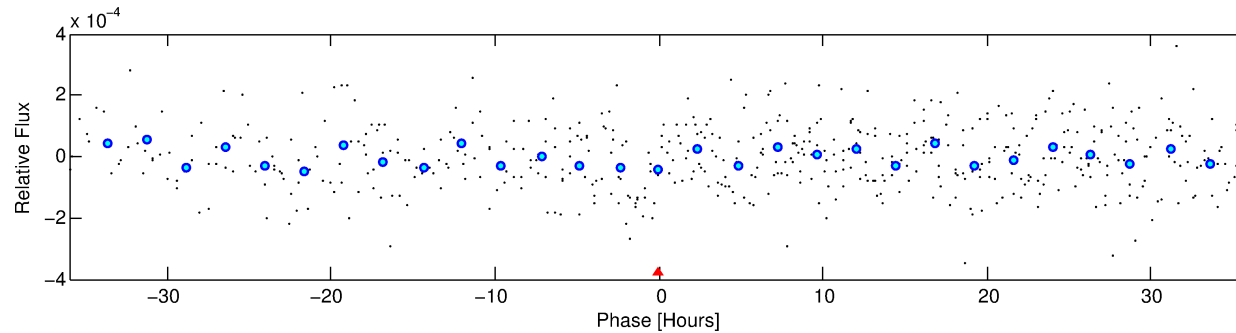
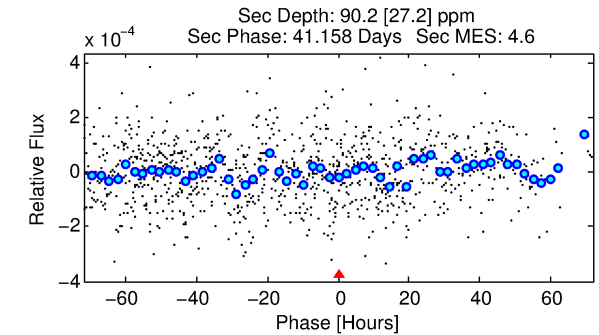
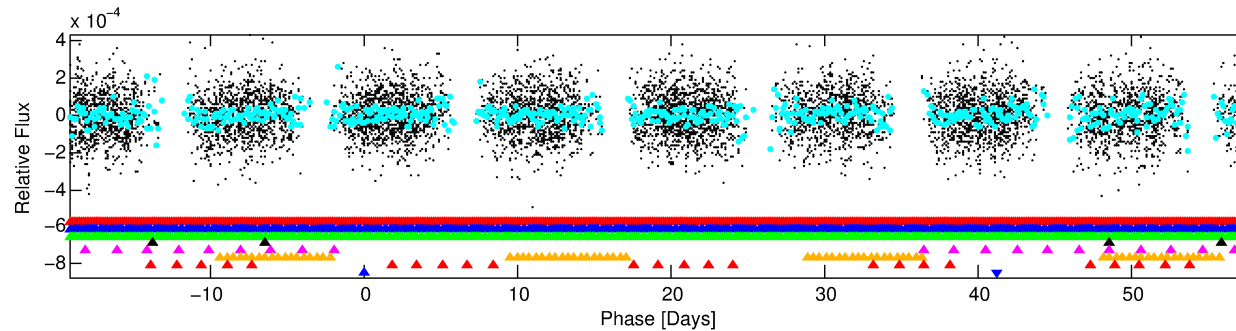
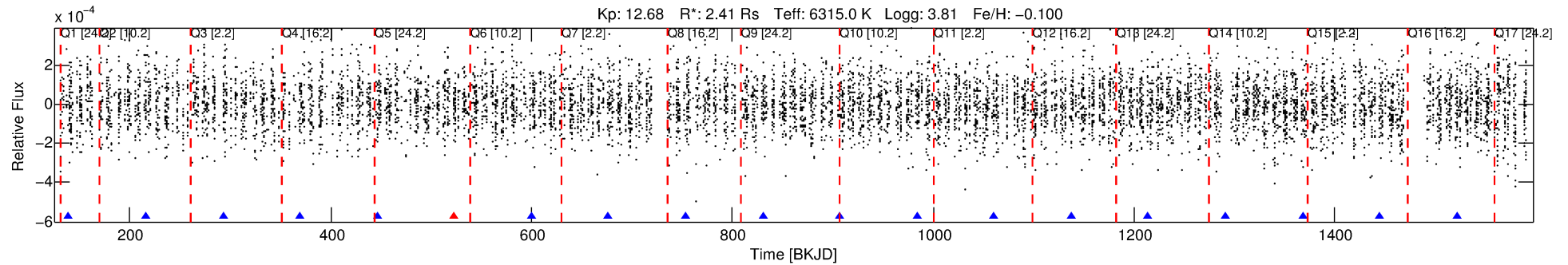
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008840117-08

No Significant Match Found

DV One-Page Summary

KIC: 8840117 Candidate: 8 of 8 Period: 76.794 d



TPS TCE Results:

Period = 76.79406 d
Epoch = 139.1341 BKJD

DV fit results are unavailable

DV Diagnostic Results:

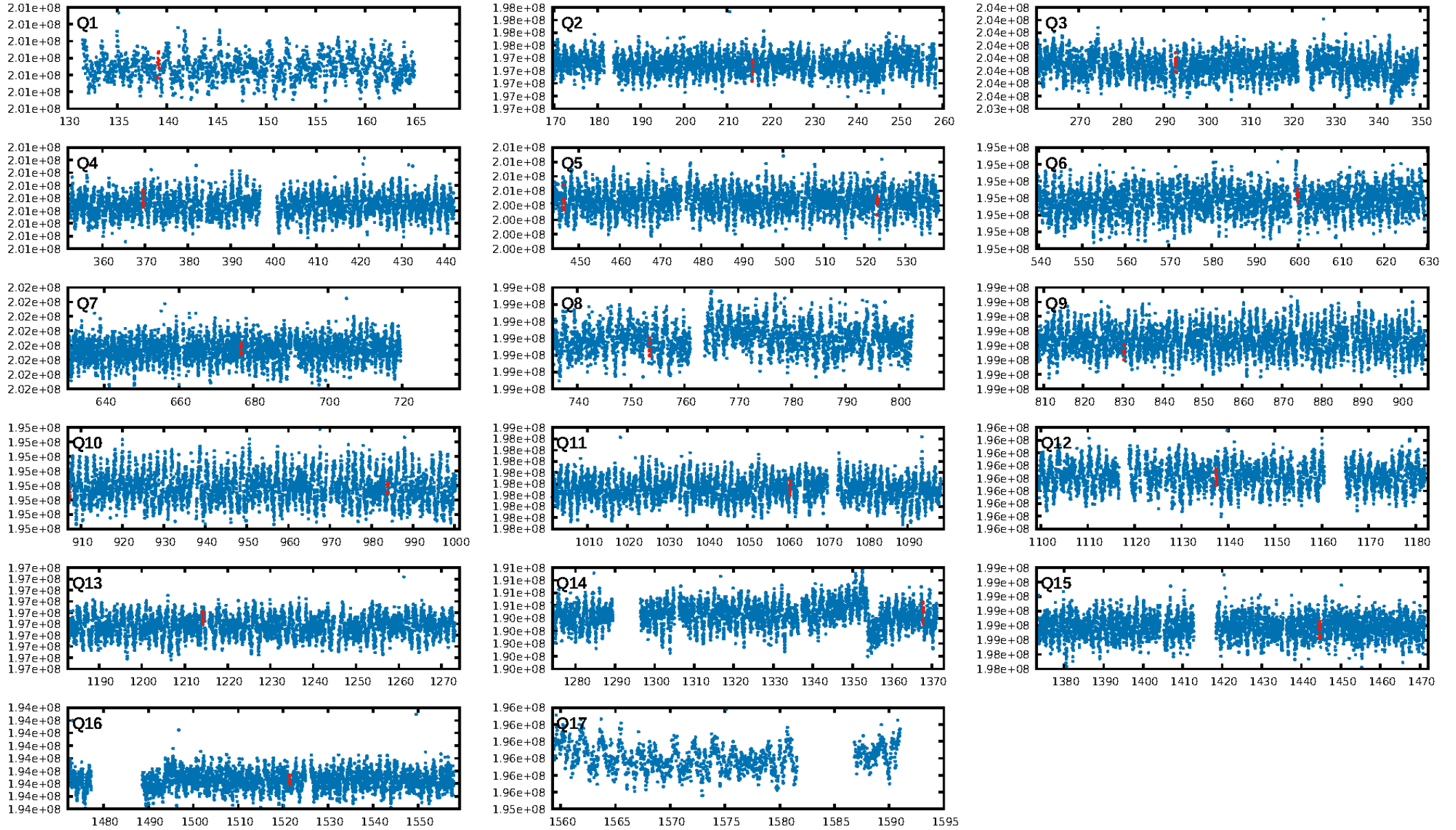
ShortPeriod-sig: 100.0% [8.57 σ]
LongPeriod-sig: 100.0% [1508.15 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.90 [9/10]
GhostDiagnostic-chr: -0.4343

Centroid-sig: 0.1%
Centroid-so: 1.243 arcsec [2.05 σ]
OotOffset-rm: 0.754 arcsec [0.86 σ]
KicOffset-rm: 0.686 arcsec [0.80 σ]
OotOffset-st: 1/3/2/2 [8]
KicOffset-st: 1/3/2/2 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.00 [0/13]

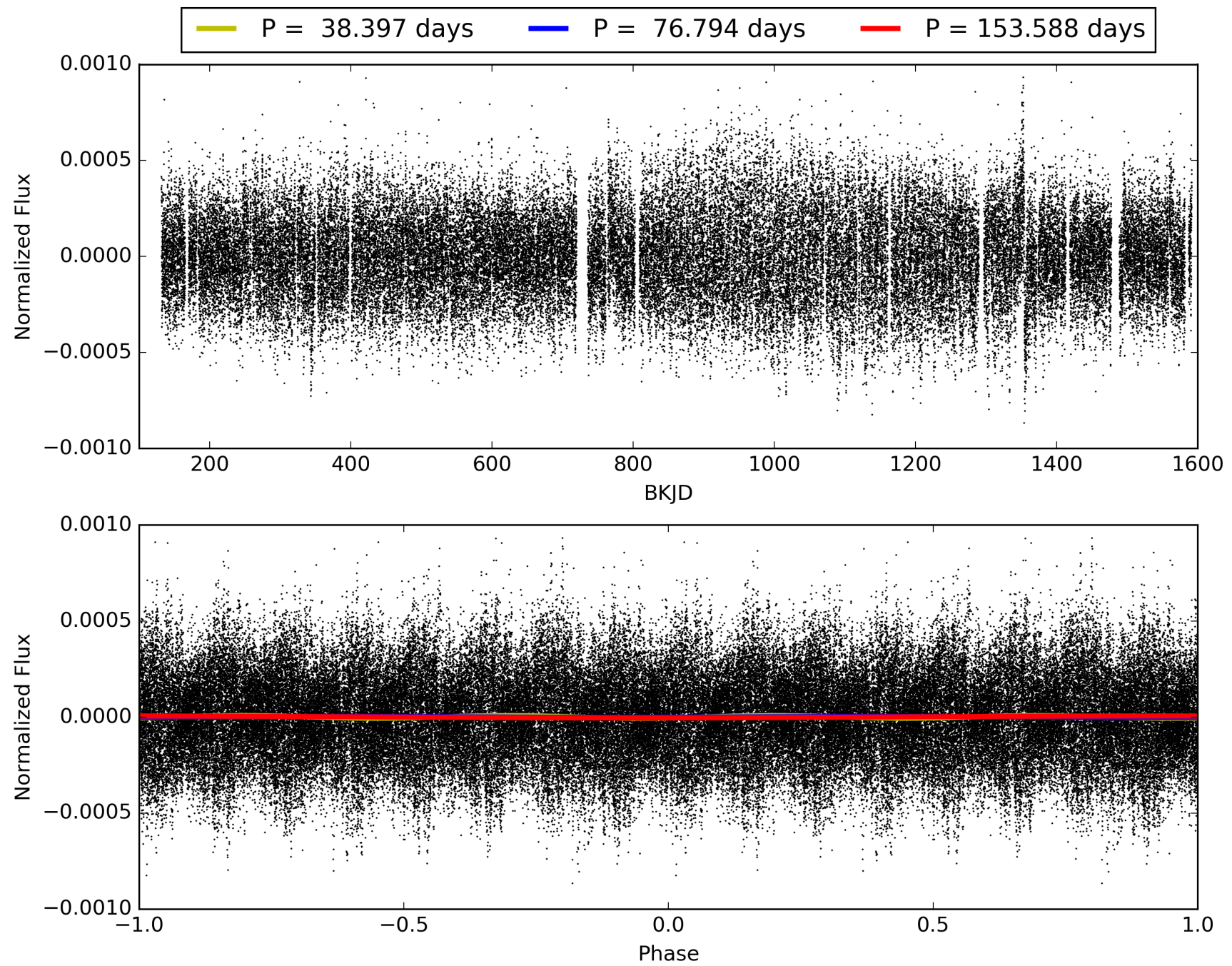
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:31:08 Z

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

TCE 008840117-08, PDC Light Curves

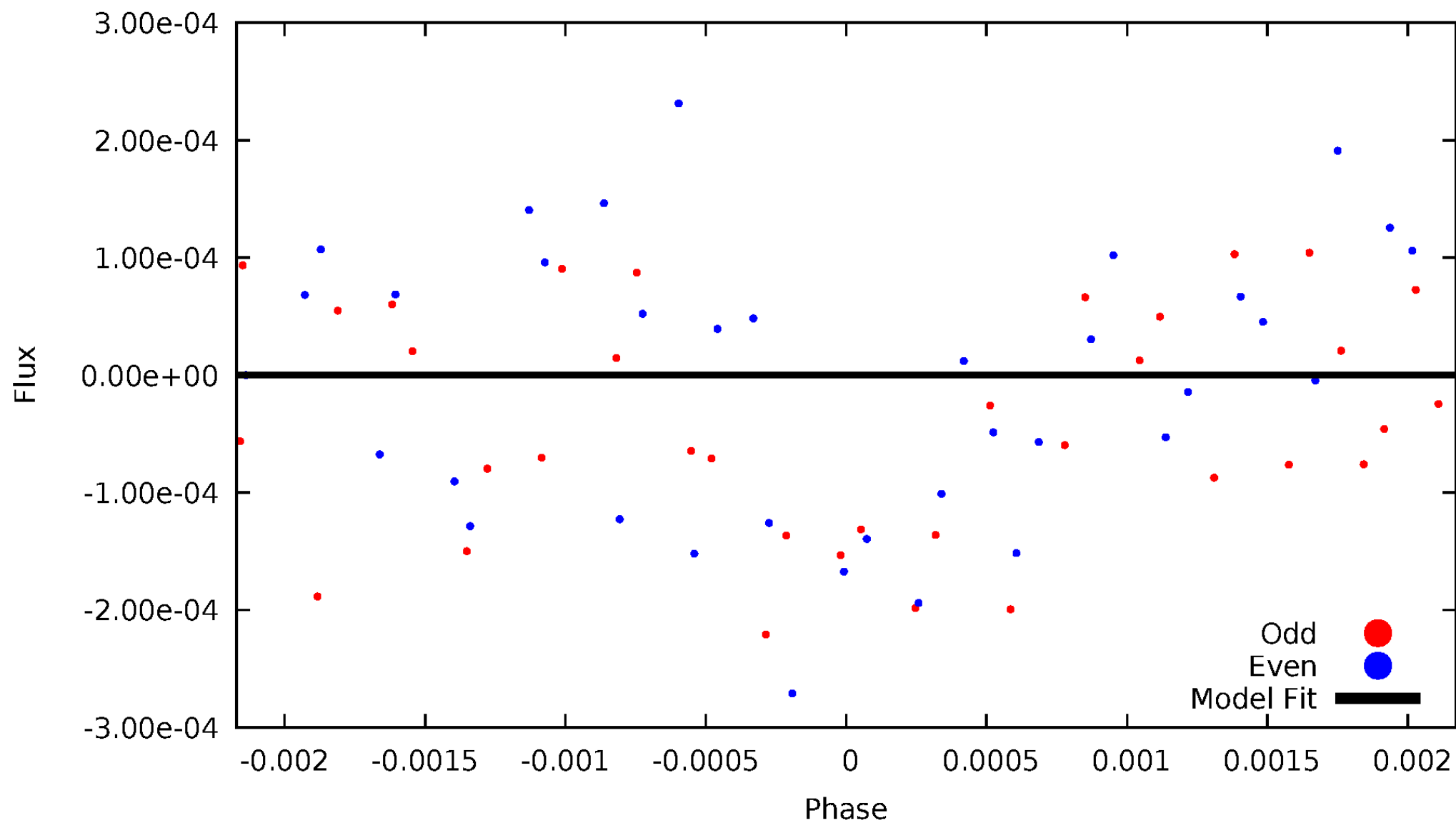


TCE 008840117-08



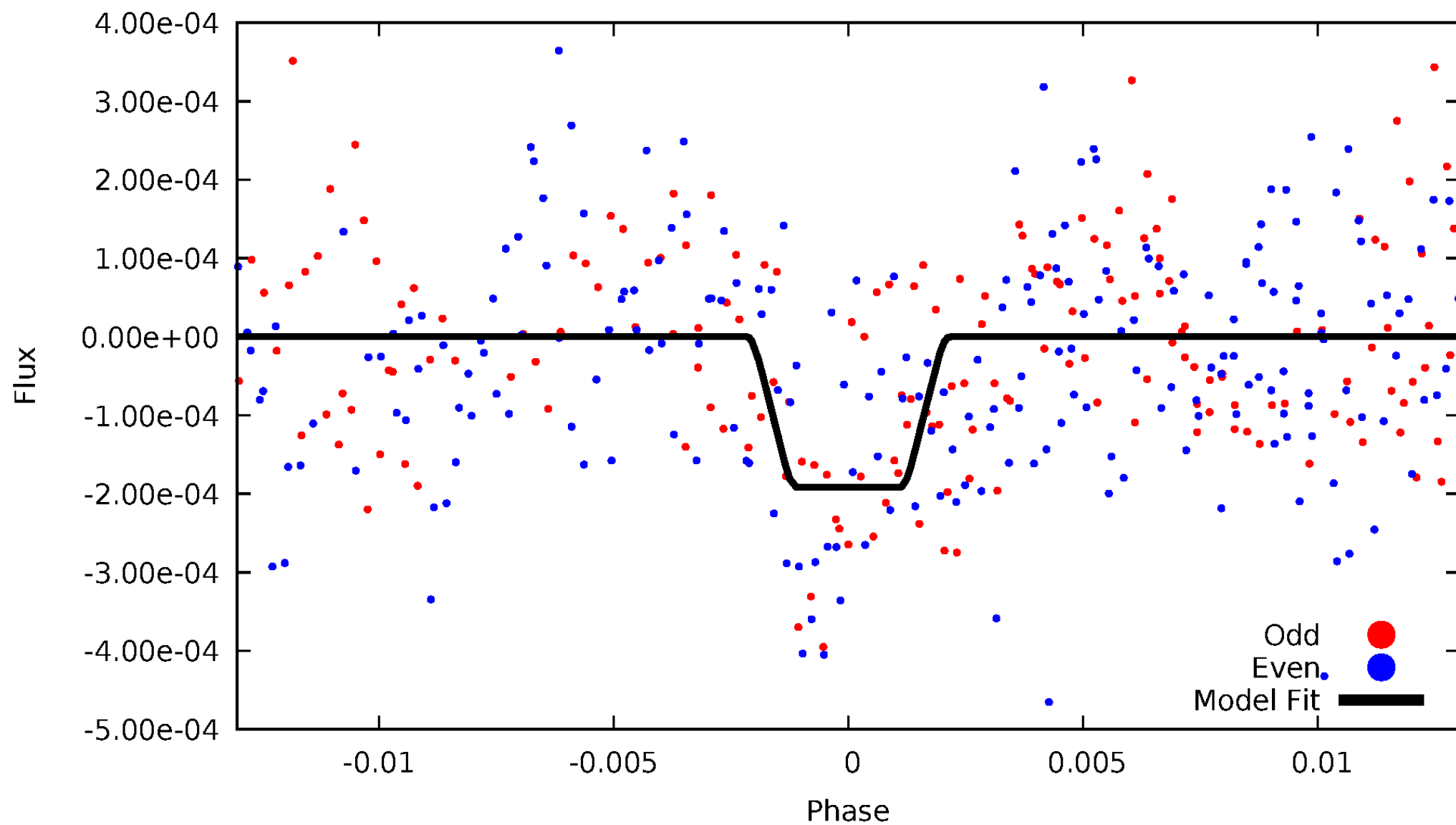
DV Odd/Even

TCE 008840117-08



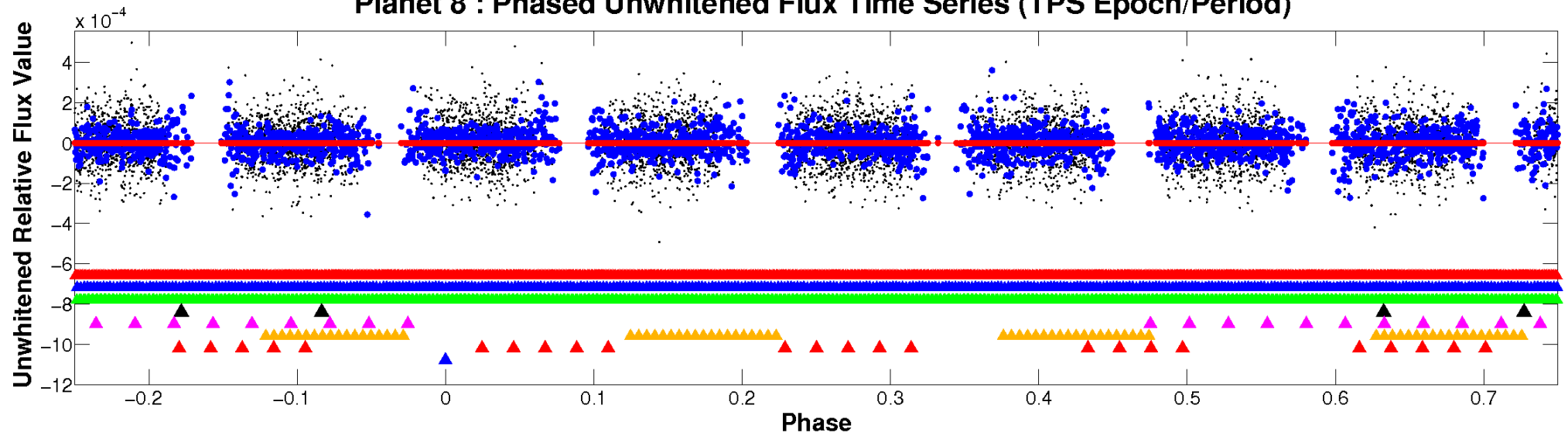
ALT Odd/Even

TCE 008840117-08

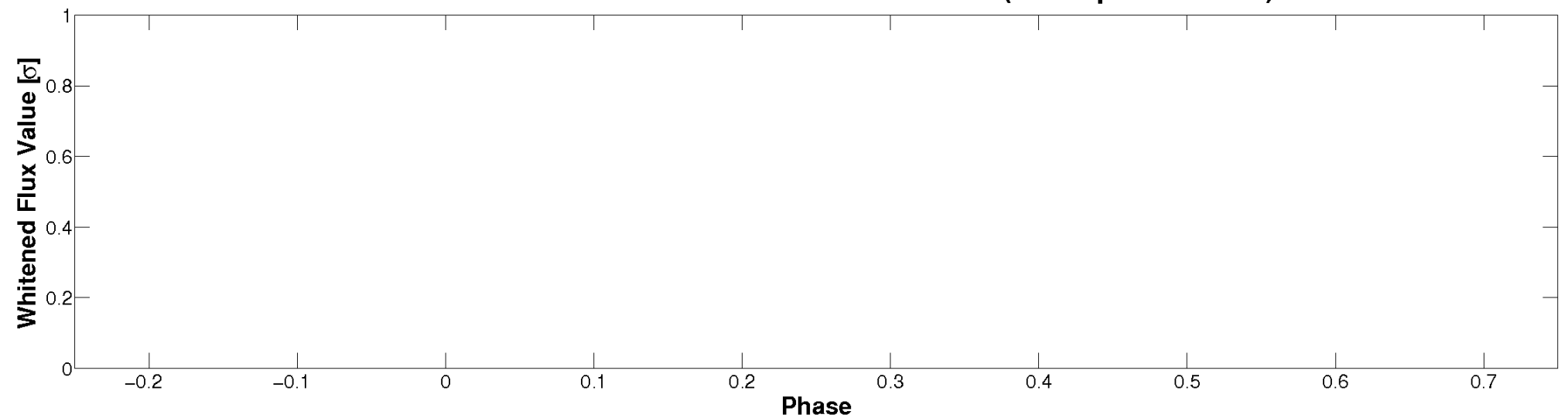


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

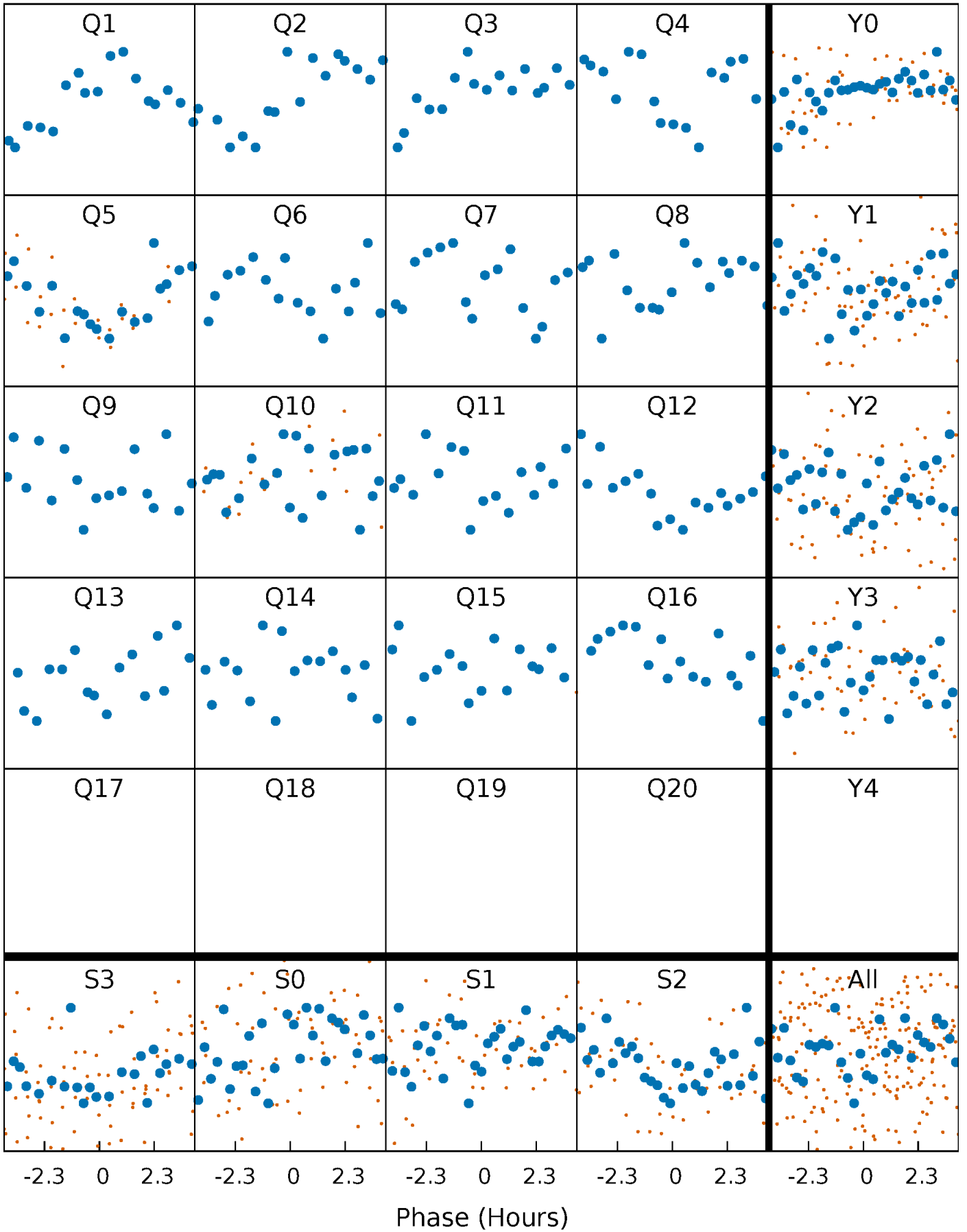


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



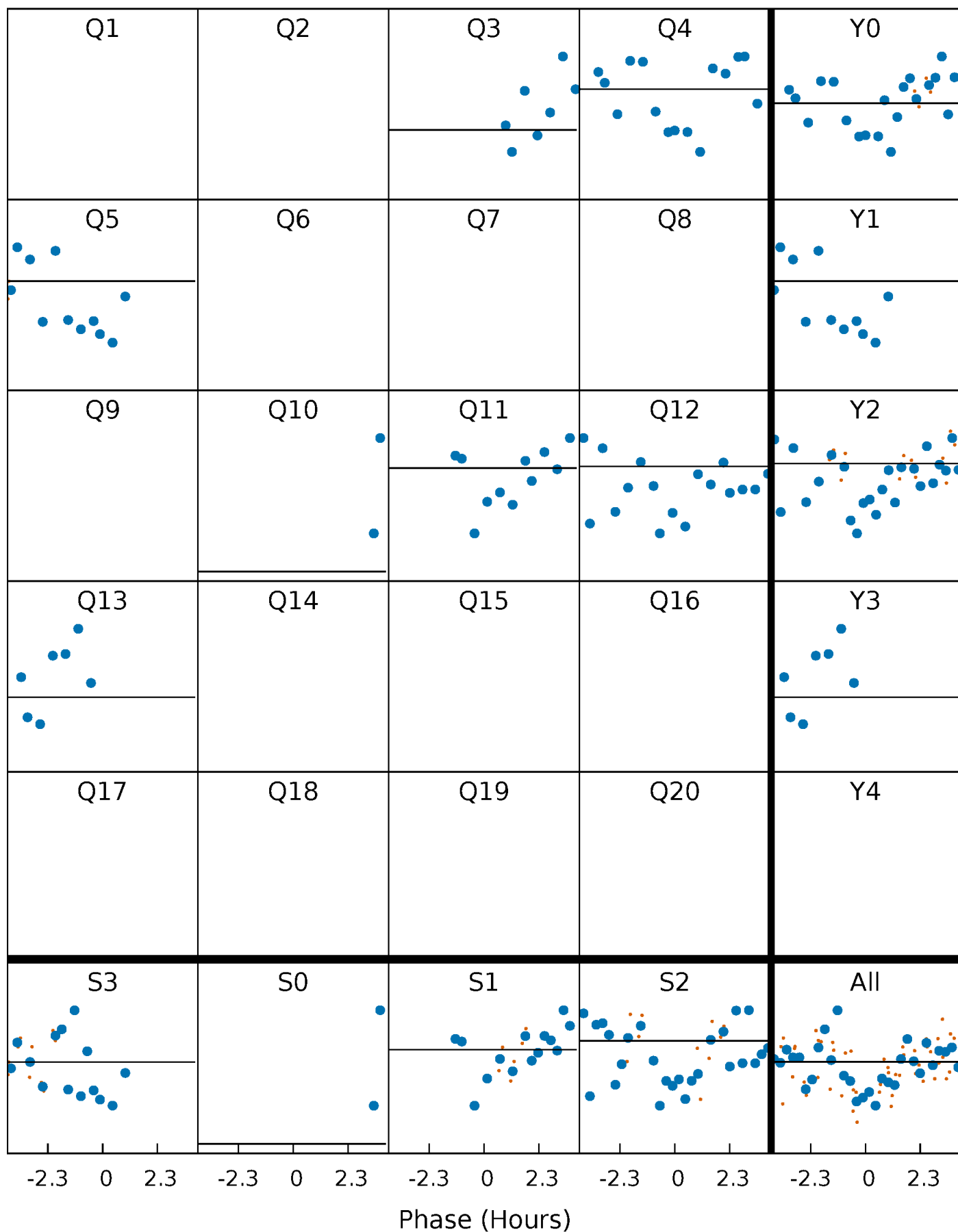
PDC Quarter-Phased Transit Curves

TCE 008840117-08 P= 76.794060 Days $T_0=139.134112$ (BKJD)



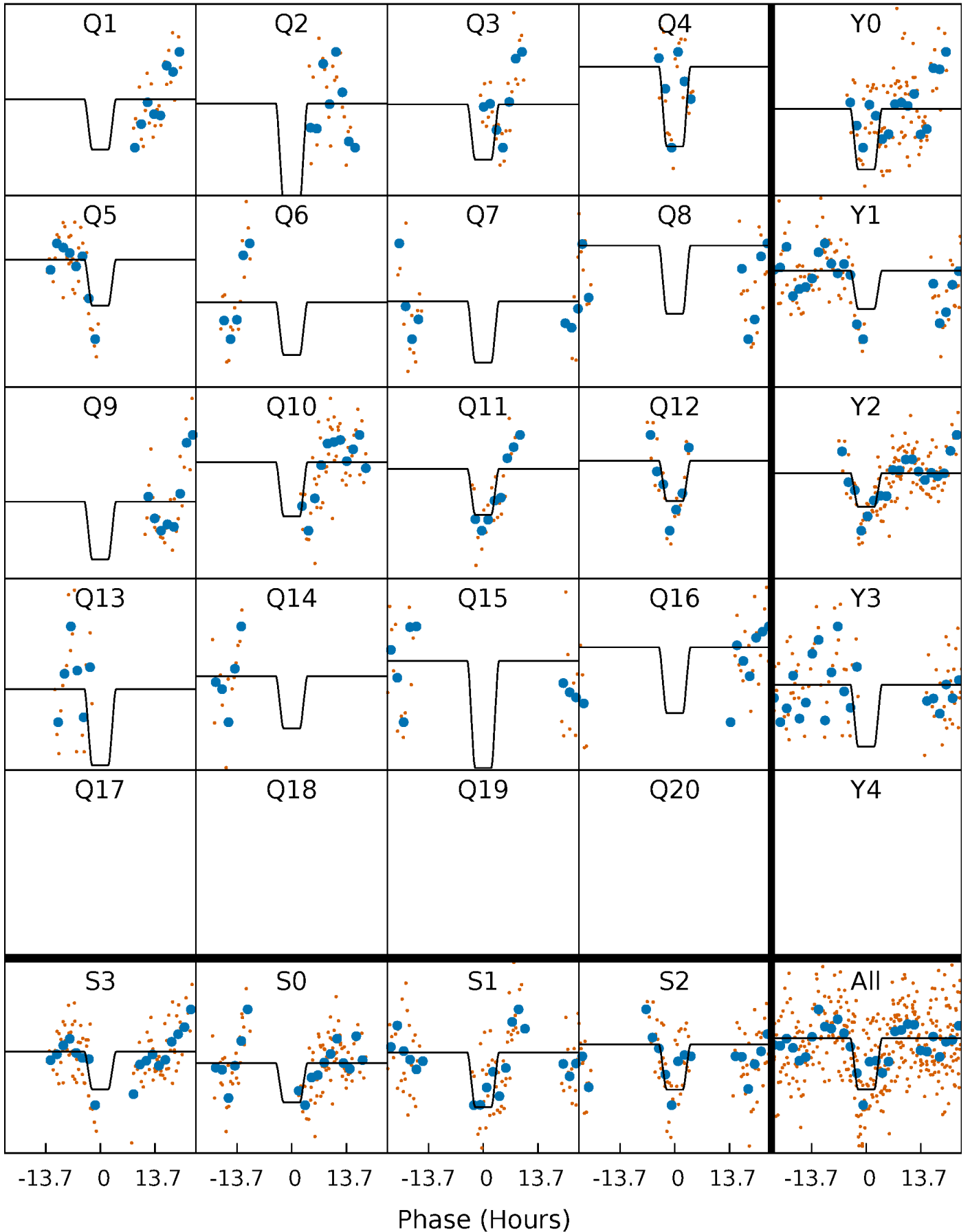
DV Quarter-Phased Transit Curves

TCE 008840117-08 $P = 76.794060$ Days $T_0 = 139.134112$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

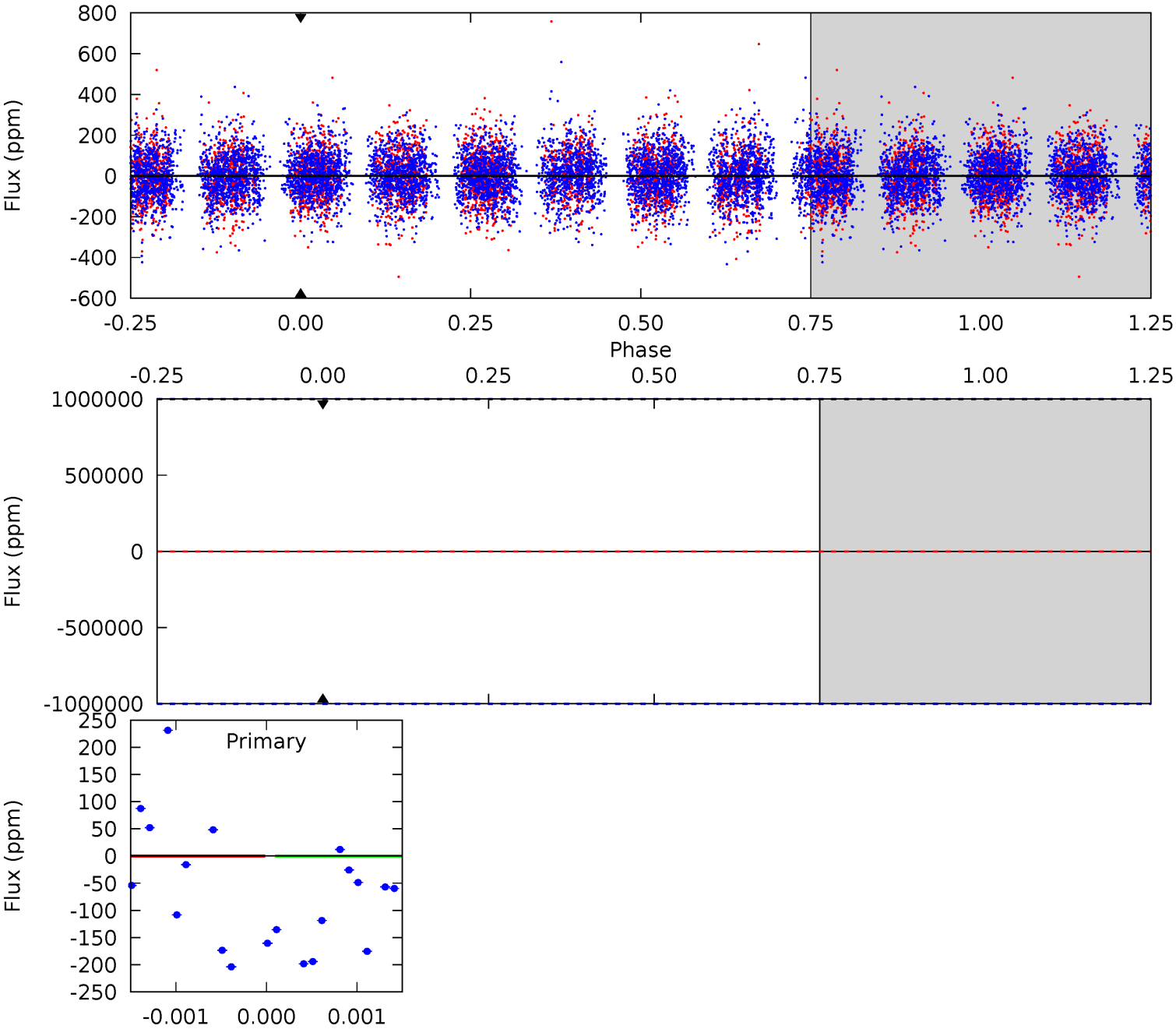
TCE 008840117-08 P= 76.794060 Days $T_0=139.193853$ (BKJD)



DV Model-Shift Uniqueness Test

008840117-08, P = 76.794060 Days, E = 62.340052 Days

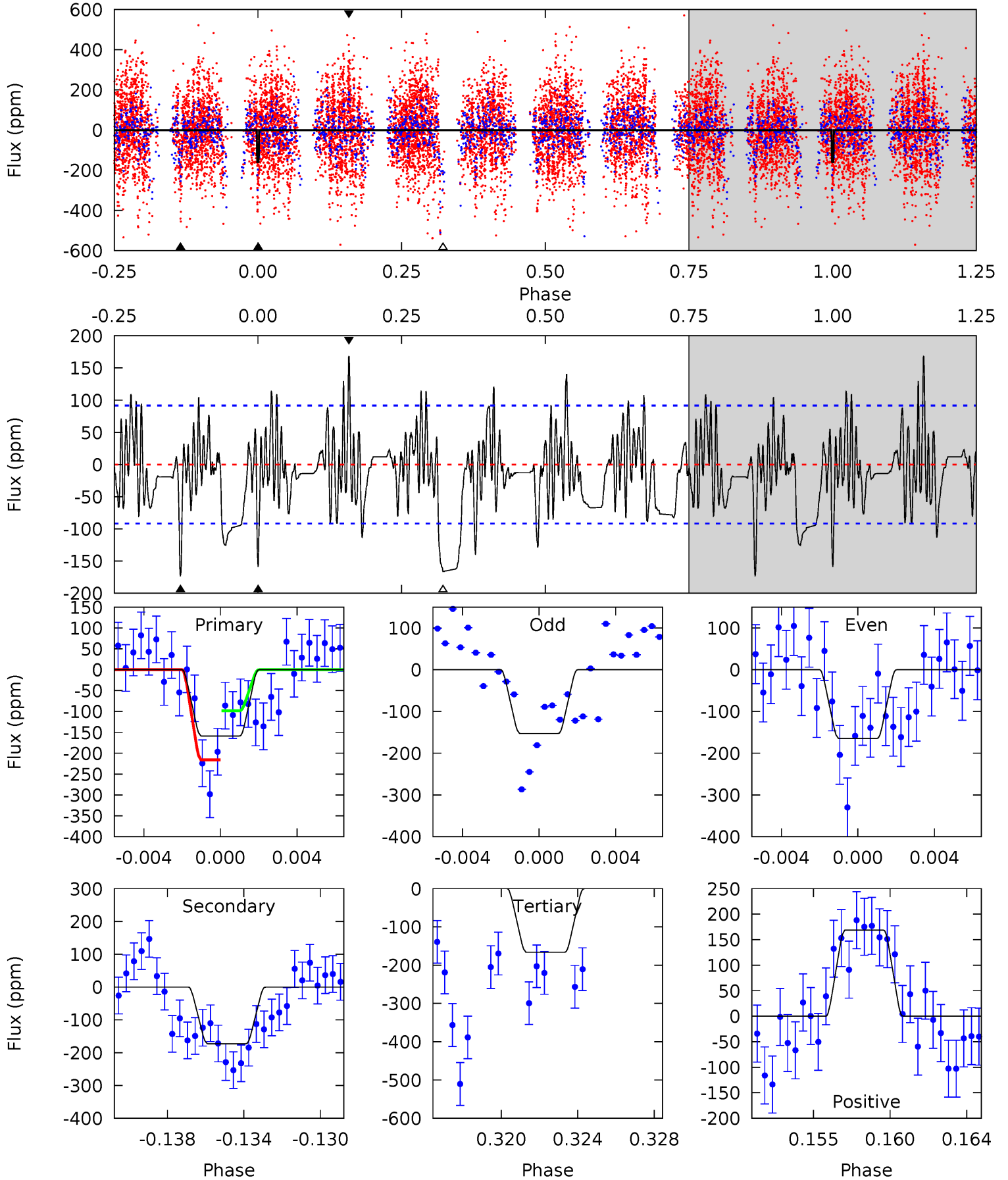
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008840117-08, P = 76.794060 Days, E = 62.399793 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.98	9.76	9.41	9.54	5.19	2.85	2.84	-0.43	-0.56	0.35	0.22	0.34	0.74	0.49	3.34



Stellar Parameters For KIC 008840117

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6315^{+176}_{-176}	$3.811^{+0.292}_{-0.097}$	$-0.100^{+0.300}_{-0.250}$	$2.410^{+0.447}_{-0.830}$	$1.371^{+0.239}_{-0.263}$	$0.138^{+0.270}_{-0.041}$
	+3%/-3%	+8%/-3%	+300%/-250%	+19%/-34%	+17%/-19%	+196%/-30%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008840117-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$17.60^{+20.94}_{-12.32}$	945^{+62}_{-80}	-5639^{+34404}_{-20063}	$-715.675^{+51752.605}_{-44775.371}$
Alt.	-173 ± 18	$17.99^{+19.02}_{-12.43}$	946^{+60}_{-83}	3232^{+1650}_{-566}	45^{+468}_{-34}

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

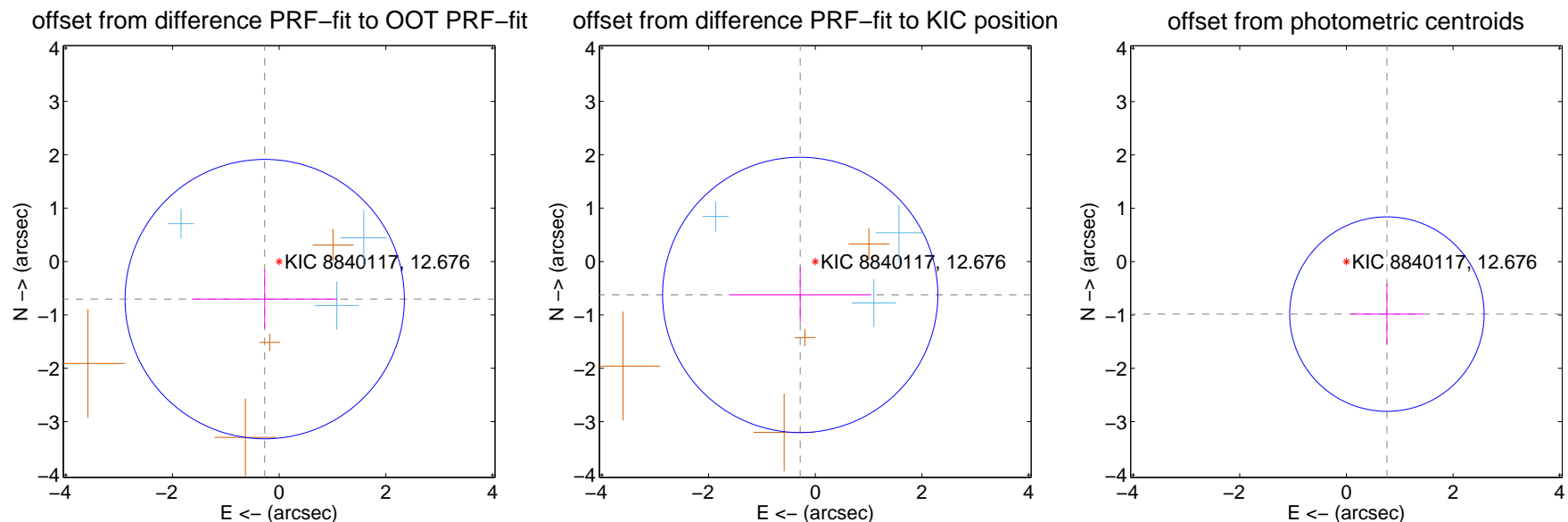
DV Centroid Data

Supplemental centroid analysis for 008840117-08. Kepler magnitude: 12.68. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

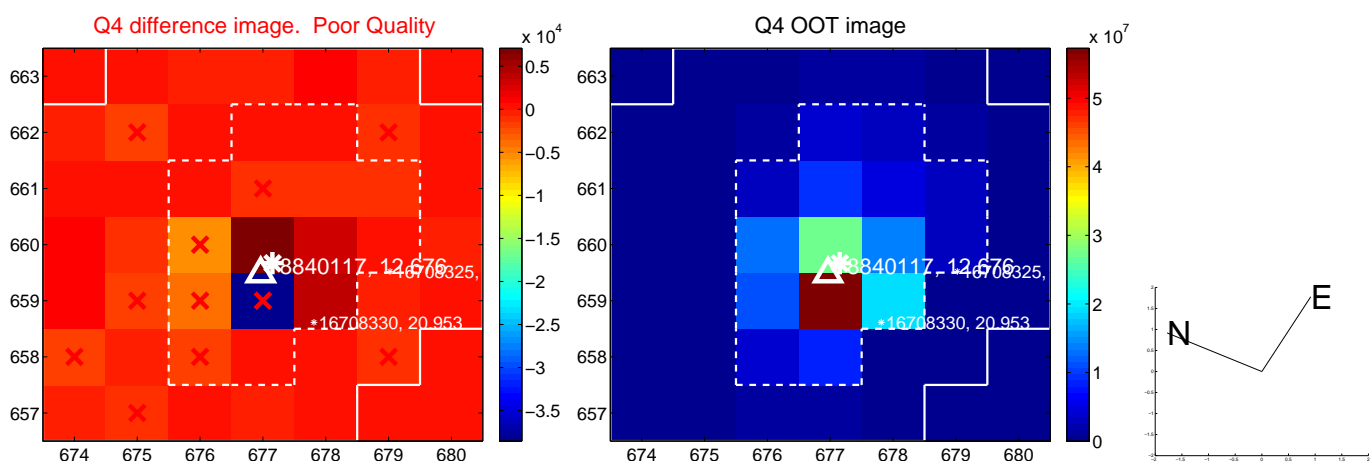
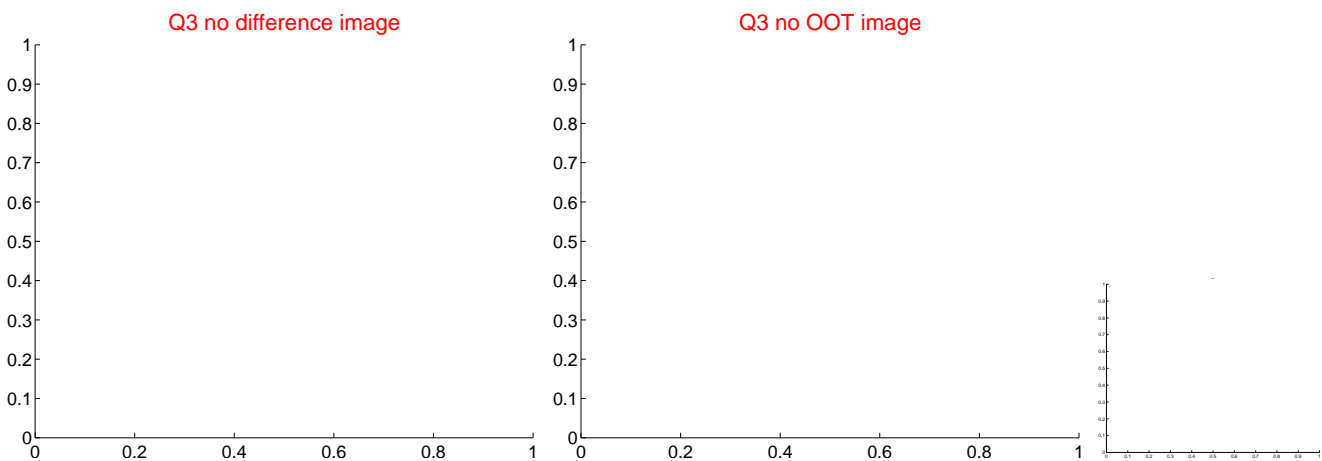
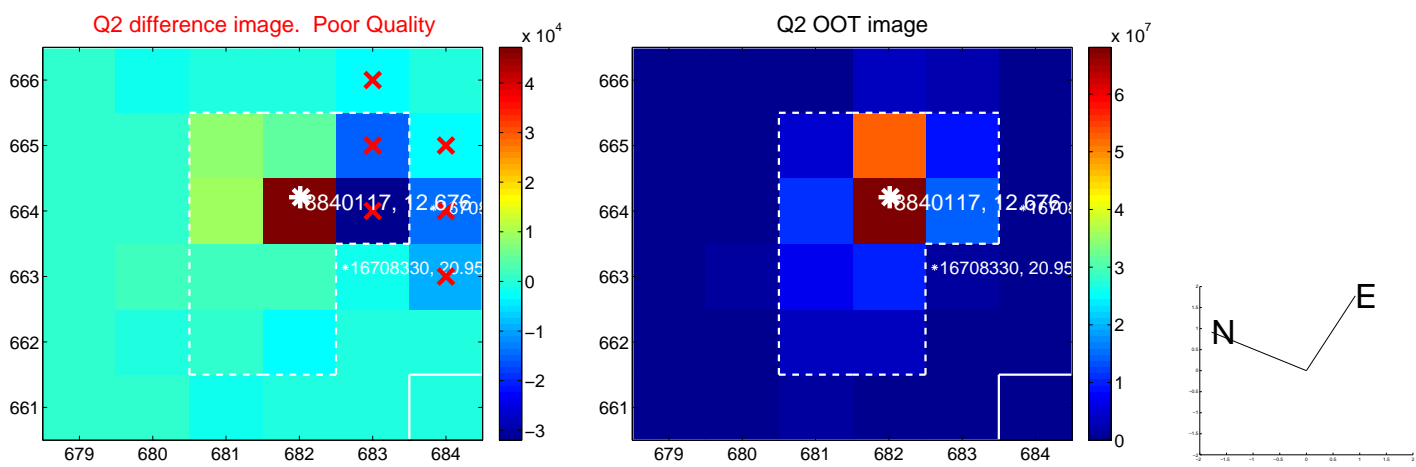
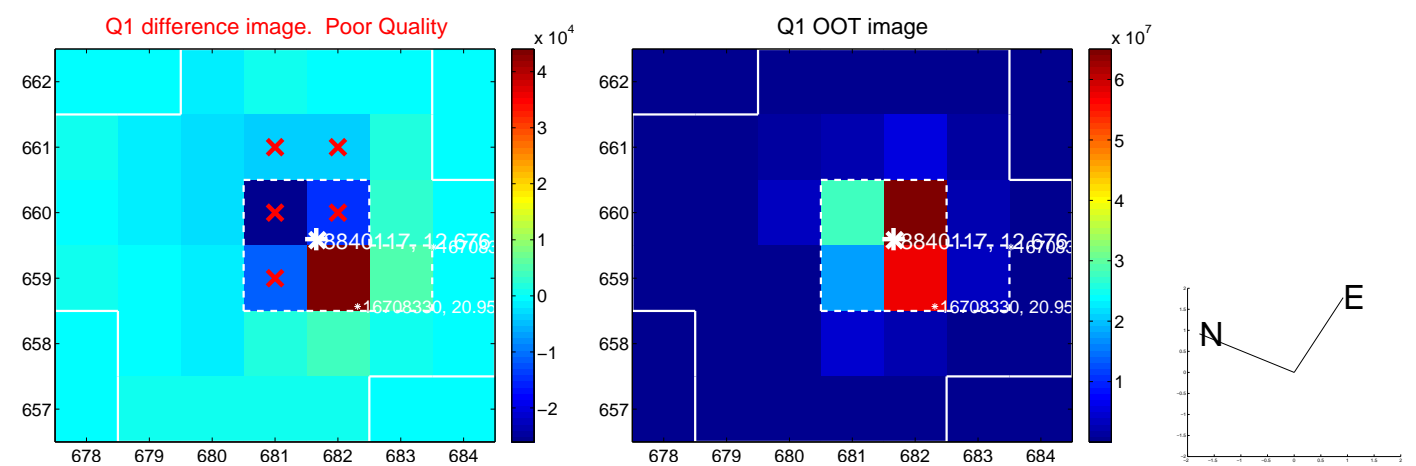
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.754 ± 0.873	0.86	0.271 ± 1.366	-0.704 ± 0.544
PRF-fit source offset from KIC position	0.686 ± 0.860	0.80	0.282 ± 1.334	-0.625 ± 0.517
photometric centroid source offset	1.24 ± 0.61	2.05	-0.76 ± 0.67	-0.98 ± 0.56

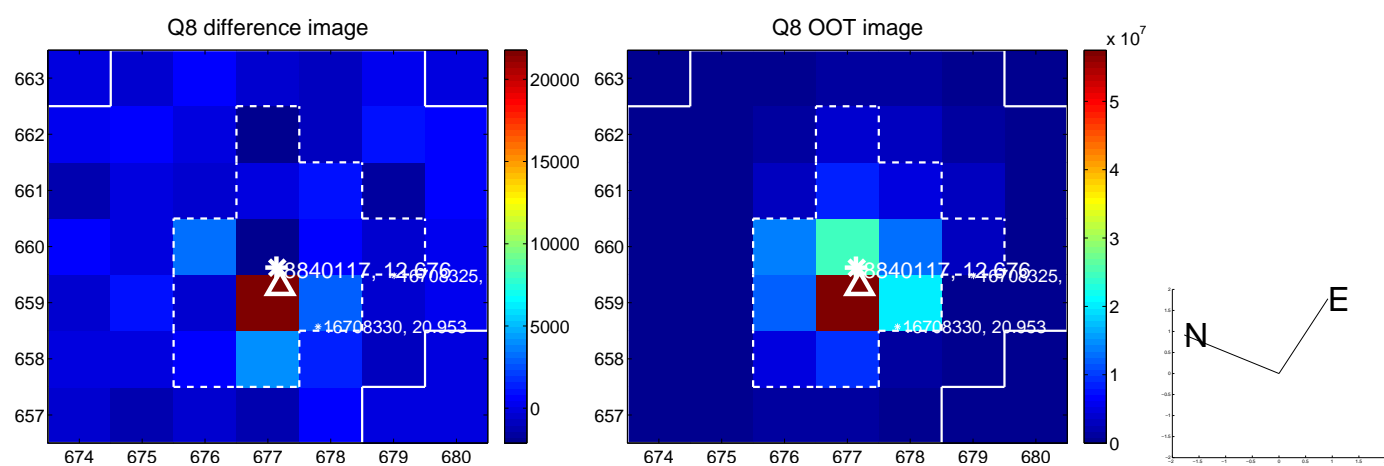
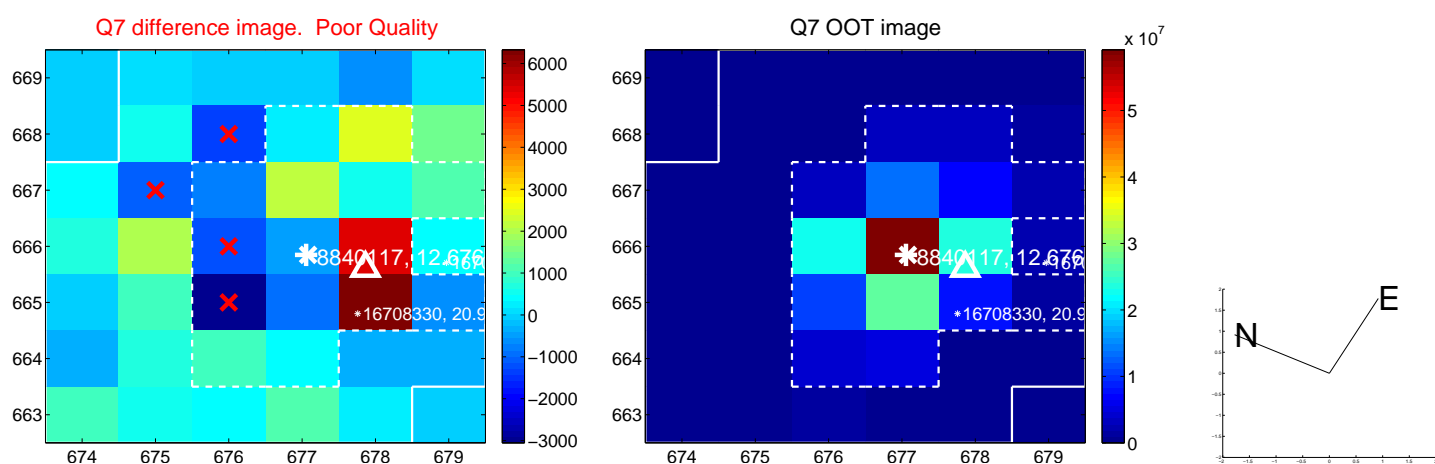
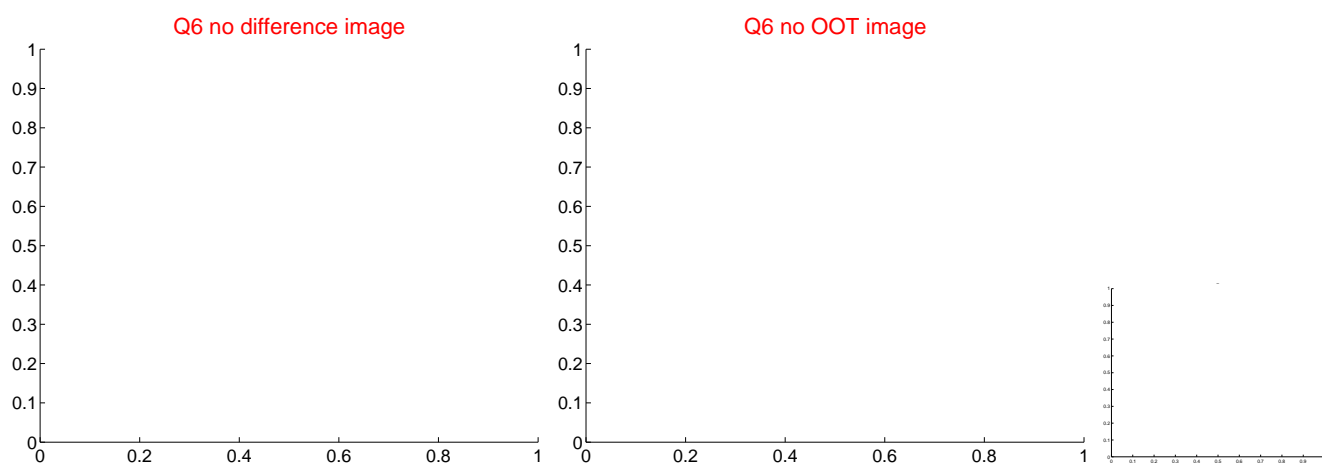
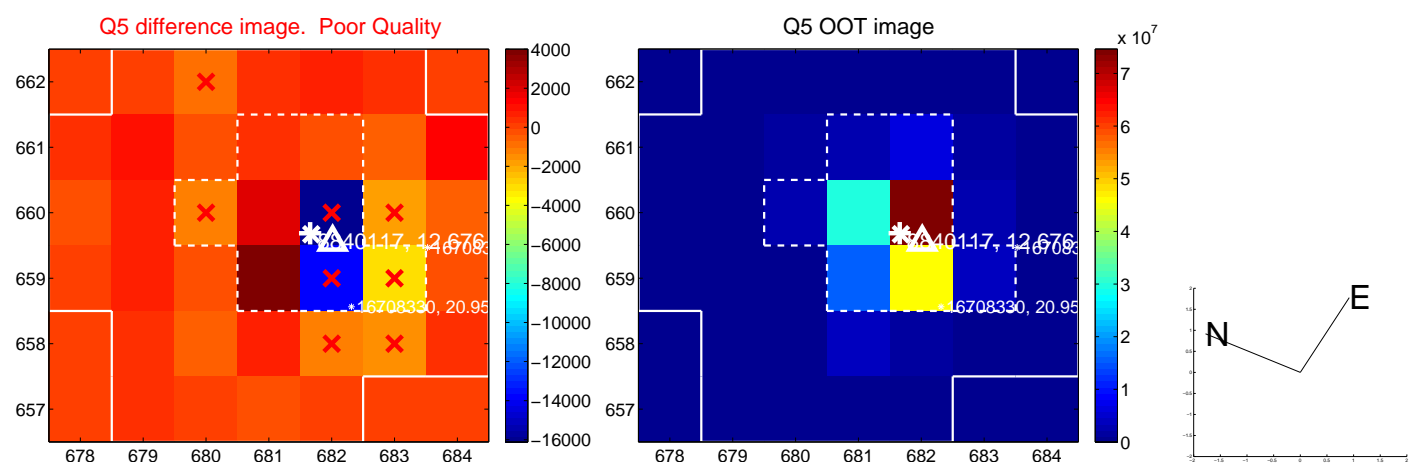


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

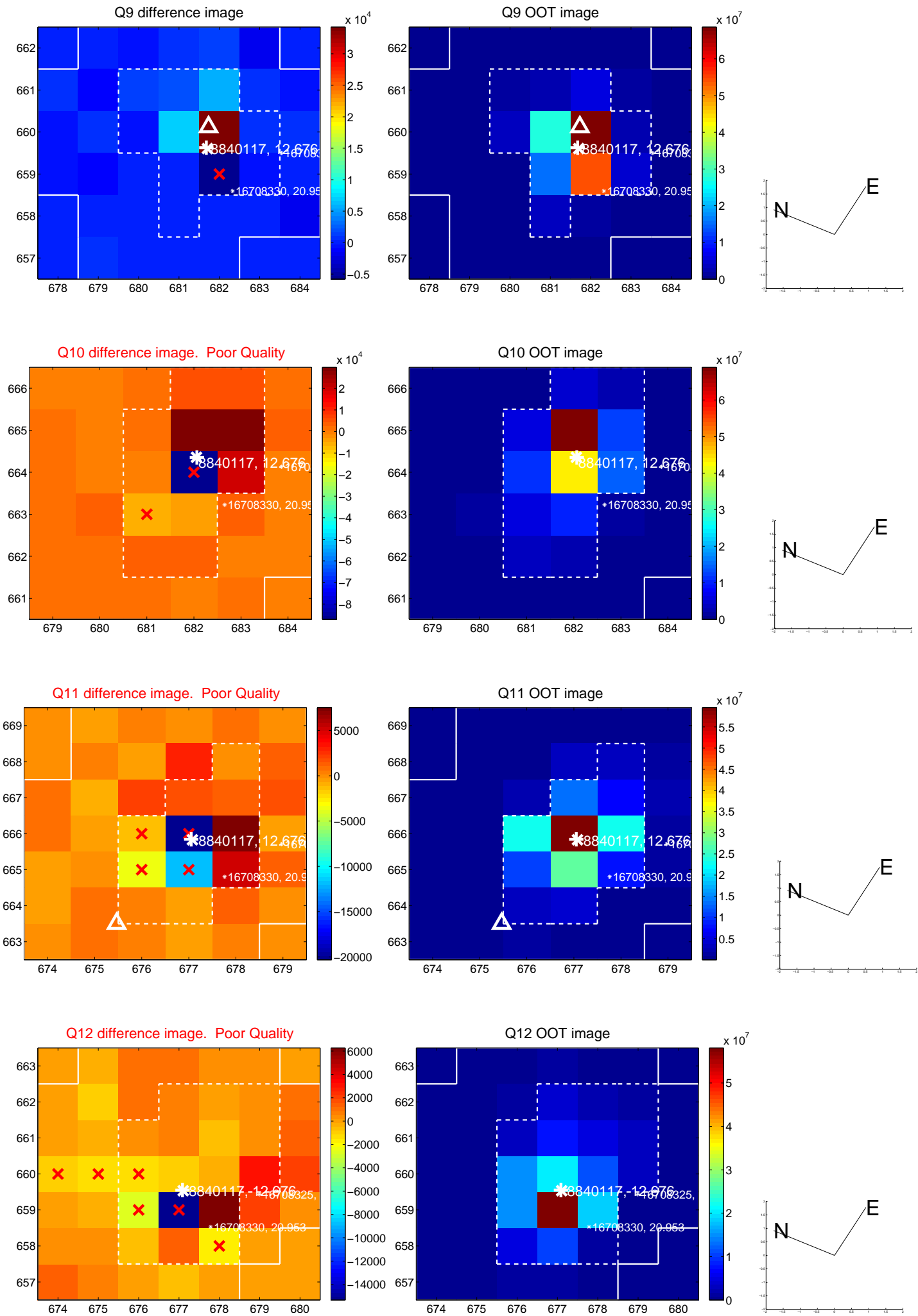
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



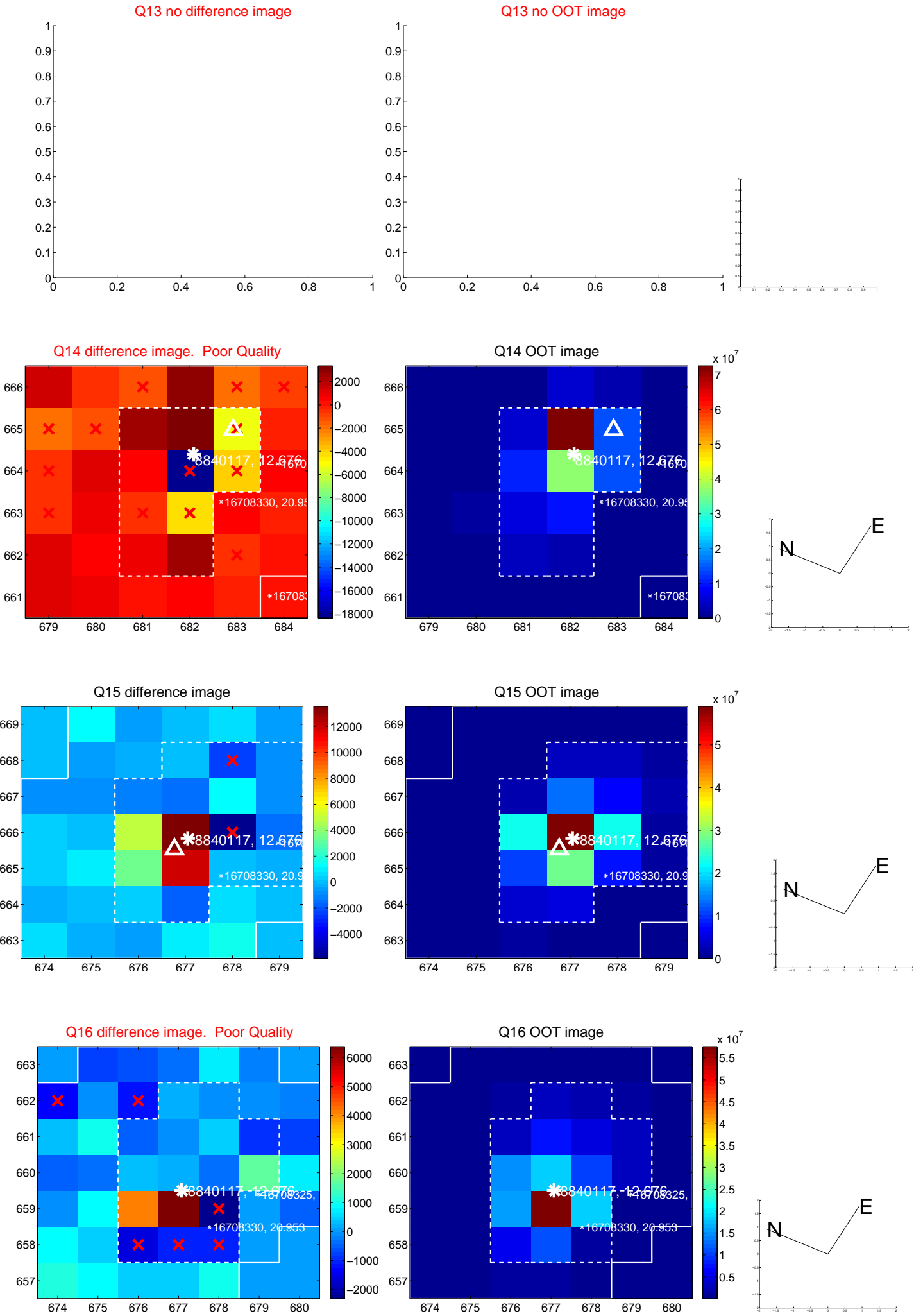
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



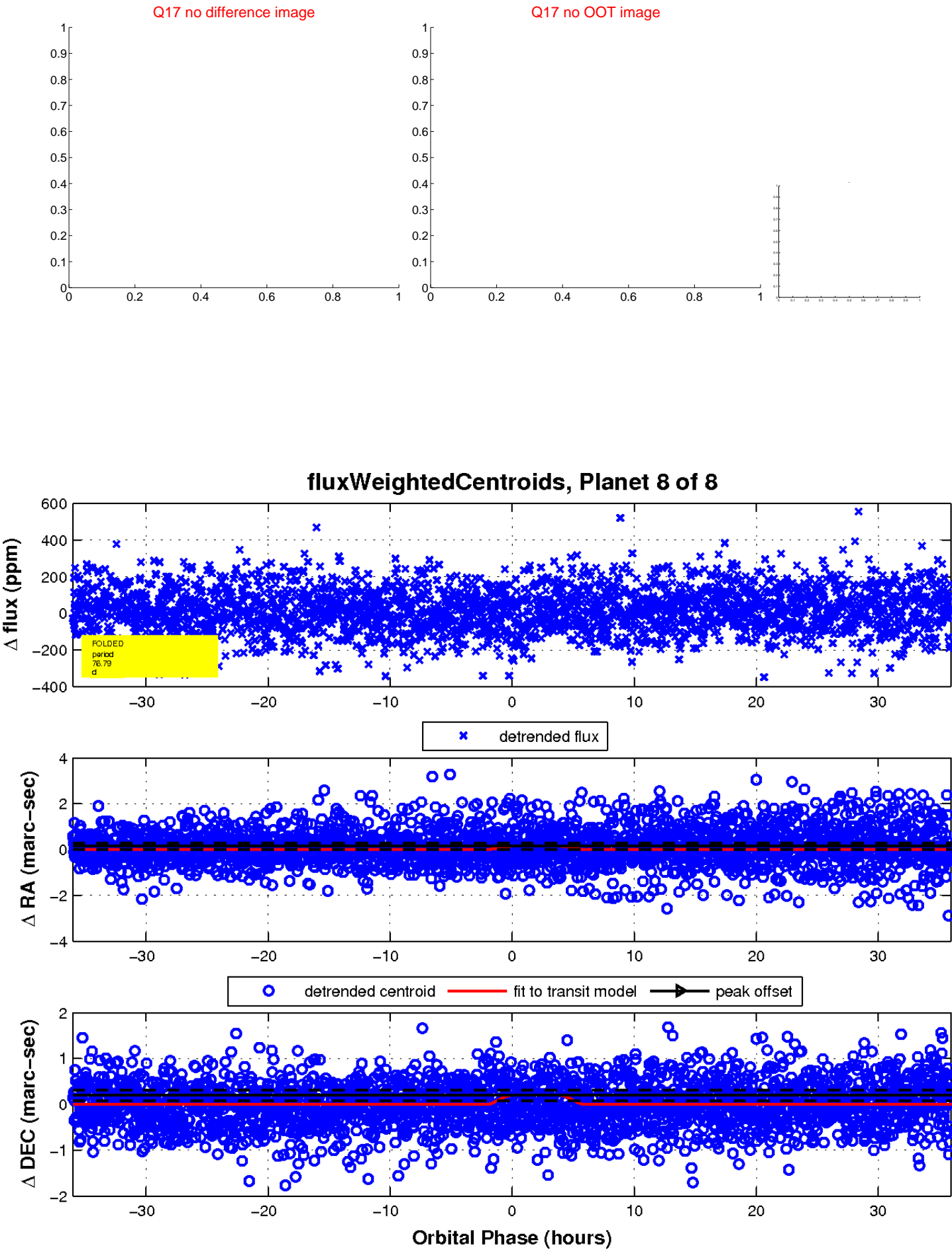
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

