

KIC 005511081

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})
005511081-01	OBS	1930.01	13.727143	138.741926	198.9	7.691	37.9	42.5	1.69	5951	2.78	241.87
005511081-02	OBS	1930.02	24.311071	137.038357	186.5	9.211	31.8	32.9	1.69	5951	2.72	112.88
005511081-03	OBS	1930.03	44.430298	143.546903	225.8	10.570	29.4	30.7	1.69	5951	2.86	50.52
005511081-04	OBS	1930.04	9.341427	132.389716	76.9	6.329	18.7	20.5	1.69	5951	1.74	404.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005511081-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-03	OBS	PC	0.90	0	0	0	0	CENT_KIC_POS
005511081-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

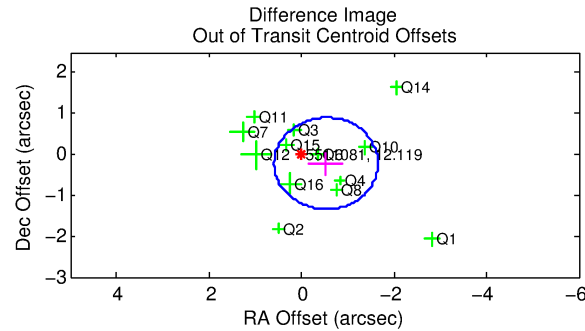
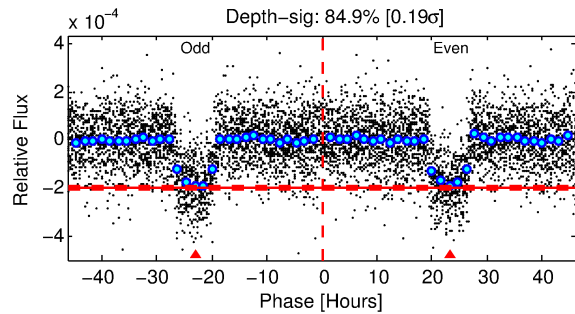
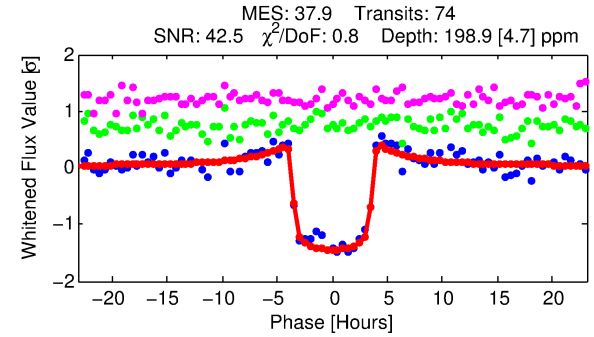
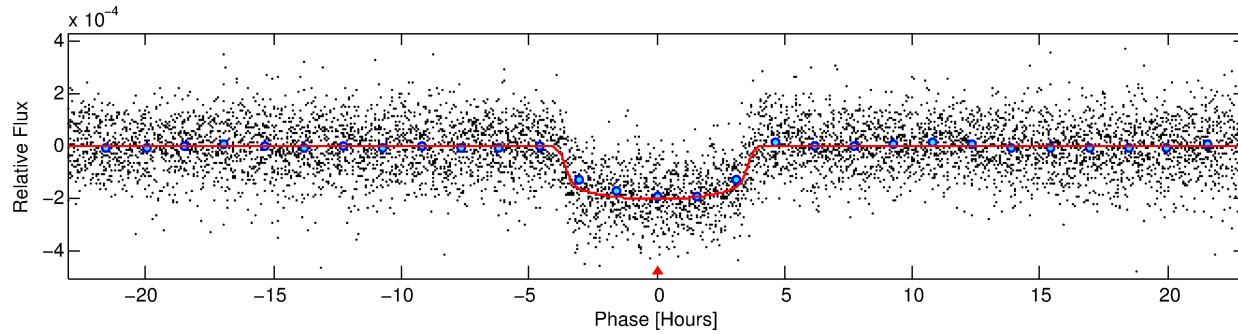
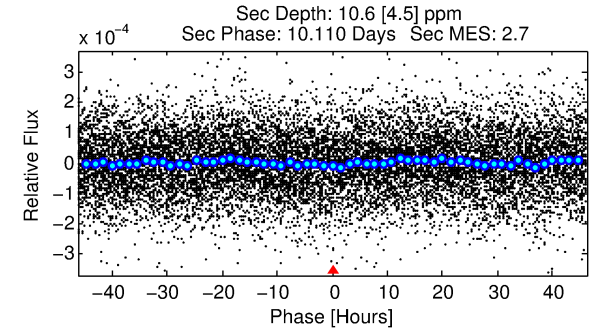
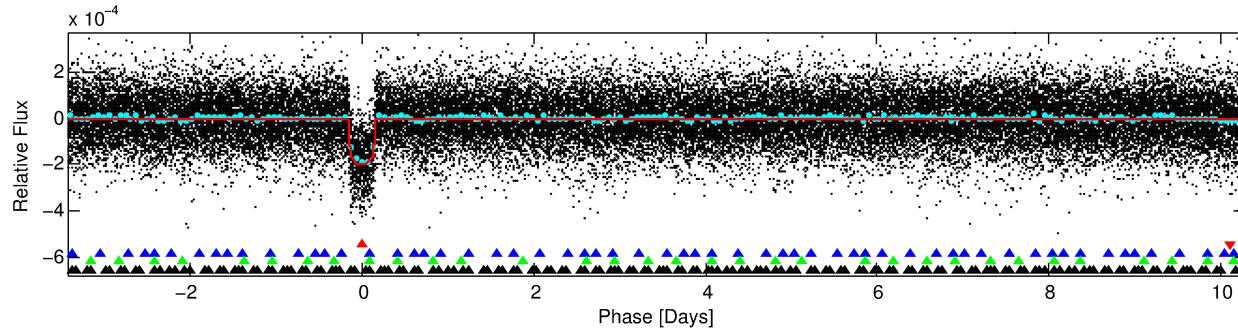
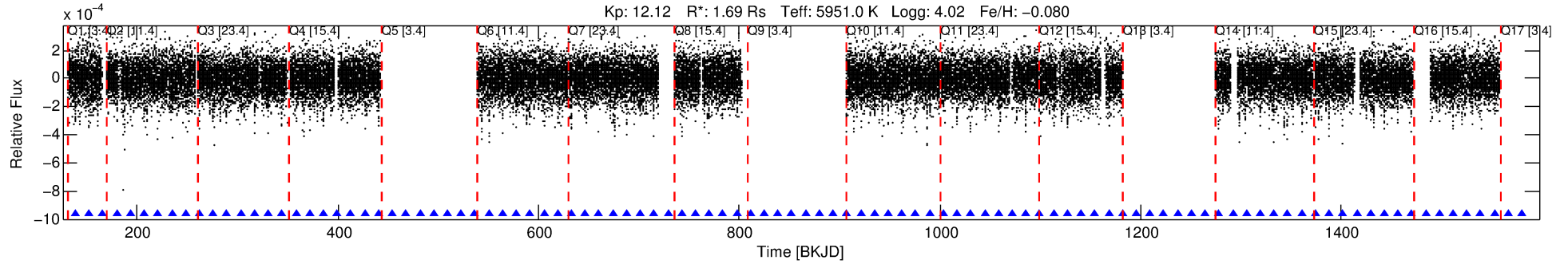
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005511081-01

No Significant Match Found

DV One-Page Summary

KIC: 5511081 Candidate: 1 of 4 Period: 13.727 d
KOI: K01930.01 Name: Kepler-338b Corr: 0.976



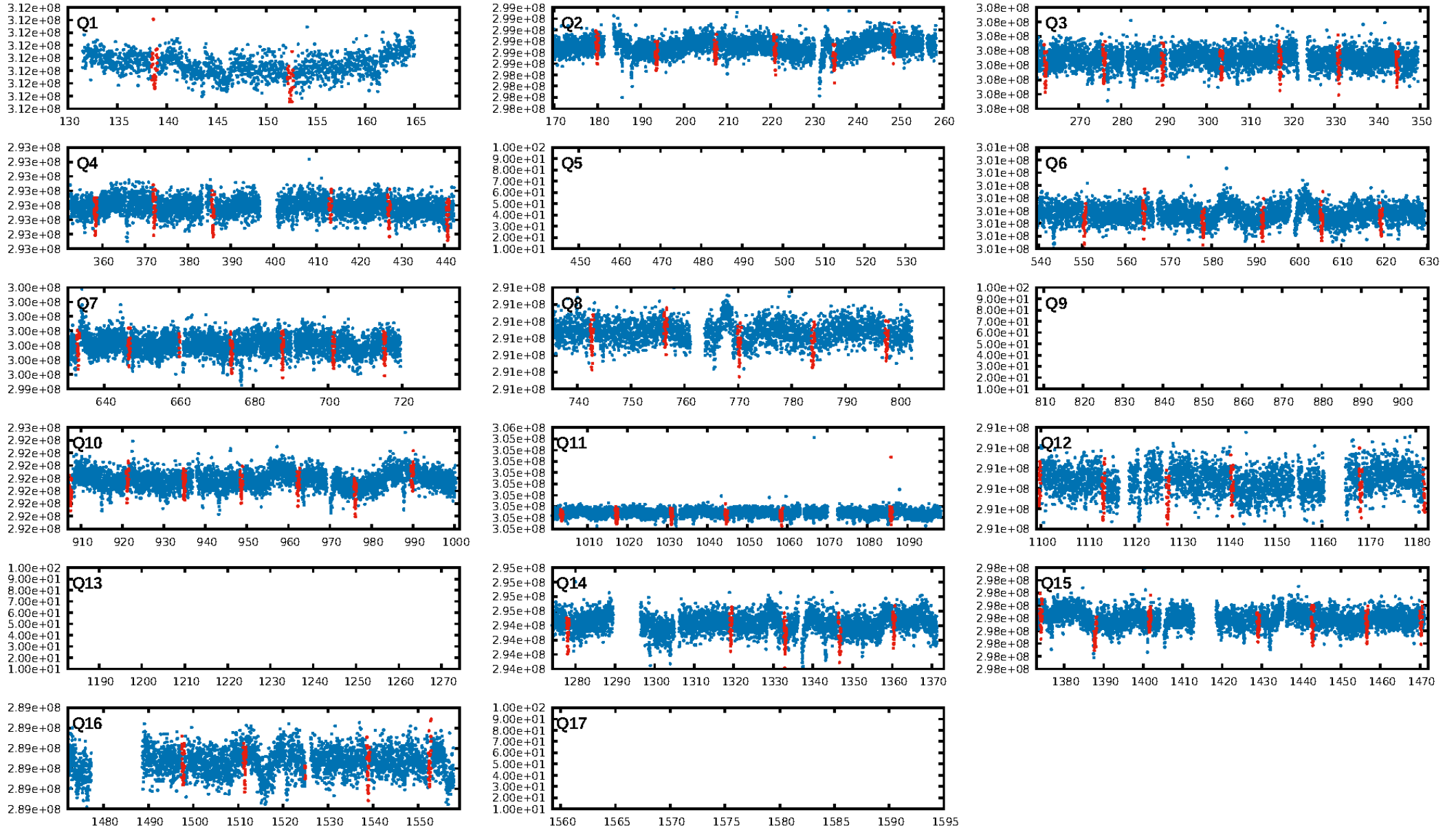
DV Fit Results:

Period = 13.72714 [0.00004] d
Epoch = 138.7419 [0.0024] BKJD
Rp/R* = 0.0150 [0.0007]
a/R* = 6.91 [1.53]
b = 0.88 [0.06]
Seff = 241.87 [20.96]
Teq = 1006 [22] K
Rp = 2.78 [0.23] Re
a = 0.1154 [0.0060] AU
Ag = 10.05 [4.45] [2.03σ]
Teffp = 2768 [305] K [5.77σ]

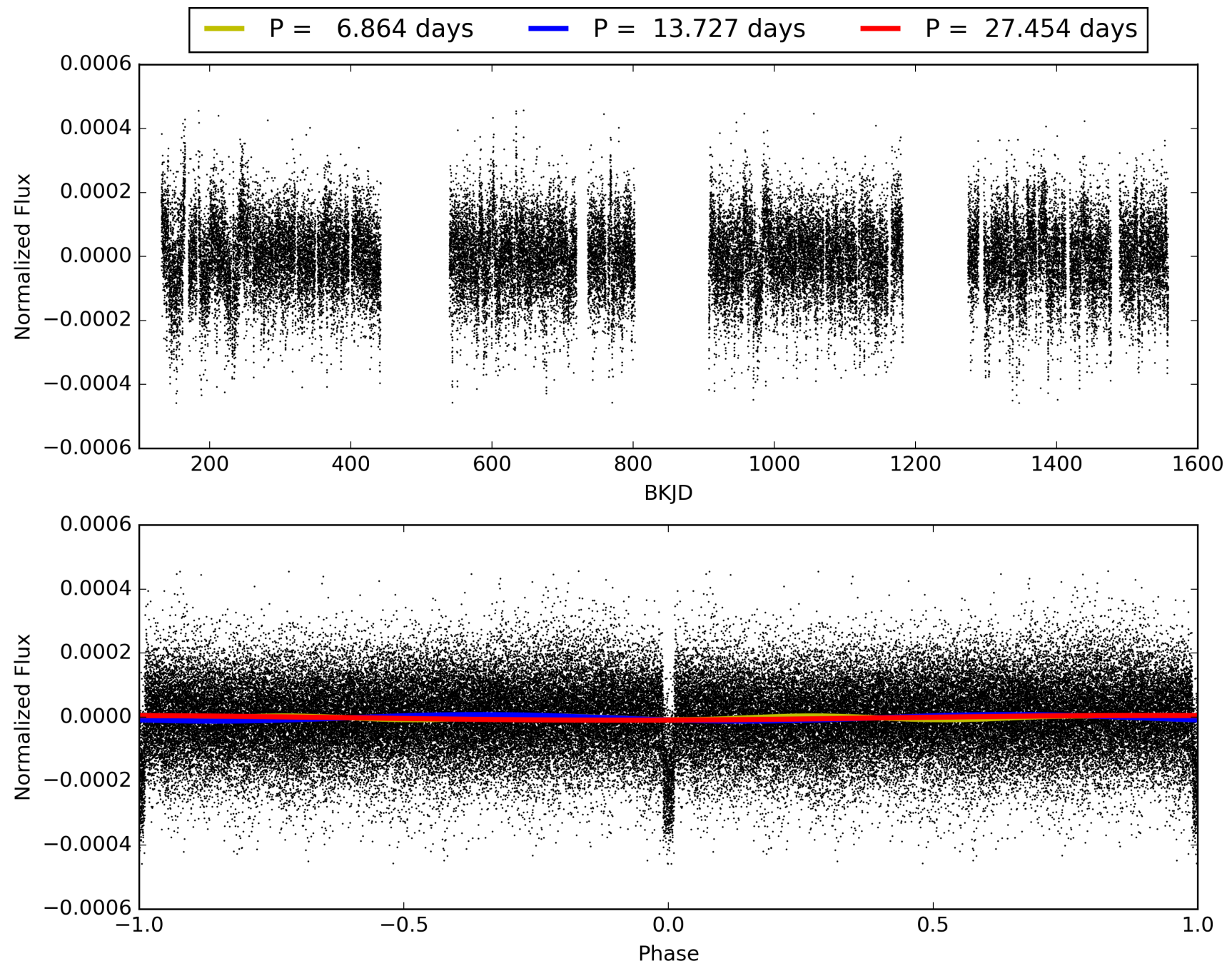
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.57σ]
LongPeriod-sig: 100.0% [21.17σ]
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.00e-277
RollingBand-fgt: 1.00 [72/72]
GhostDiagnostic-chr: 4.688
Centroid-sig: 0.0%
Centroid-so: 0.124 arcsec [0.38σ]
OotOffset-rm: 0.573 arcsec [1.53σ]
KicOffset-rm: 0.379 arcsec [1.05σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 005511081-01, PDC Light Curves

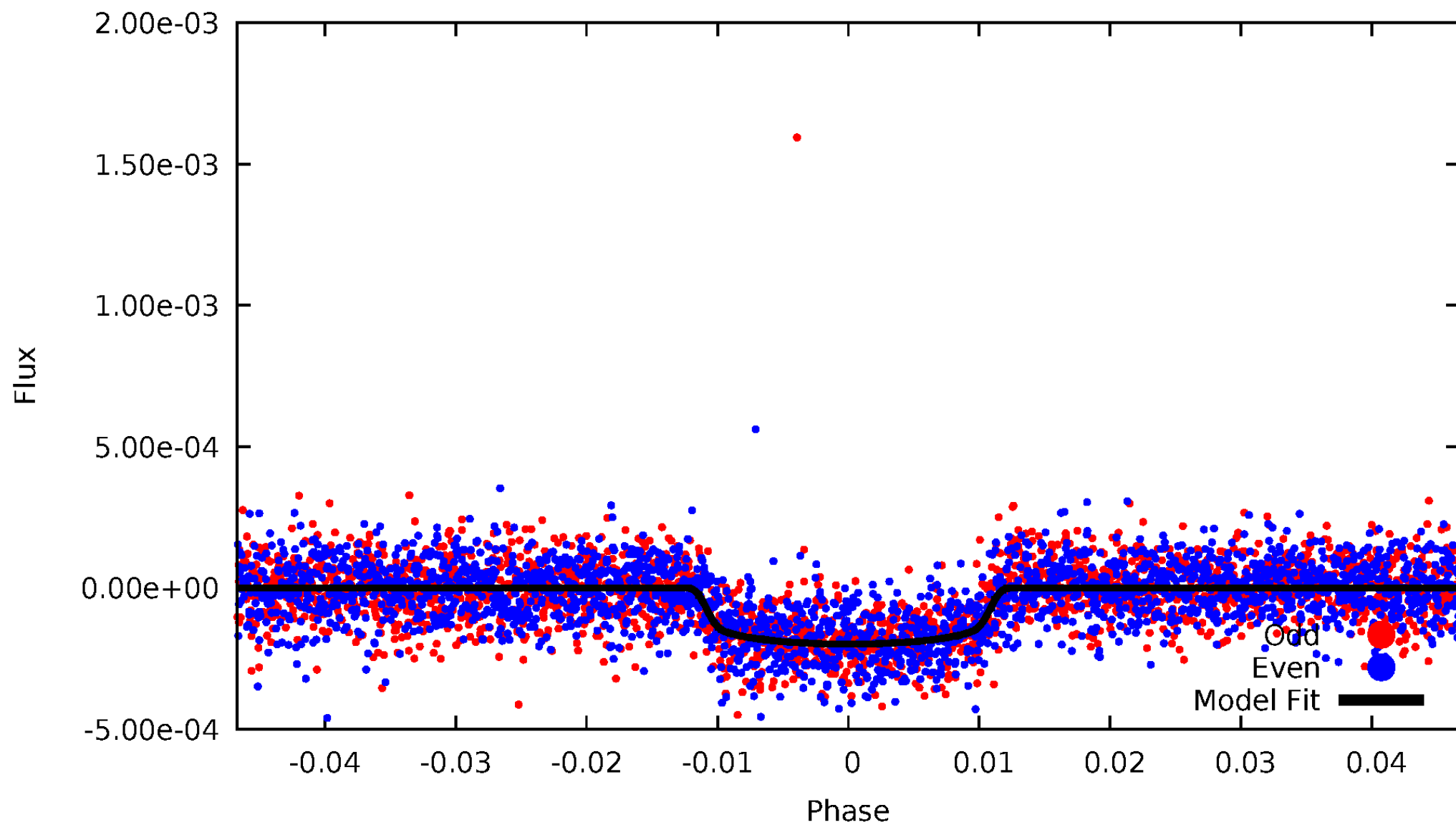


TCE 005511081-01



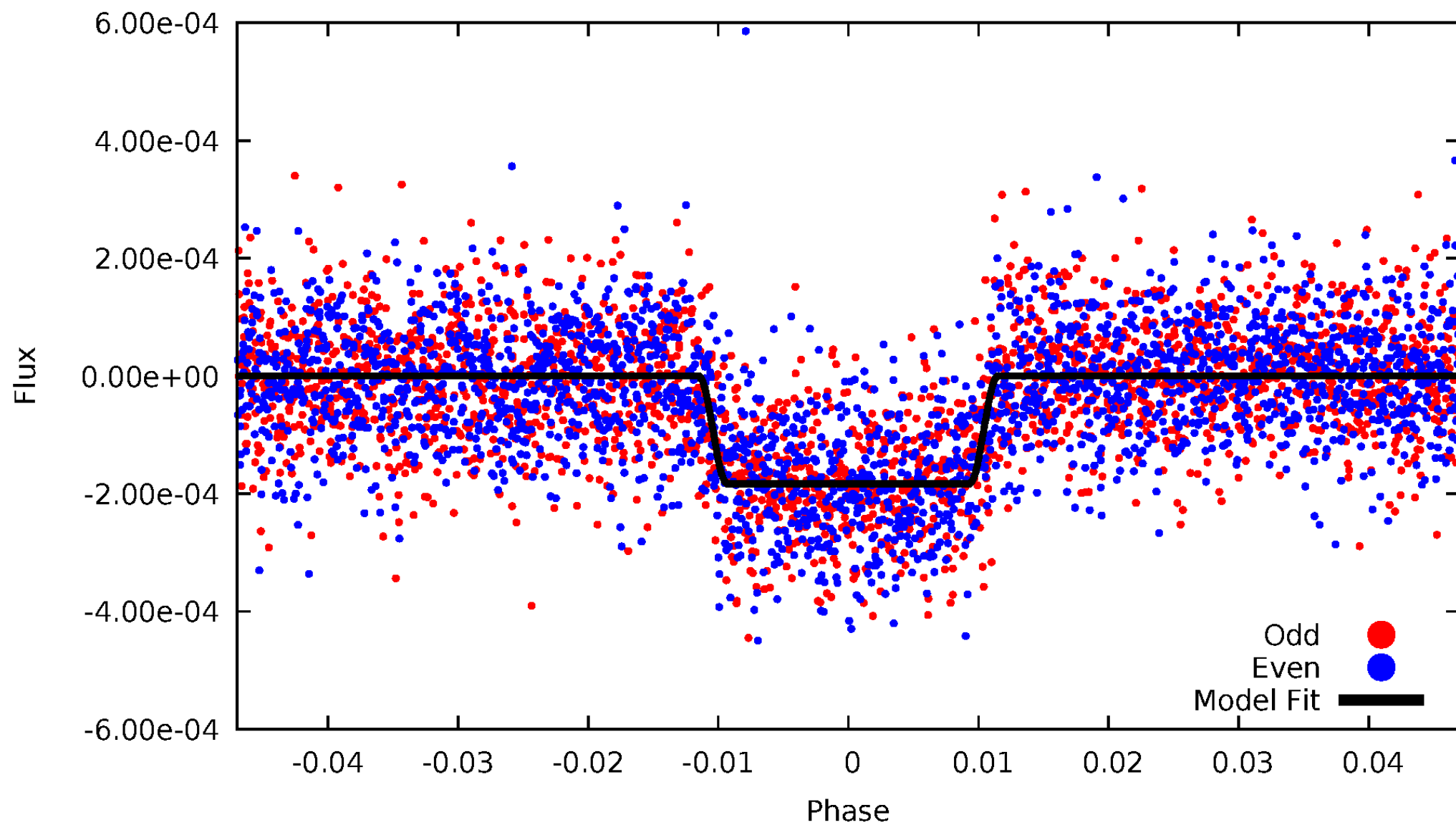
DV Odd/Even

TCE 005511081-01



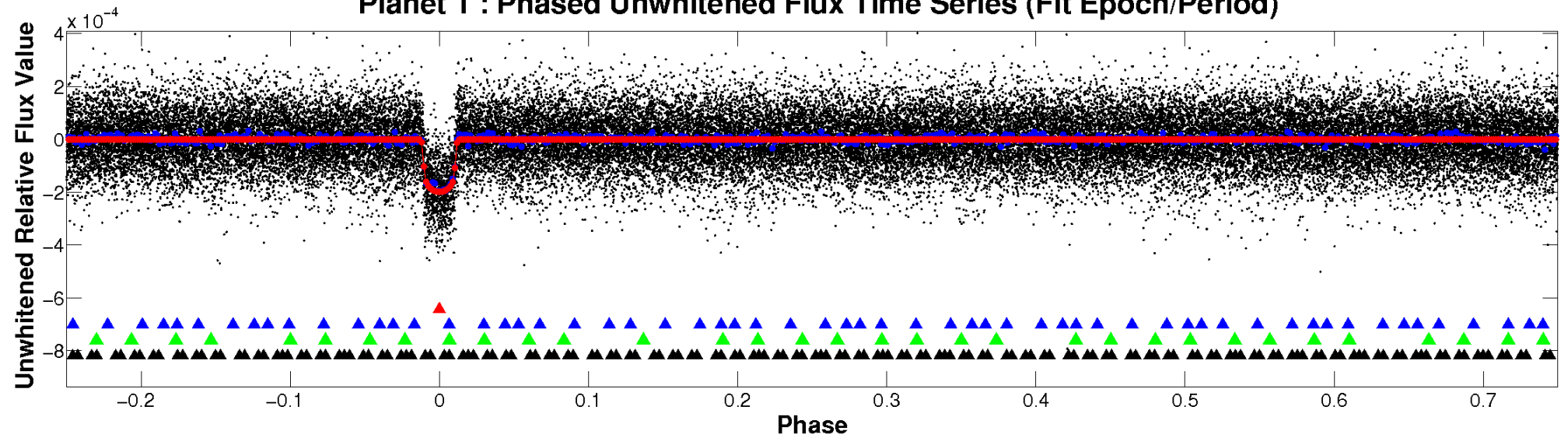
ALT Odd/Even

TCE 005511081-01

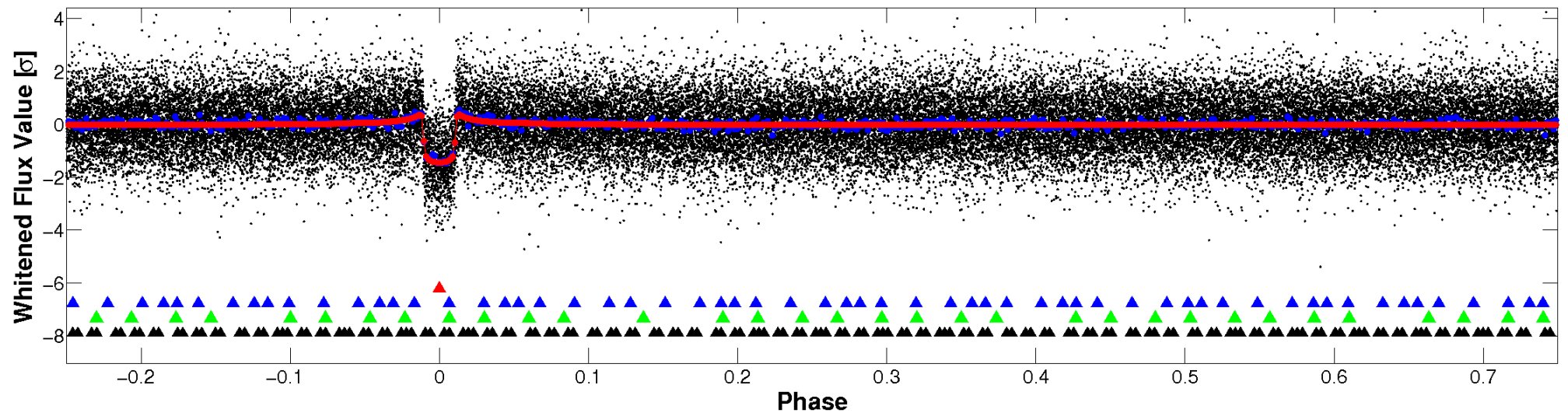


Non-Whitened Vs. Whitened Light Curve

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

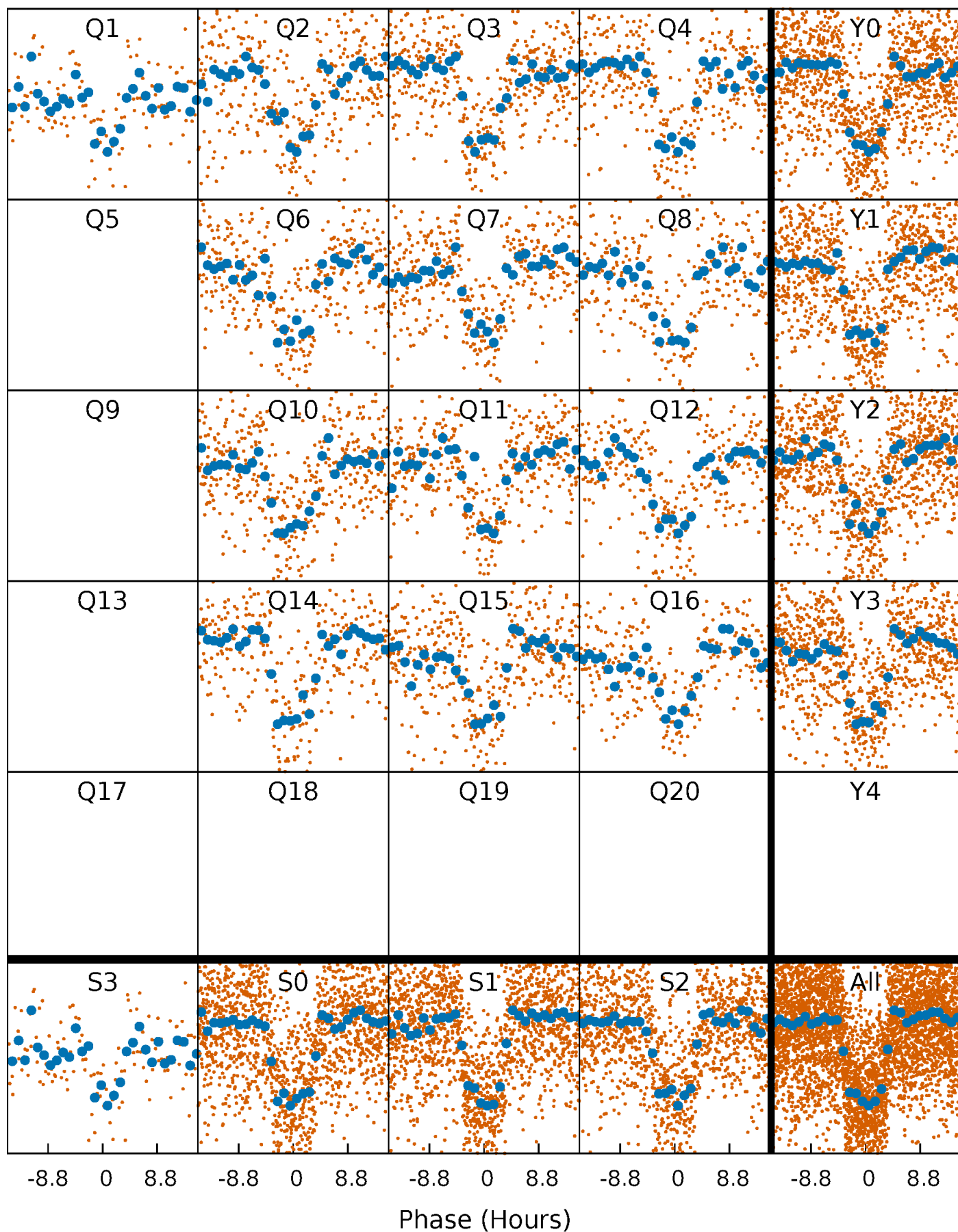


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



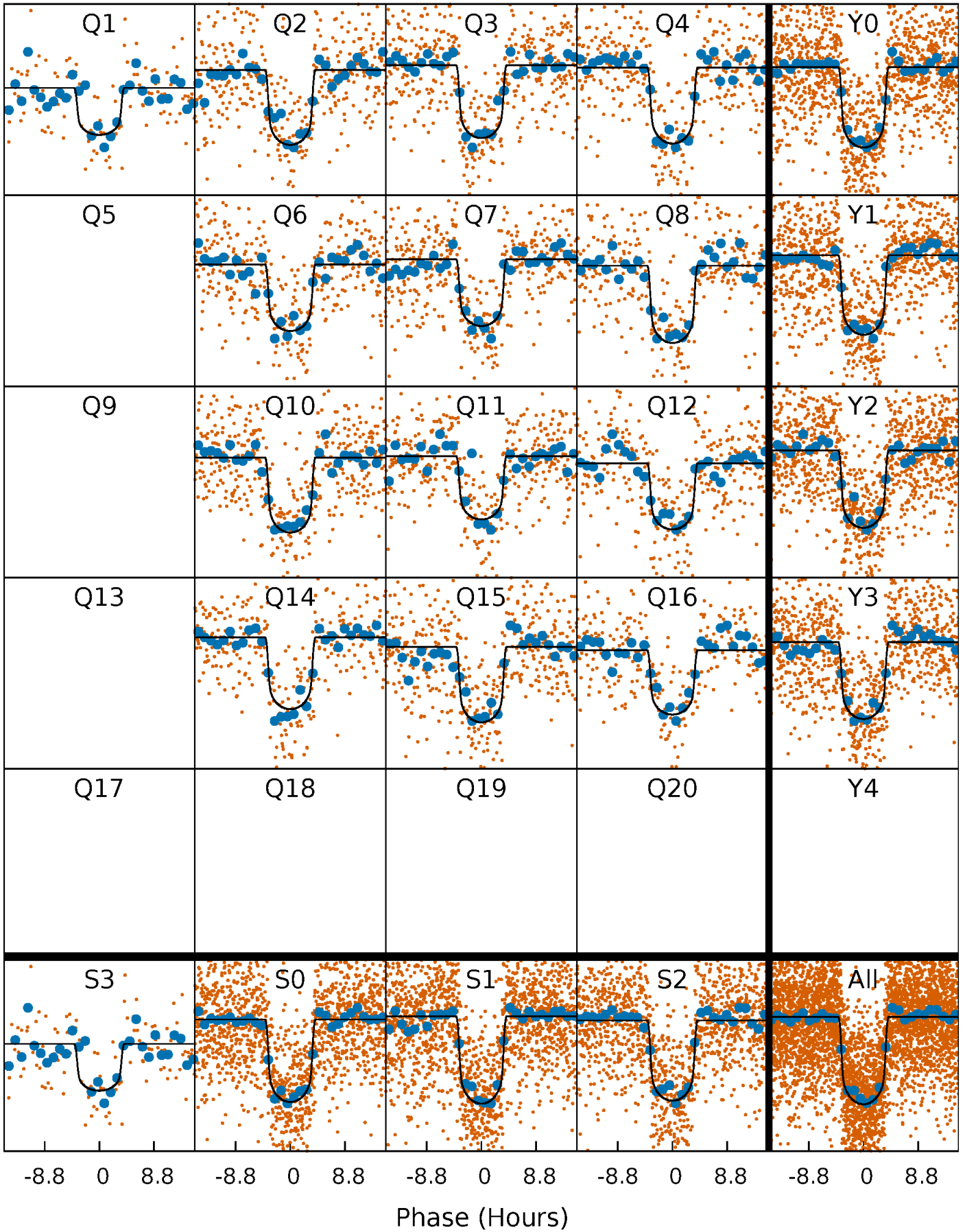
PDC Quarter-Phased Transit Curves

TCE 005511081-01 P= 13.727143 Days $T_0=138.741926$ (BKJD)



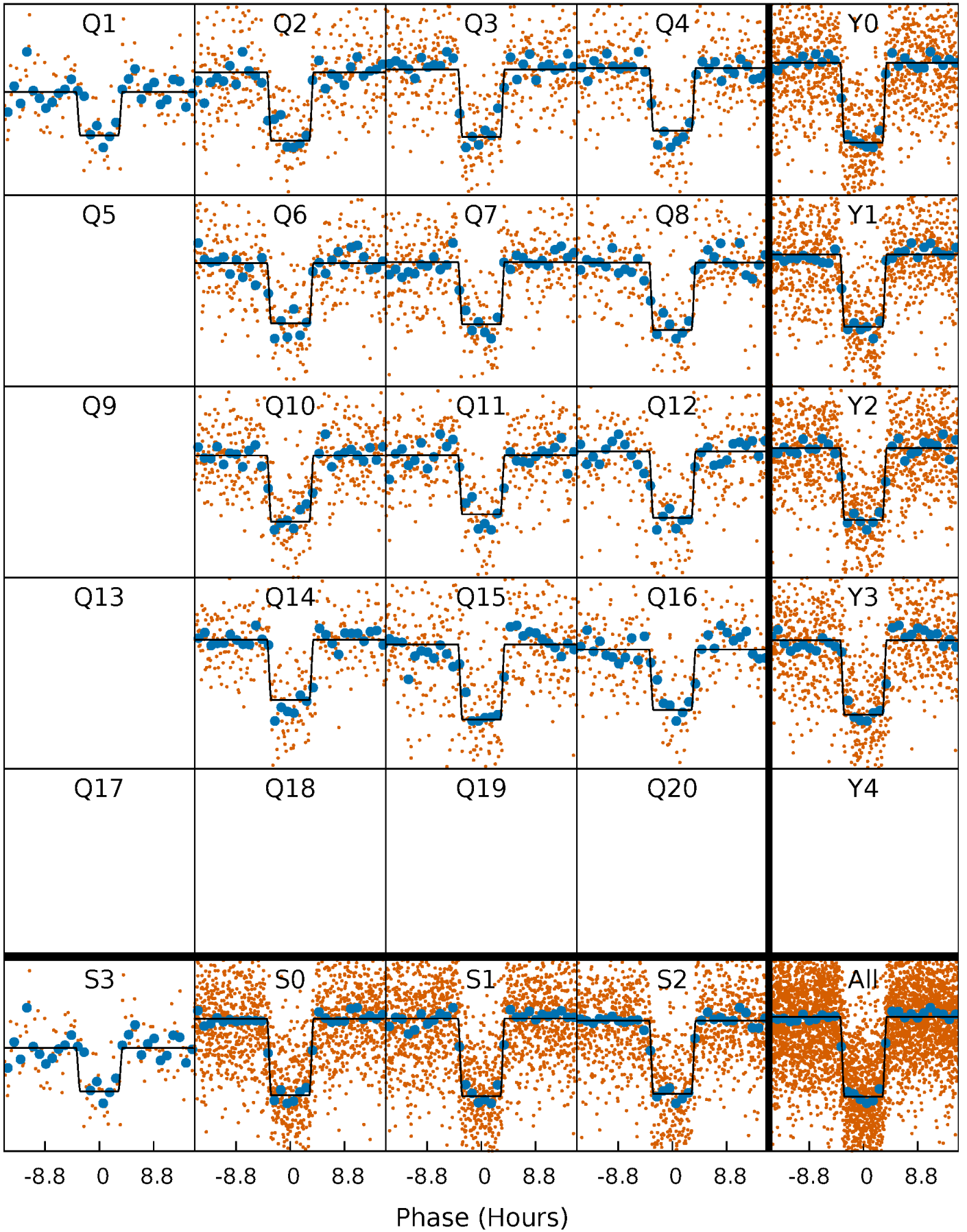
DV Quarter-Phased Transit Curves

TCE 005511081-01 P= 13.727143 Days $T_0=138.741926$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

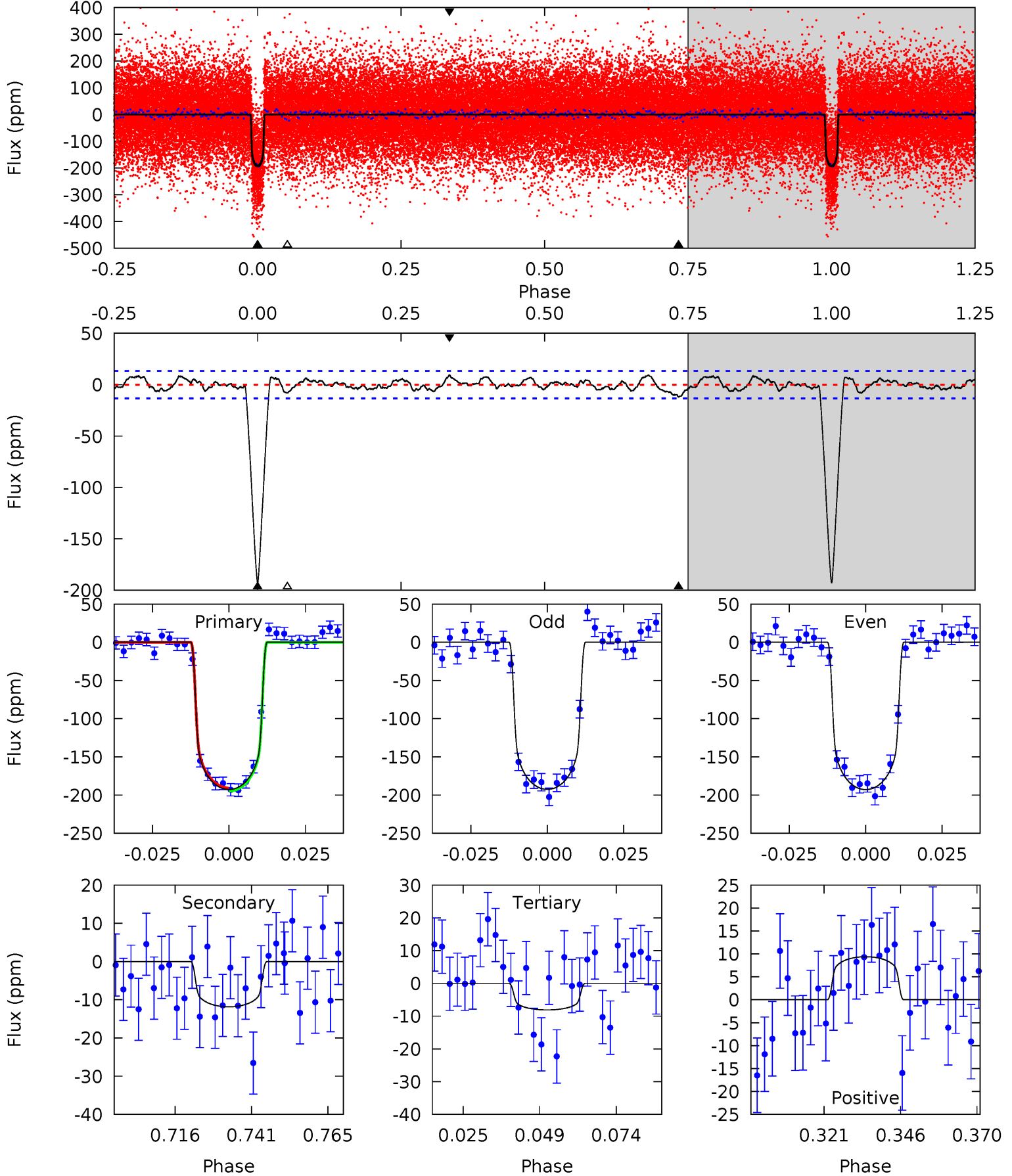
TCE 005511081-01 P= 13.726895 Days $T_0=138.752947$ (BKJD)



DV Model-Shift Uniqueness Test

005511081-01, $P = 13.727143$ Days, $E = 125.014783$ Days

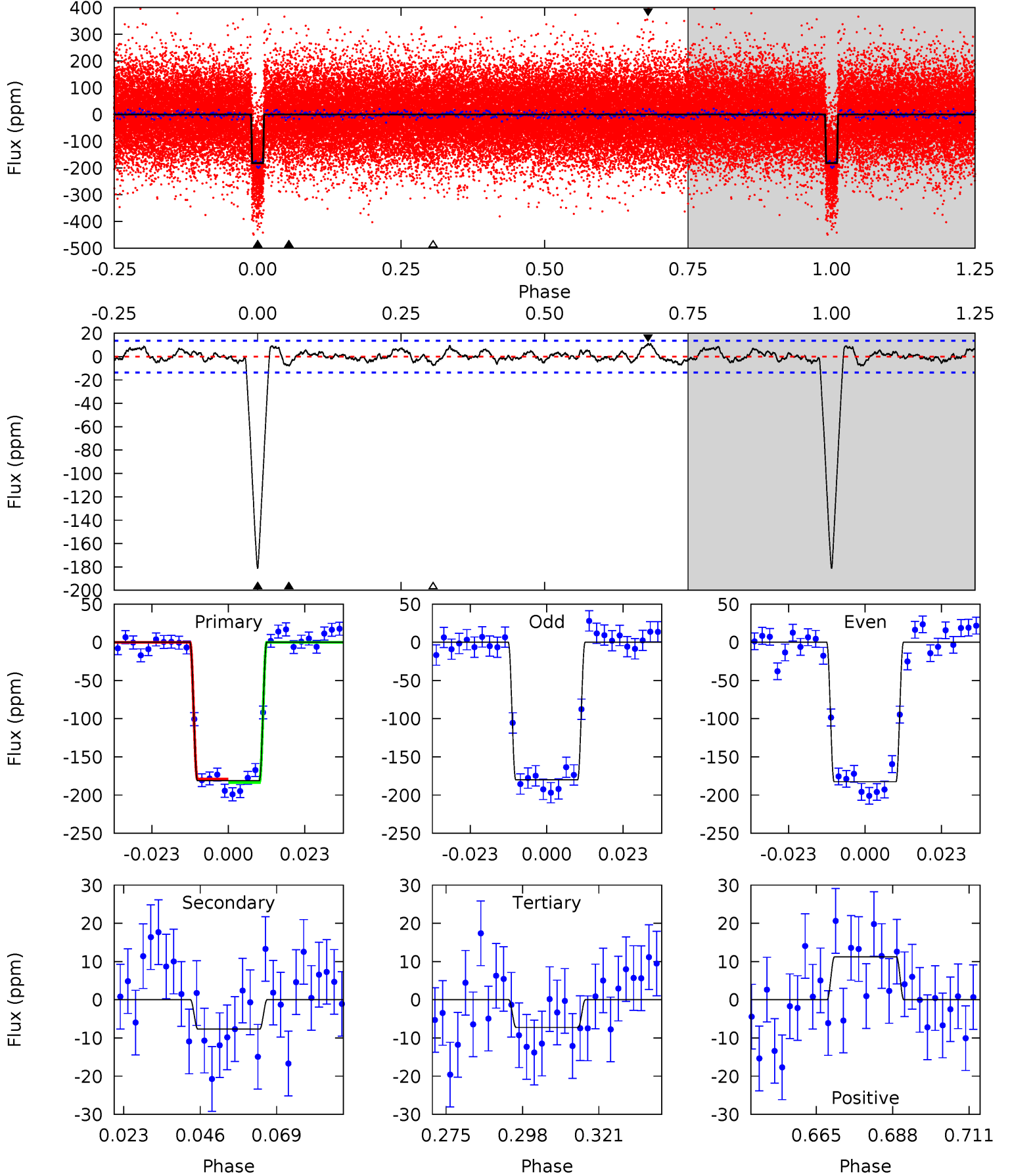
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.7	4.29	2.94	3.40	4.85	2.25	1.42	66.8	66.3	1.35	0.89	0.05	0.98	0.05	0.64



Alt Model-Shift Uniqueness Test

005511081-01, $P = 13.726895$ Days, $E = 125.026052$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.6	2.73	2.58	4.00	4.86	2.27	1.29	62.0	60.6	0.15	-1.27	0.47	0.99	0.06	0.80



Stellar Parameters For KIC 005511081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5951^{+80}_{-80}	$4.017^{+0.033}_{-0.030}$	$-0.080^{+0.200}_{-0.150}$	$1.693^{+0.115}_{-0.094}$	$1.086^{+0.094}_{-0.070}$	$0.315^{+0.043}_{-0.038}$
	+1%/-1%	+1%/-1%	+250%/-188%	+7%/-6%	+9%/-6%	+14%/-12%
Source	SPE72	AST8	SPE72	DSEP		

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

Secondary Eclipse Parameters for KIC 005511081-01 / KOI 1930.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-12 ± 3	$2.77^{+0.18}_{-0.15}$	1406^{+27}_{-26}	3373^{+129}_{-162}	11^{+3}_{-3}
Alt.	-8 ± 3	$2.51^{+0.16}_{-0.17}$	1403^{+27}_{-25}	3252^{+171}_{-220}	$9.149^{+3.533}_{-3.418}$

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

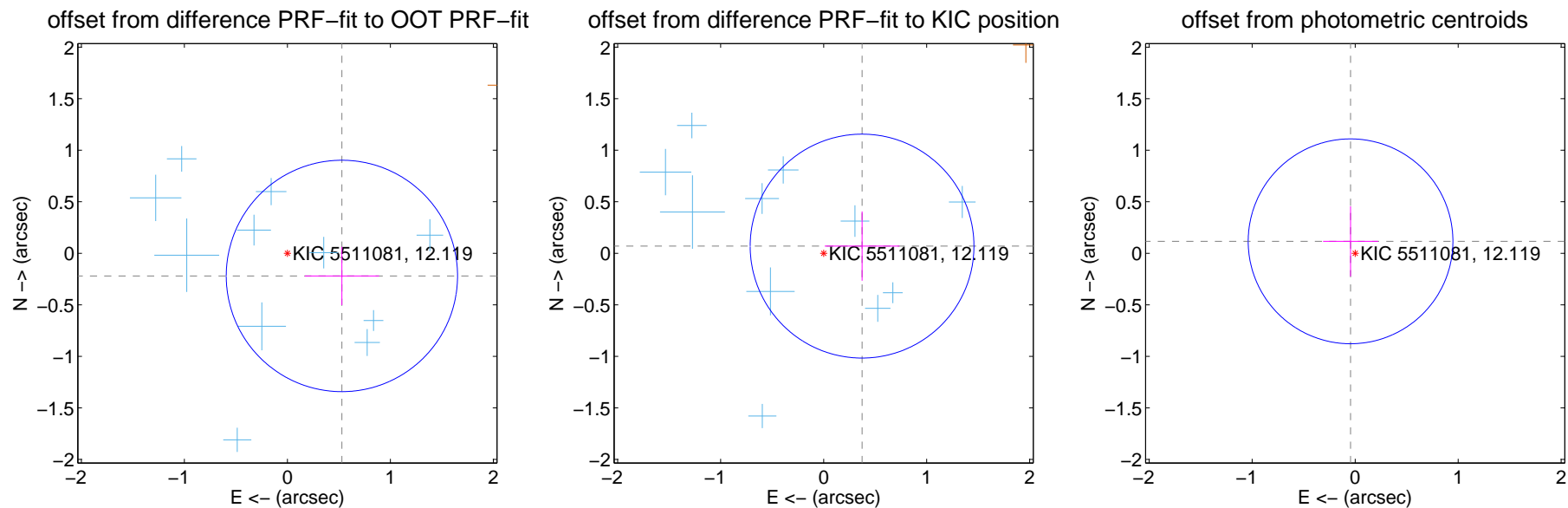
DV Centroid Data

Supplemental centroid analysis for 005511081-01. Kepler magnitude: 12.12. Transit SNR 42.50

There are 12 quarters with good PRF difference image offsets

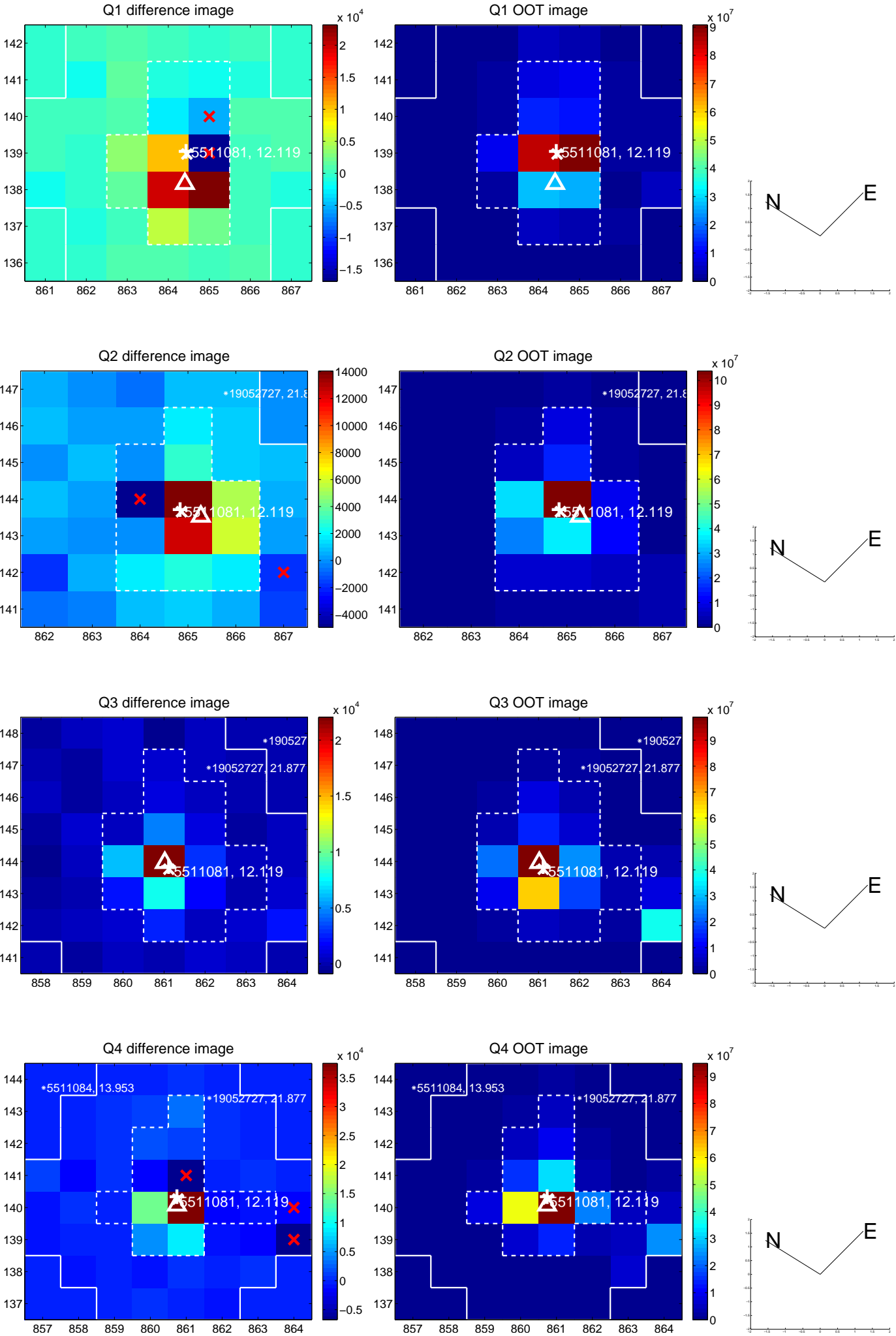
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.573 ± 0.374	1.53	-0.529 ± 0.361	-0.220 ± 0.283
PRF-fit source offset from KIC position	0.379 ± 0.362	1.05	-0.373 ± 0.363	0.070 ± 0.336
photometric centroid source offset	0.12 ± 0.33	0.38	0.04 ± 0.27	0.12 ± 0.34

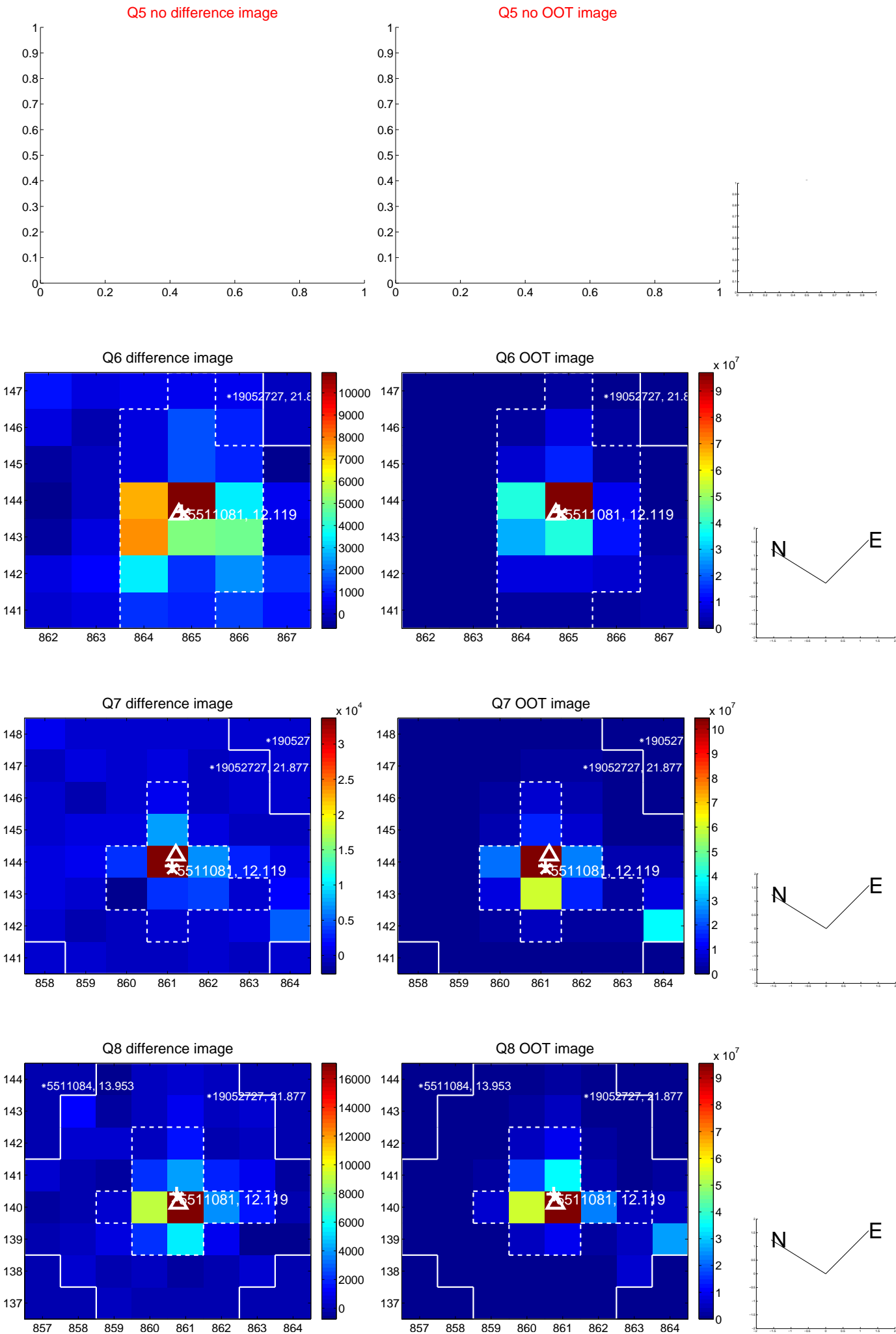


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

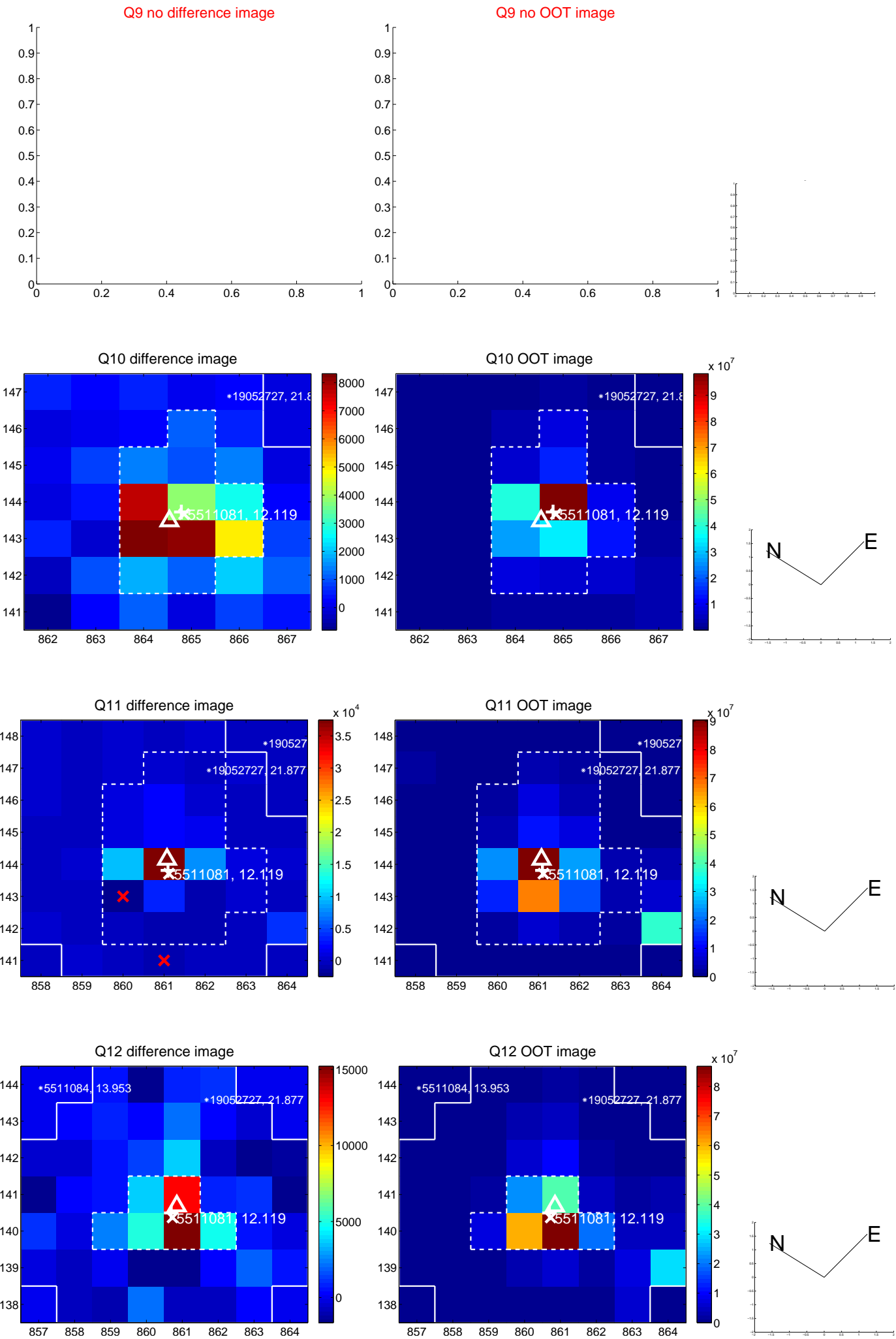
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



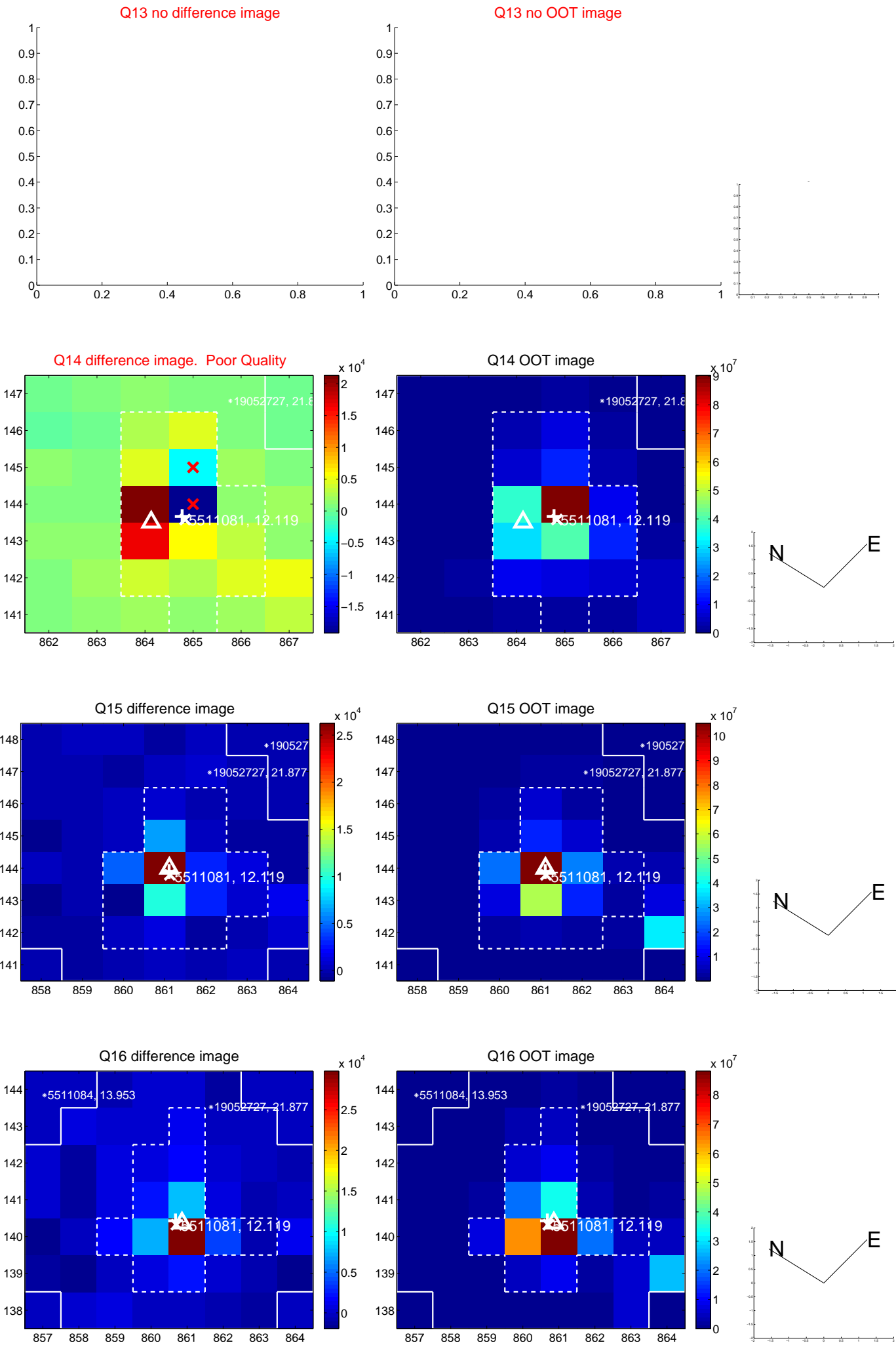
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



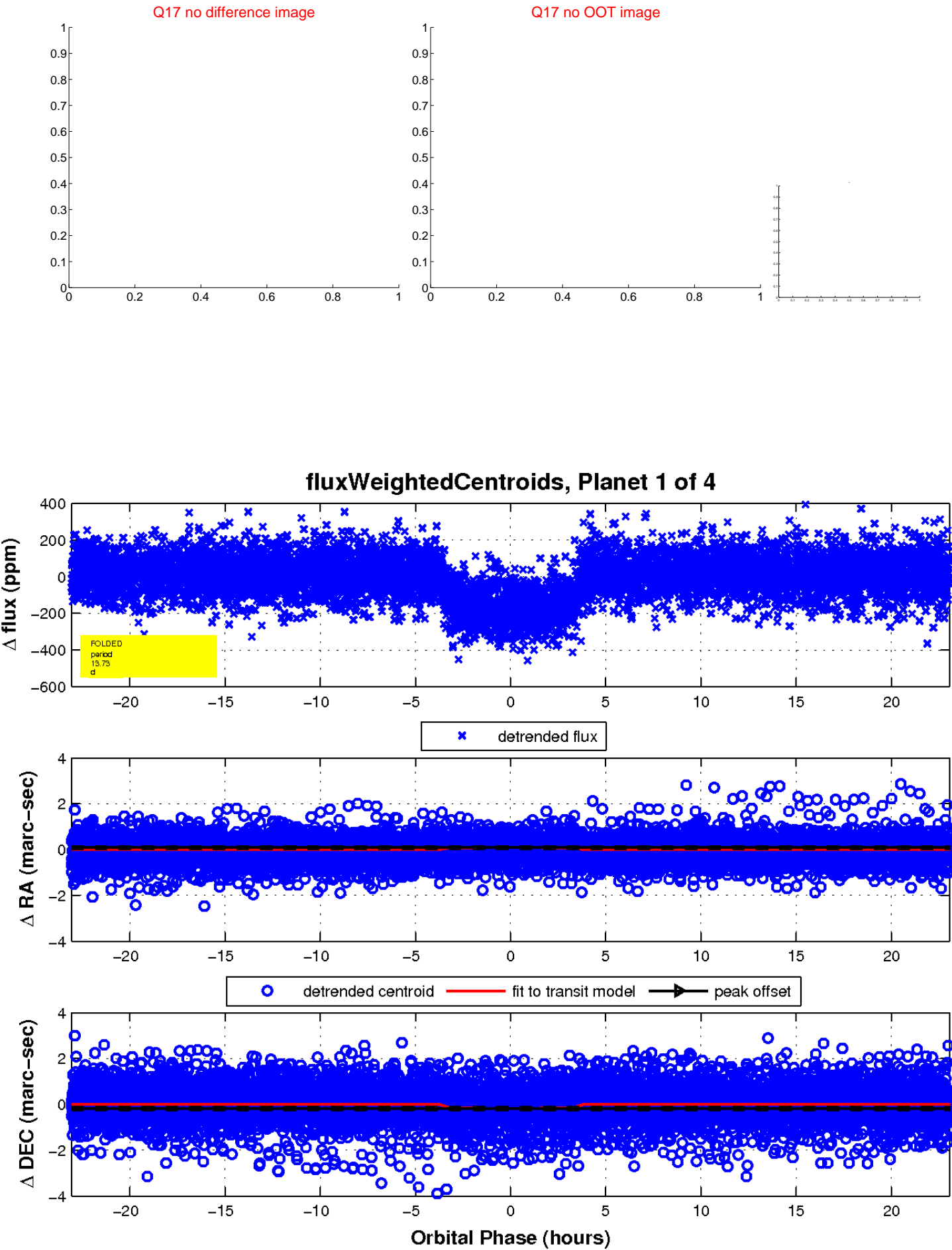
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

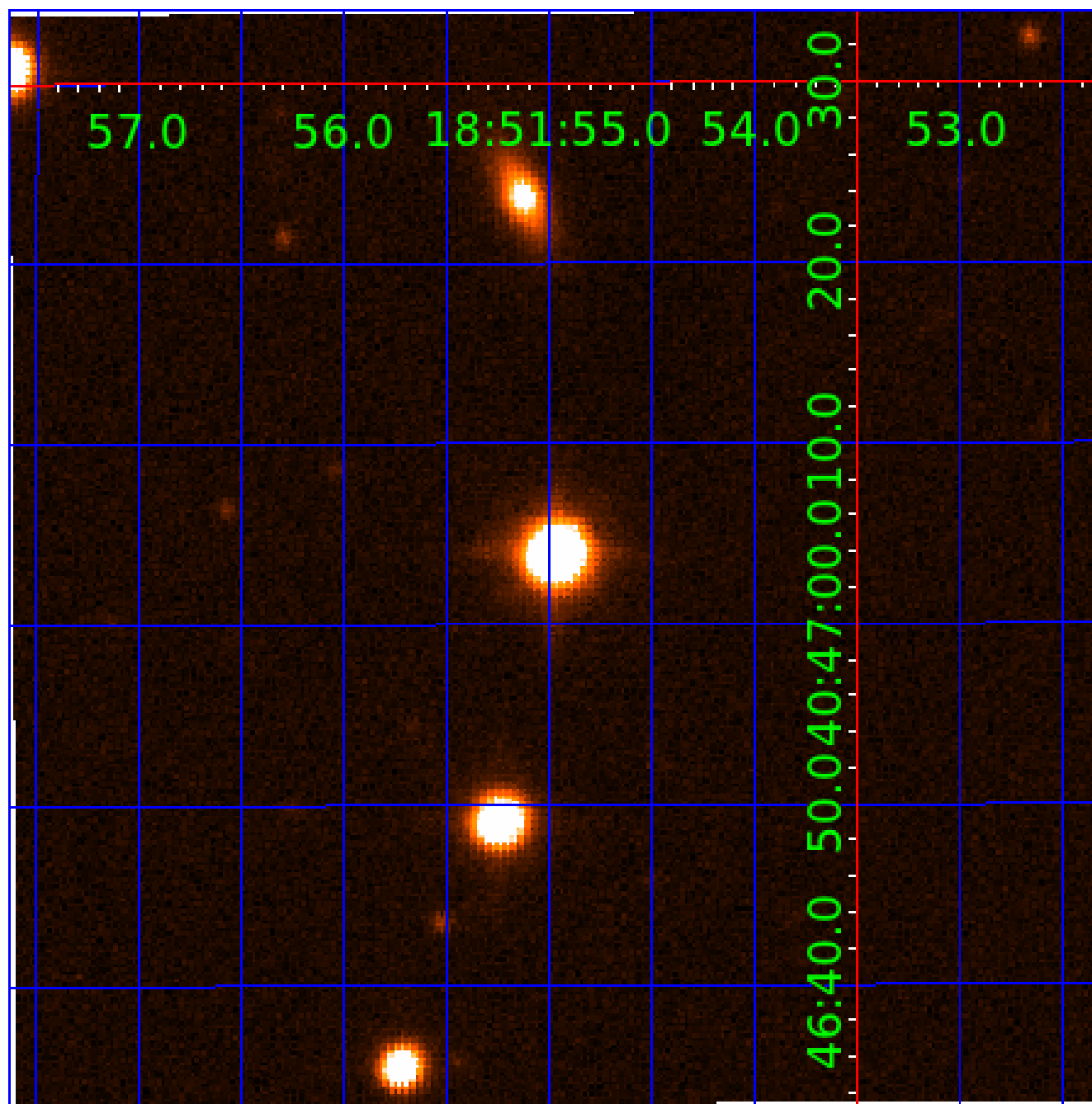


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005511081

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})
005511081-01	OBS	1930.01	13.727143	138.741926	198.9	7.691	37.9	42.5	1.69	5951	2.78	241.87
005511081-02	OBS	1930.02	24.311071	137.038357	186.5	9.211	31.8	32.9	1.69	5951	2.72	112.88
005511081-03	OBS	1930.03	44.430298	143.546903	225.8	10.570	29.4	30.7	1.69	5951	2.86	50.52
005511081-04	OBS	1930.04	9.341427	132.389716	76.9	6.329	18.7	20.5	1.69	5951	1.74	404.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005511081-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-03	OBS	PC	0.90	0	0	0	0	CENT_KIC_POS
005511081-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

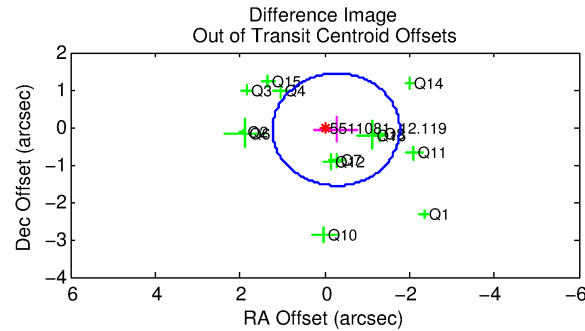
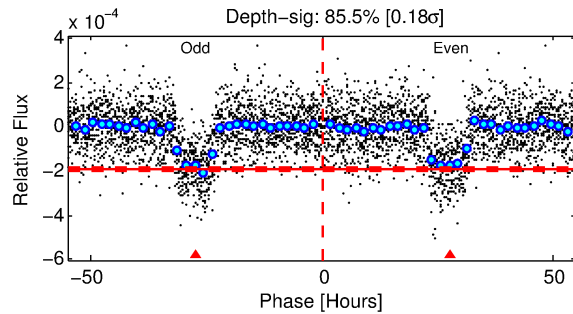
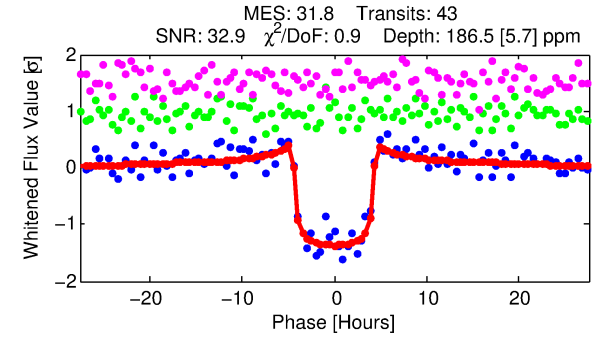
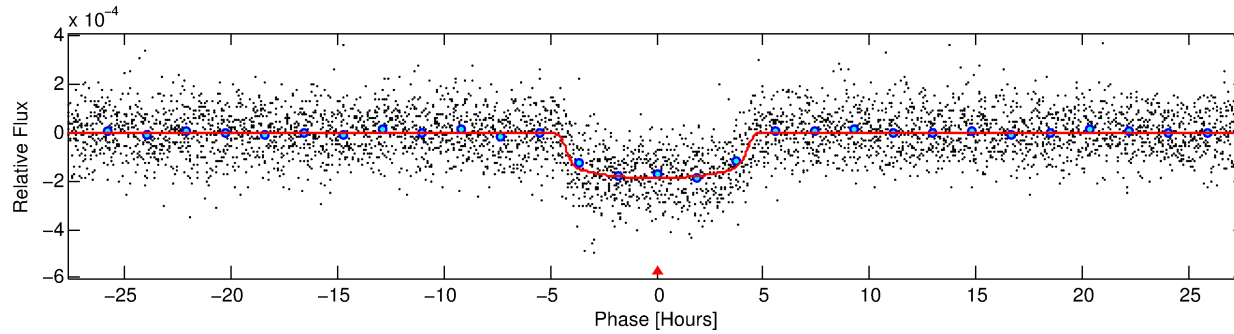
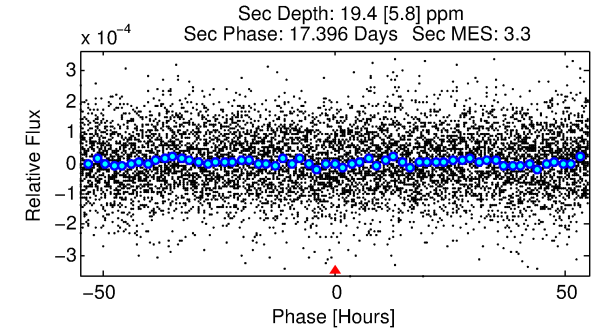
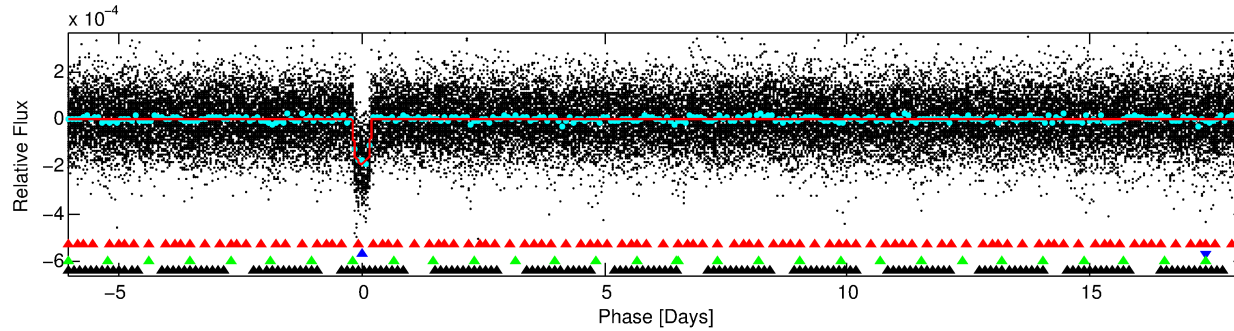
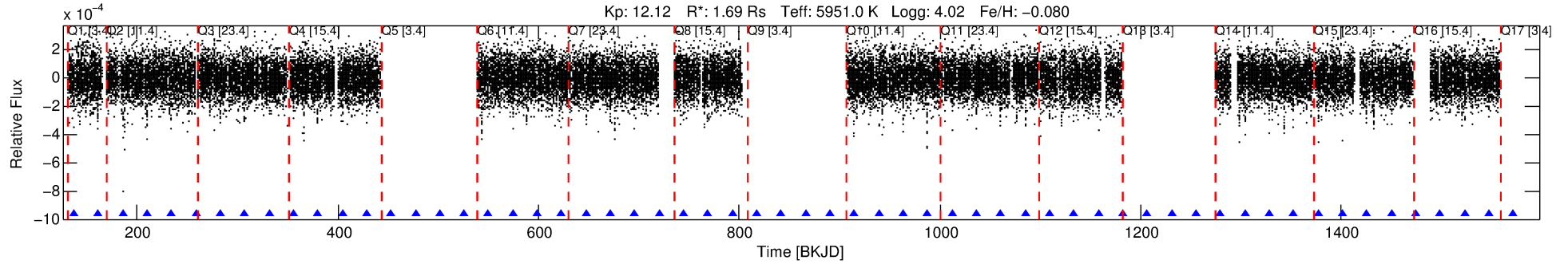
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005511081-02

No Significant Match Found

DV One-Page Summary

KIC: 5511081 Candidate: 2 of 4 Period: 24.311 d
KOI: K01930.02 Name: Kepler-338c Corr: 0.984



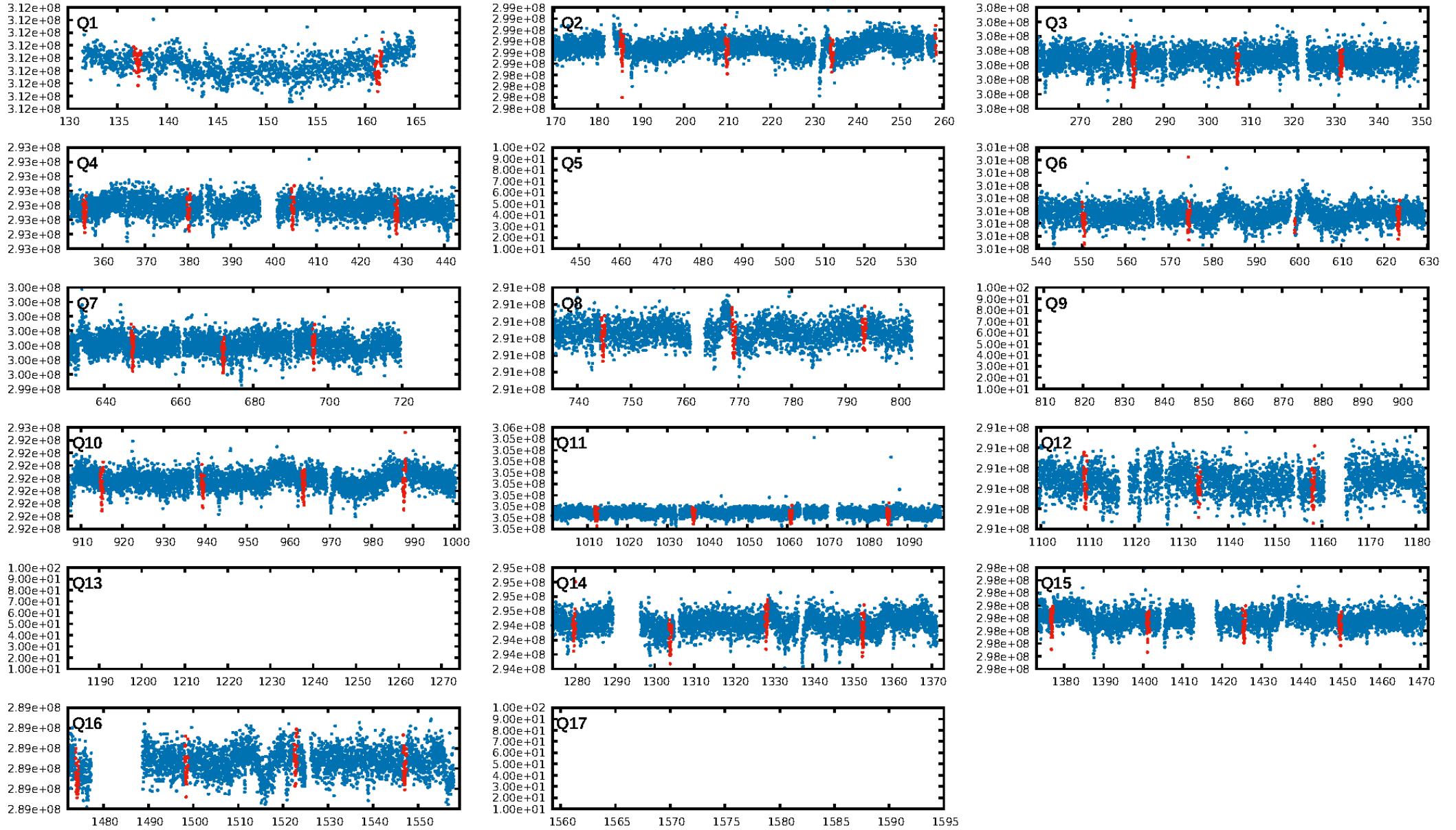
DV Fit Results:

Period = 24.31107 [0.00012] d
Epoch = 137.0384 [0.0039] BKJD
Rp/R* = 0.0147 [0.0007]
a/R* = 9.59 [2.00]
b = 0.90 [0.05]
Seff = 112.88 [9.78]
Teq = 831 [18] K
Rp = 2.72 [0.22] Re
a = 0.1689 [0.0088] AU
Ag = 41.01 [13.10] [3.05σ]
Teffp = 3252 [258] K [9.38σ]

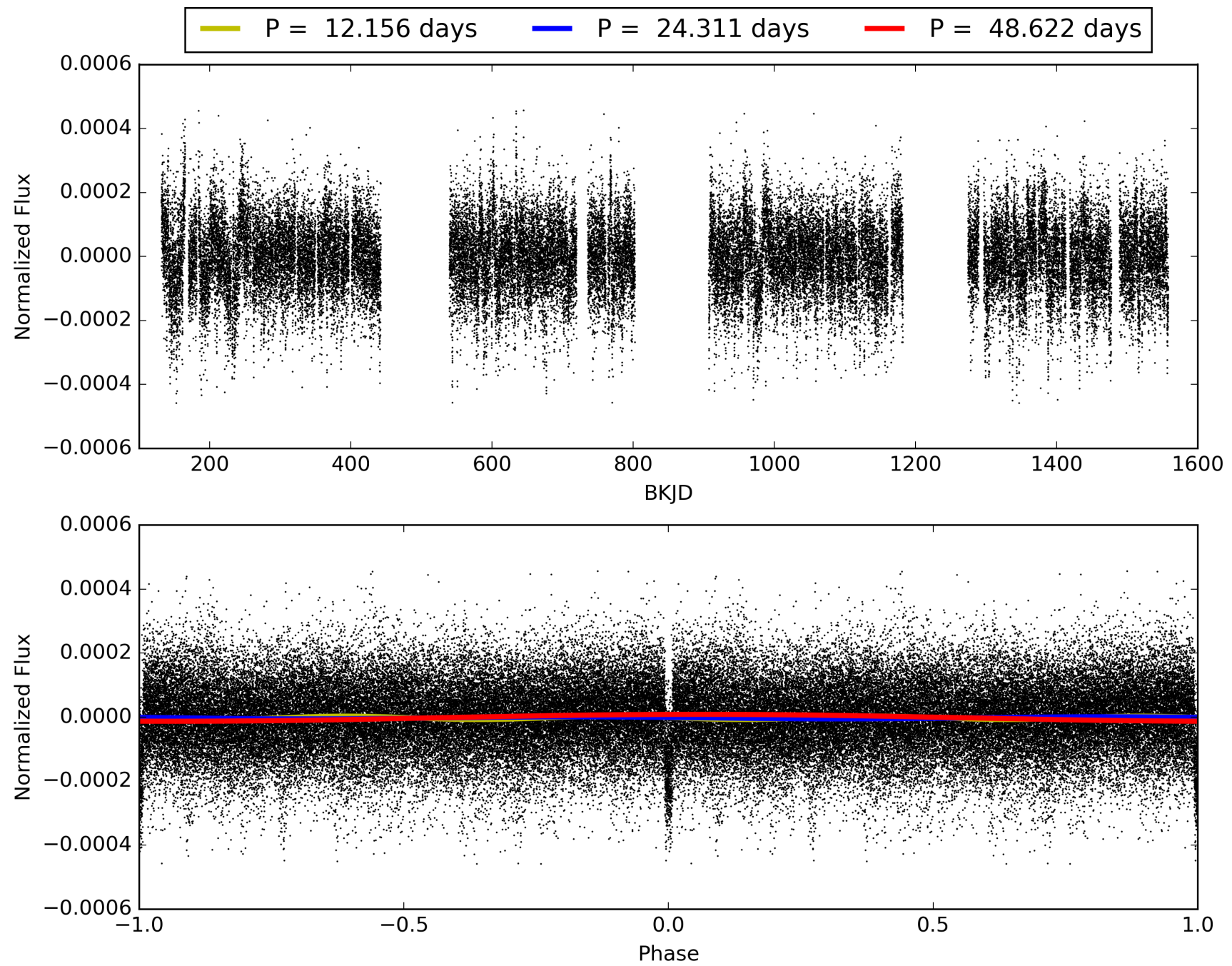
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.17σ]
LongPeriod-sig: 100.0% [34.44σ]
ModelChiSquare2-sig: 39.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.01e-199
RollingBand-fgt: 1.00 [41/41]
GhostDiagnostic-chr: 5.636
Centroid-sig: 0.2%
Centroid-so: 0.030 arcsec [0.07σ]
OotOffset-rm: 0.276 arcsec [0.55σ]
KicOffset-rm: 0.234 arcsec [0.70σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 005511081-02, PDC Light Curves

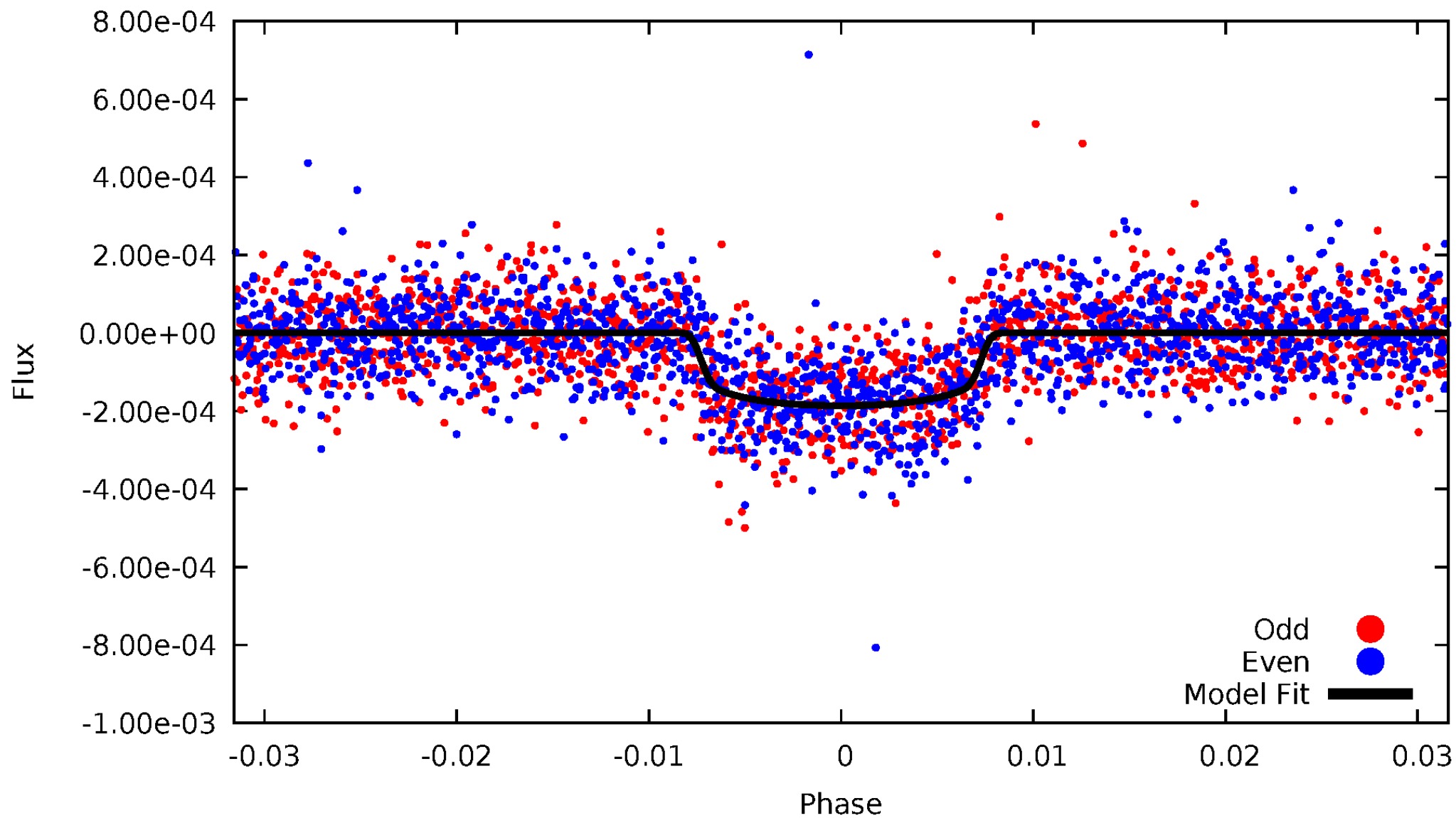


TCE 005511081-02



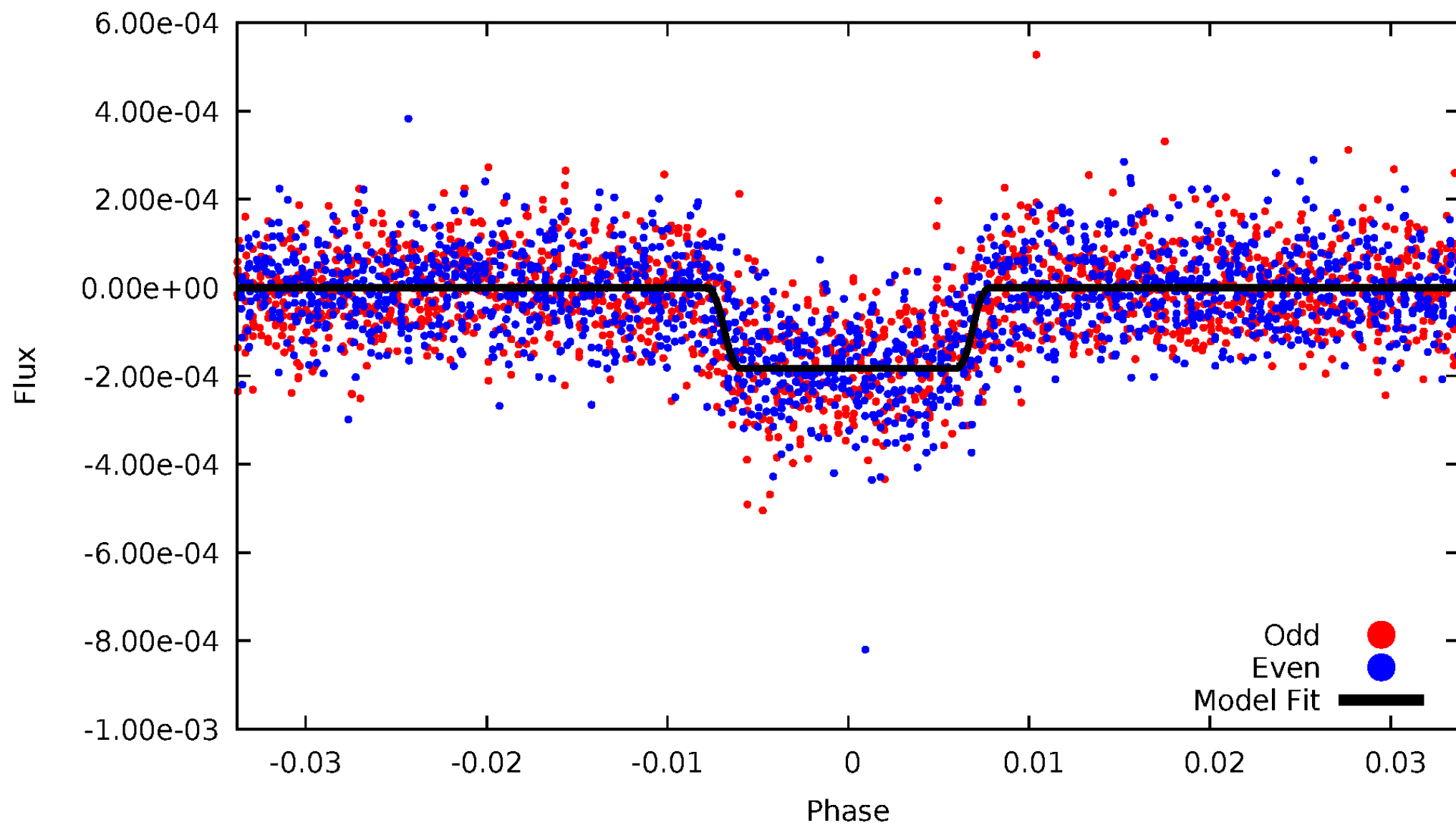
DV Odd/Even

TCE 005511081-02



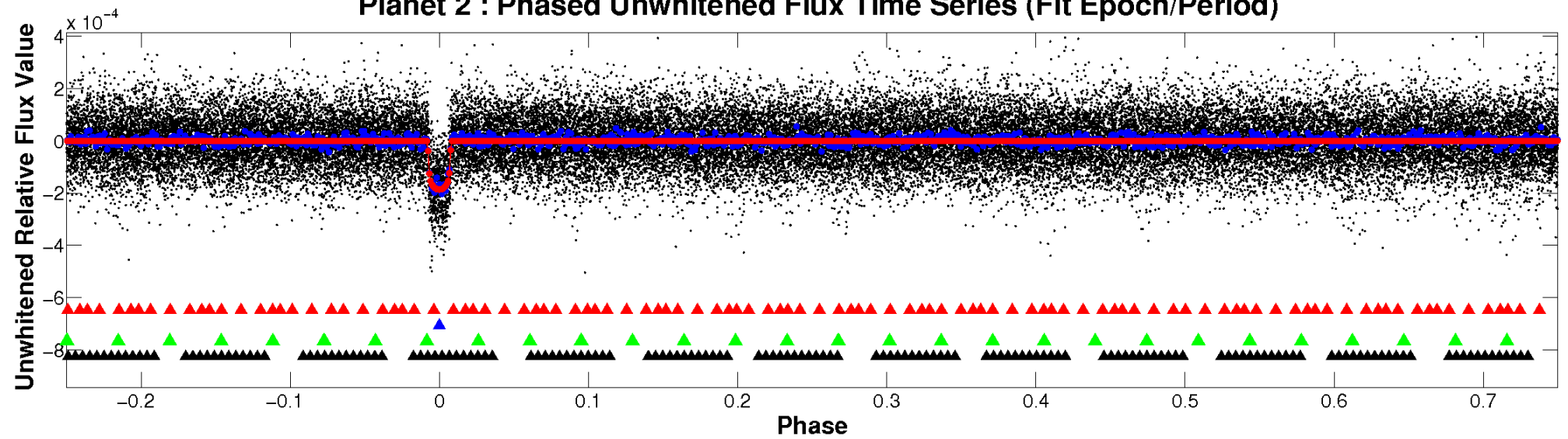
ALT Odd/Even

TCE 005511081-02

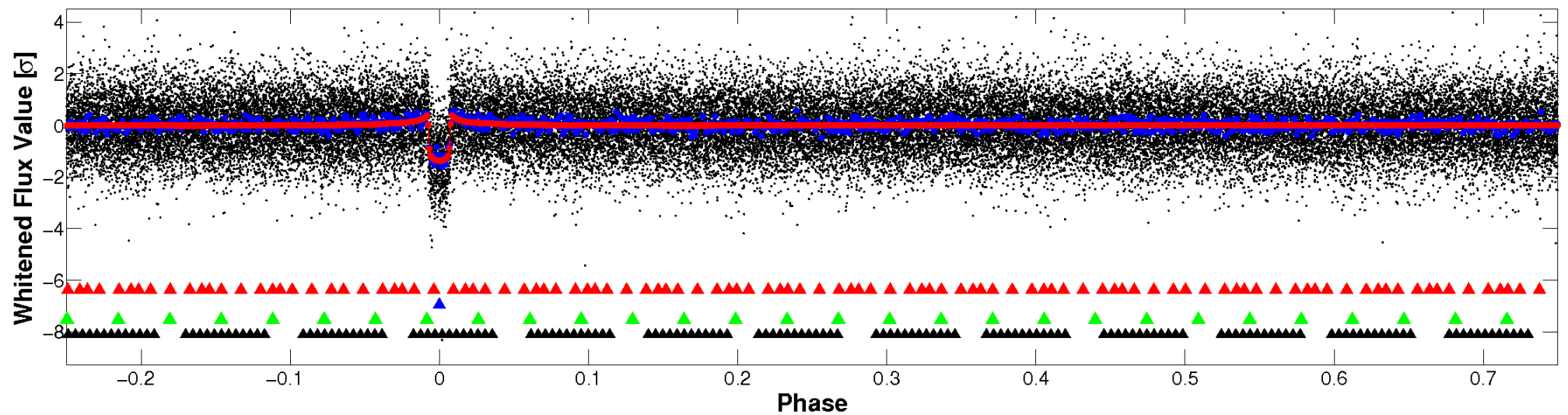


Non-Whitened Vs. Whitened Light Curve

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

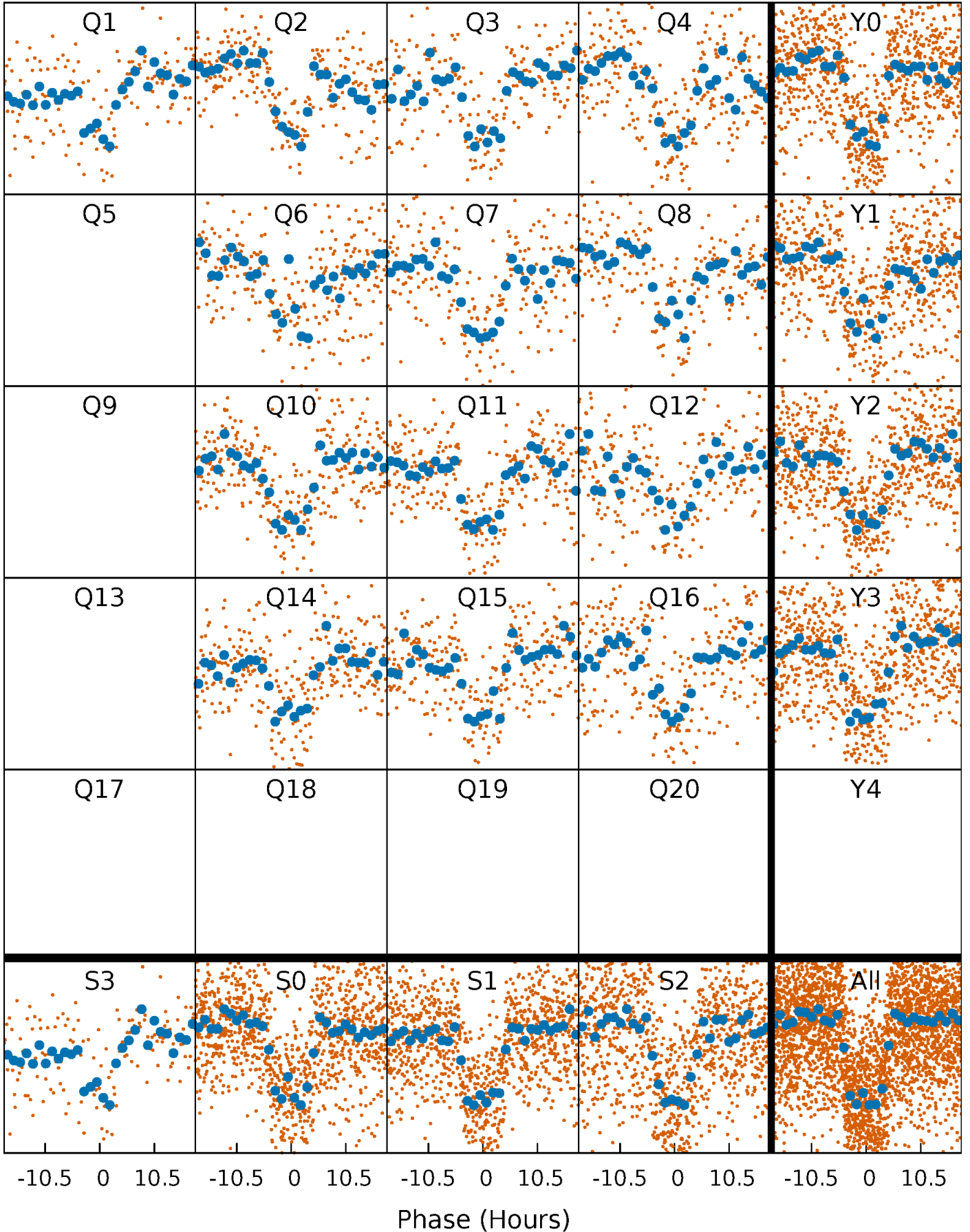


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



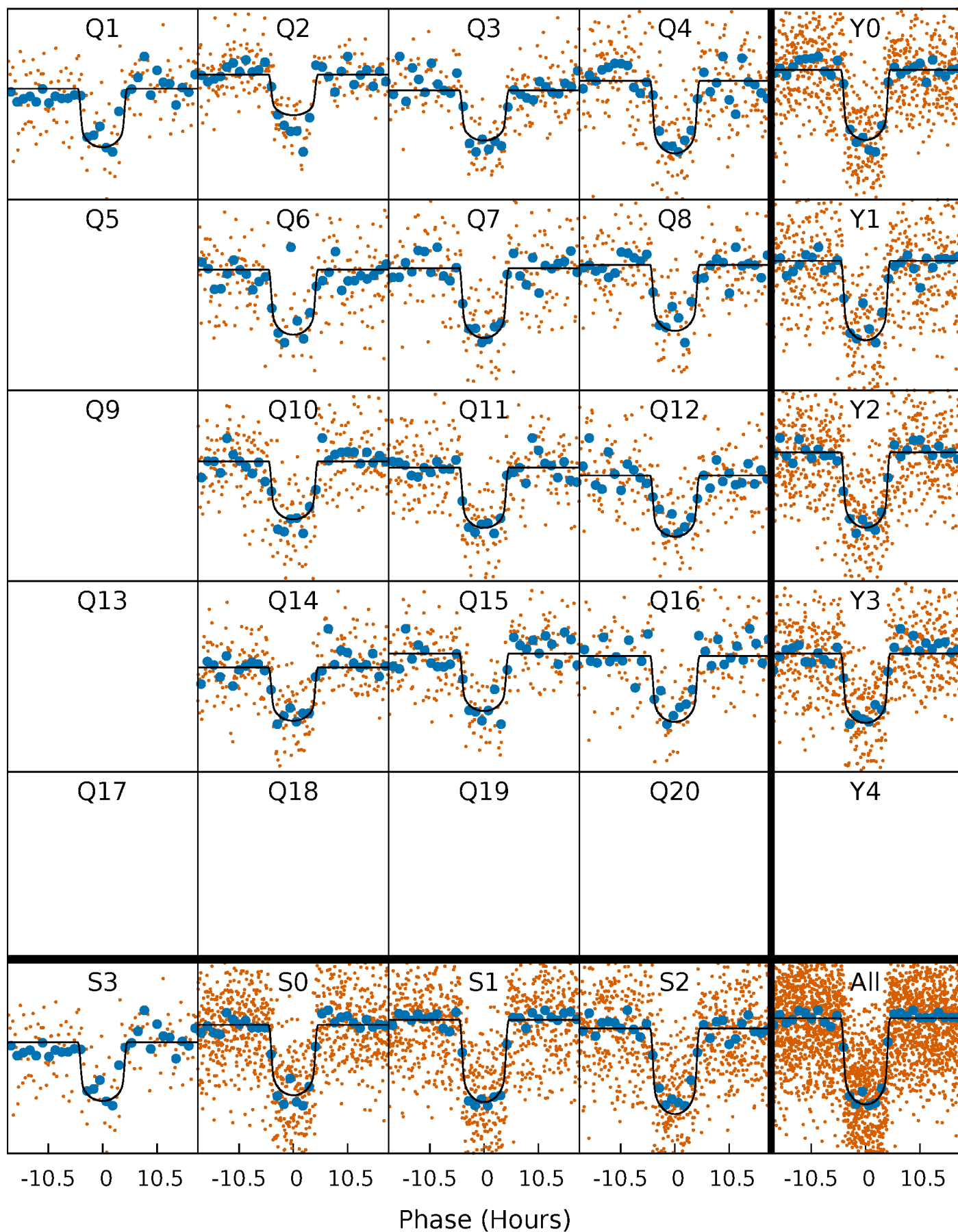
PDC Quarter-Phased Transit Curves

TCE 005511081-02 P= 24.311071 Days $T_0=137.038357$ (BKJD)



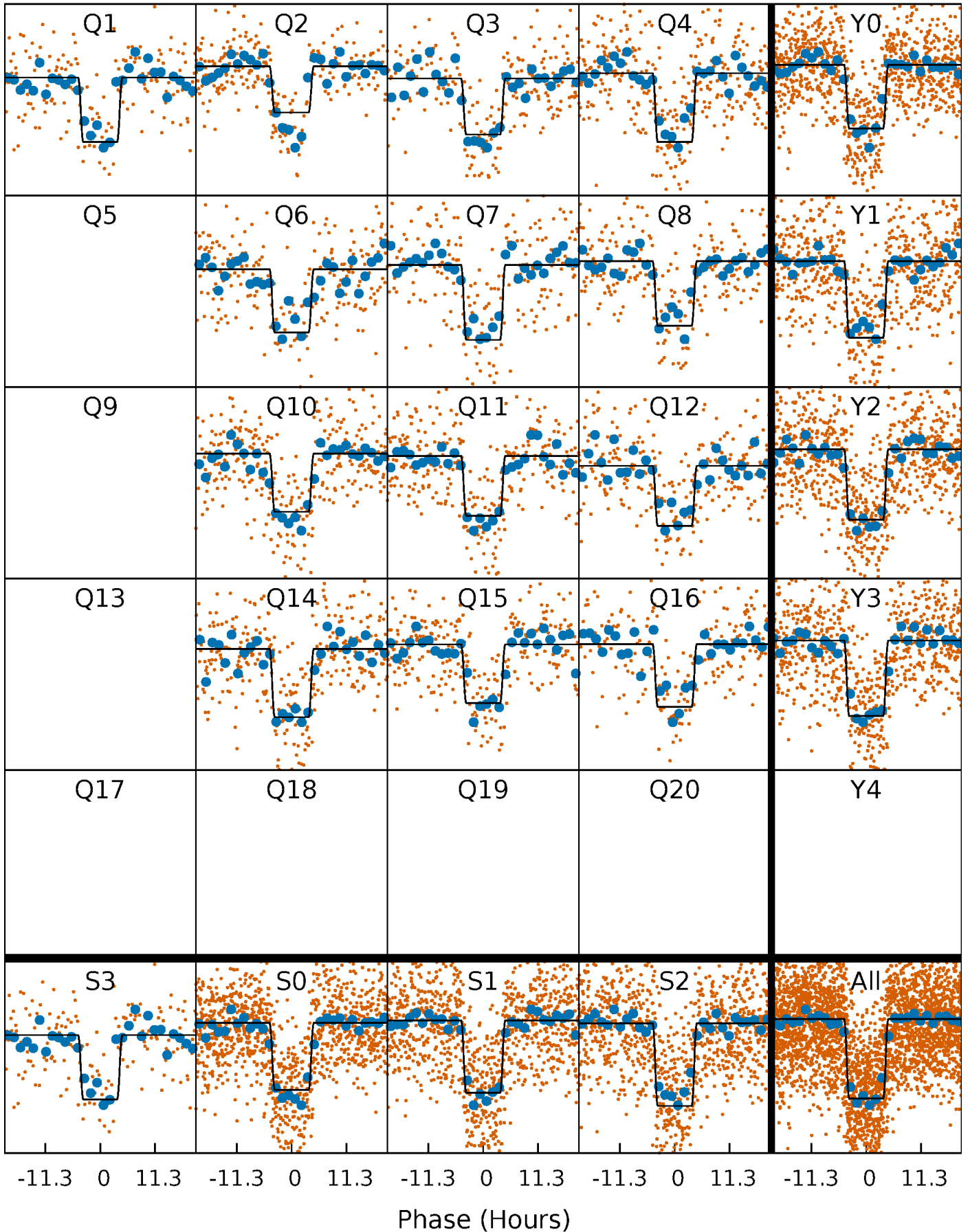
DV Quarter-Phased Transit Curves

TCE 005511081-02 P= 24.311071 Days $T_0=137.038357$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

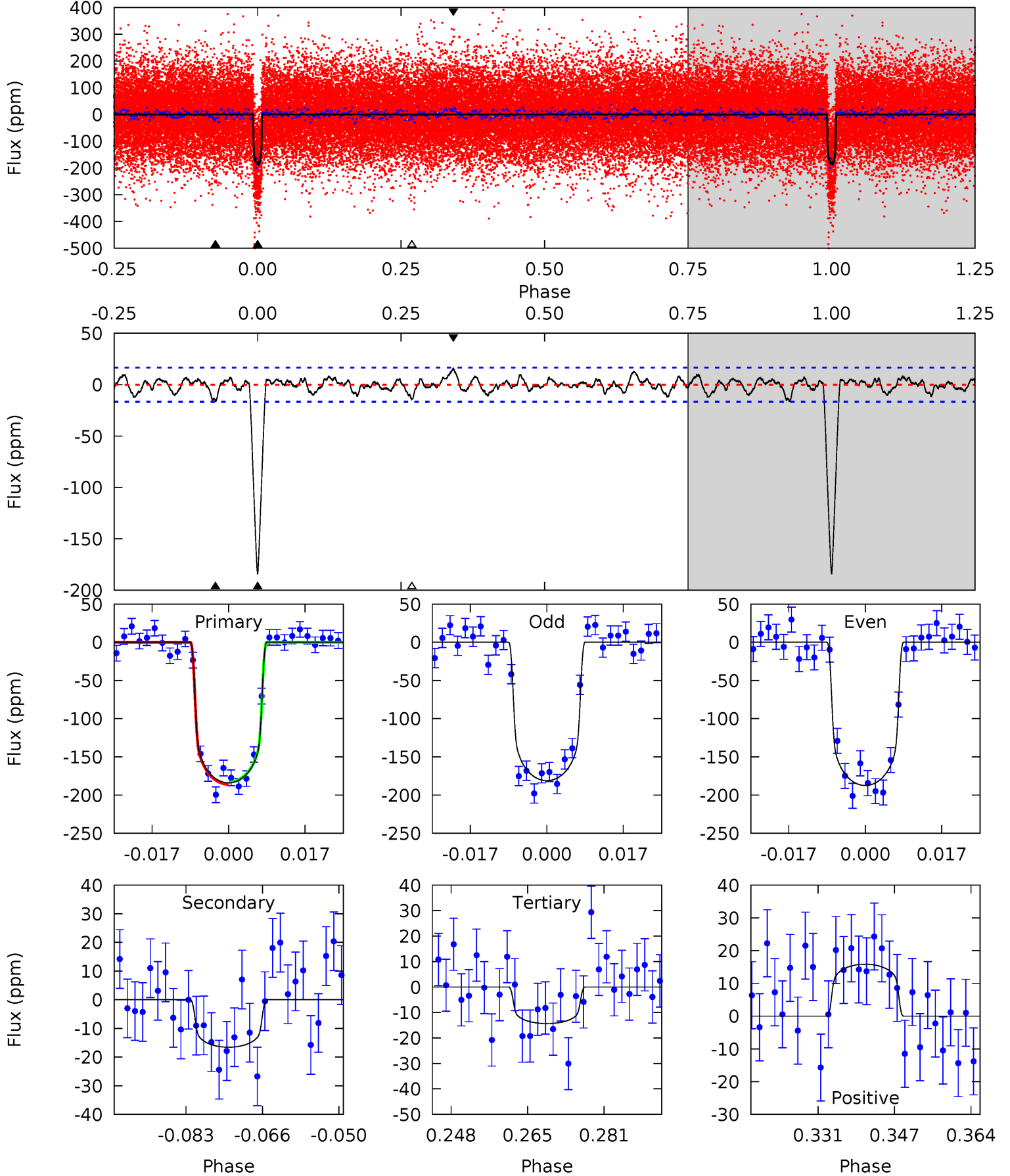
TCE 005511081-02 P= 24.310235 Days $T_0=137.061025$ (BKJD)



DV Model-Shift Uniqueness Test

005511081-02, P = 24.311071 Days, E = 112.727286 Days

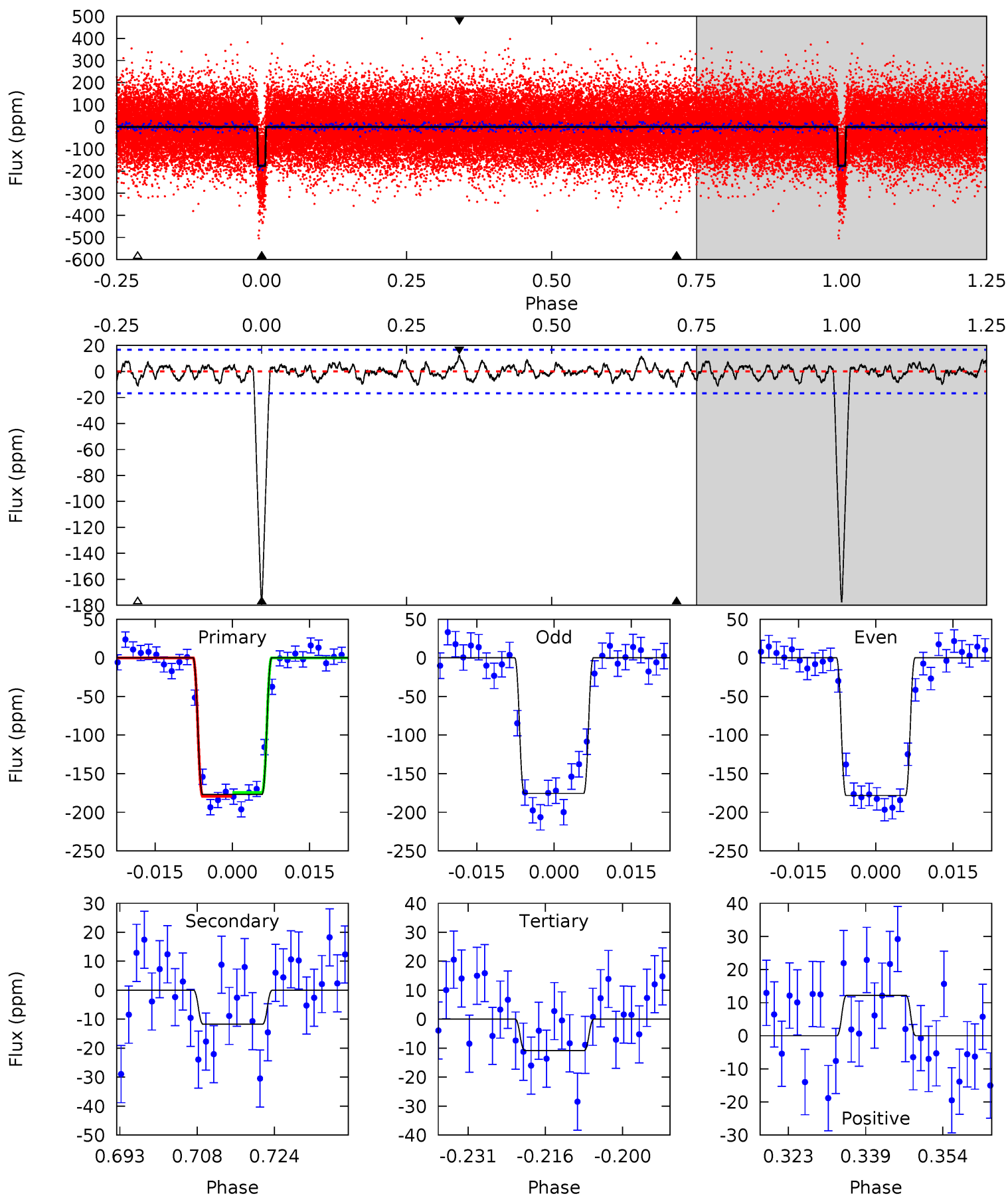
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.0	4.95	4.29	4.74	4.93	2.40	1.48	50.7	50.3	0.66	0.21	0.94	1.00	0.08	0.43



Alt Model-Shift Uniqueness Test

005511081-02, P = 24.310235 Days, E = 112.750790 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.3	3.47	3.20	3.60	4.94	2.42	1.22	49.1	48.7	0.27	-0.13	0.40	1.04	0.06	0.70



Stellar Parameters For KIC 005511081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5951^{+80}_{-80}	$4.017^{+0.033}_{-0.030}$	$-0.080^{+0.200}_{-0.150}$	$1.693^{+0.115}_{-0.094}$	$1.086^{+0.094}_{-0.070}$	$0.315^{+0.043}_{-0.038}$
	+1%/-1%	+1%/-1%	+250%/-188%	+7%/-6%	+9%/-6%	+14%/-12%
Source	SPE72	AST8	SPE72	DSEP		

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

Secondary Eclipse Parameters for KIC 005511081-02 / KOI 1930.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 3	$2.72^{+0.16}_{-0.16}$	1160^{+22}_{-23}	3571^{+140}_{-136}	35^{+9}_{-7}
Alt.	-12 ± 3	$2.49^{+0.16}_{-0.16}$	1161^{+24}_{-22}	3485^{+158}_{-200}	30^{+9}_{-9}

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

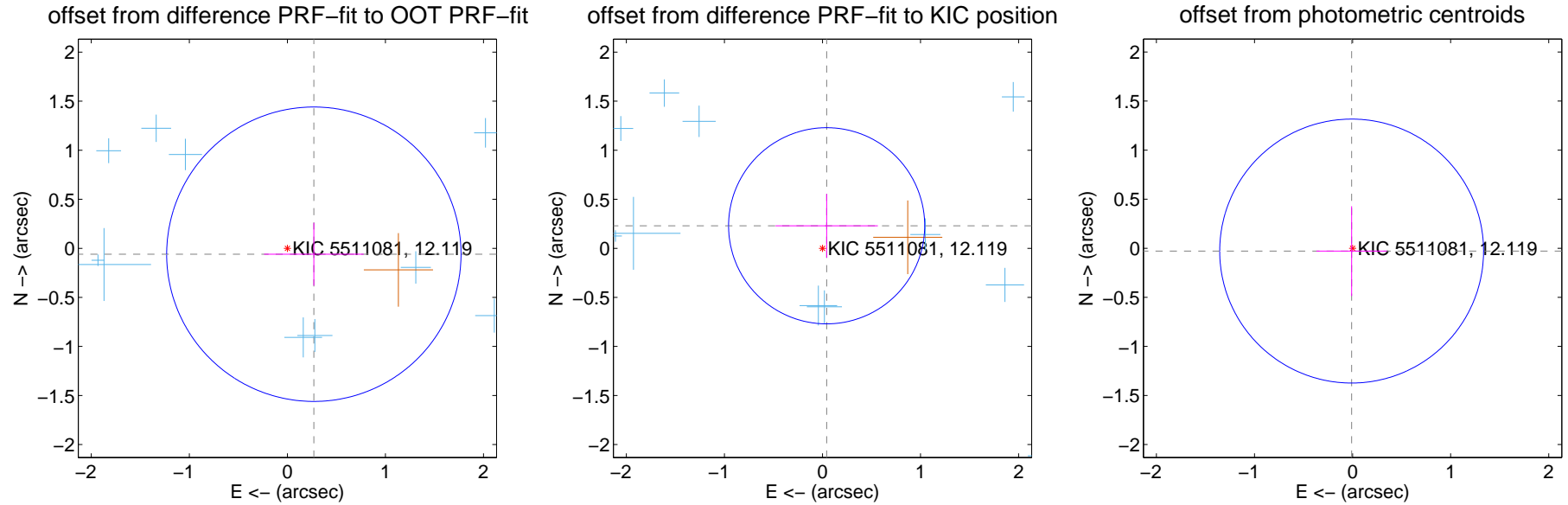
DV Centroid Data

Supplemental centroid analysis for 005511081-02. Kepler magnitude: 12.12. Transit SNR 32.88

There are 11 quarters with good PRF difference image offsets

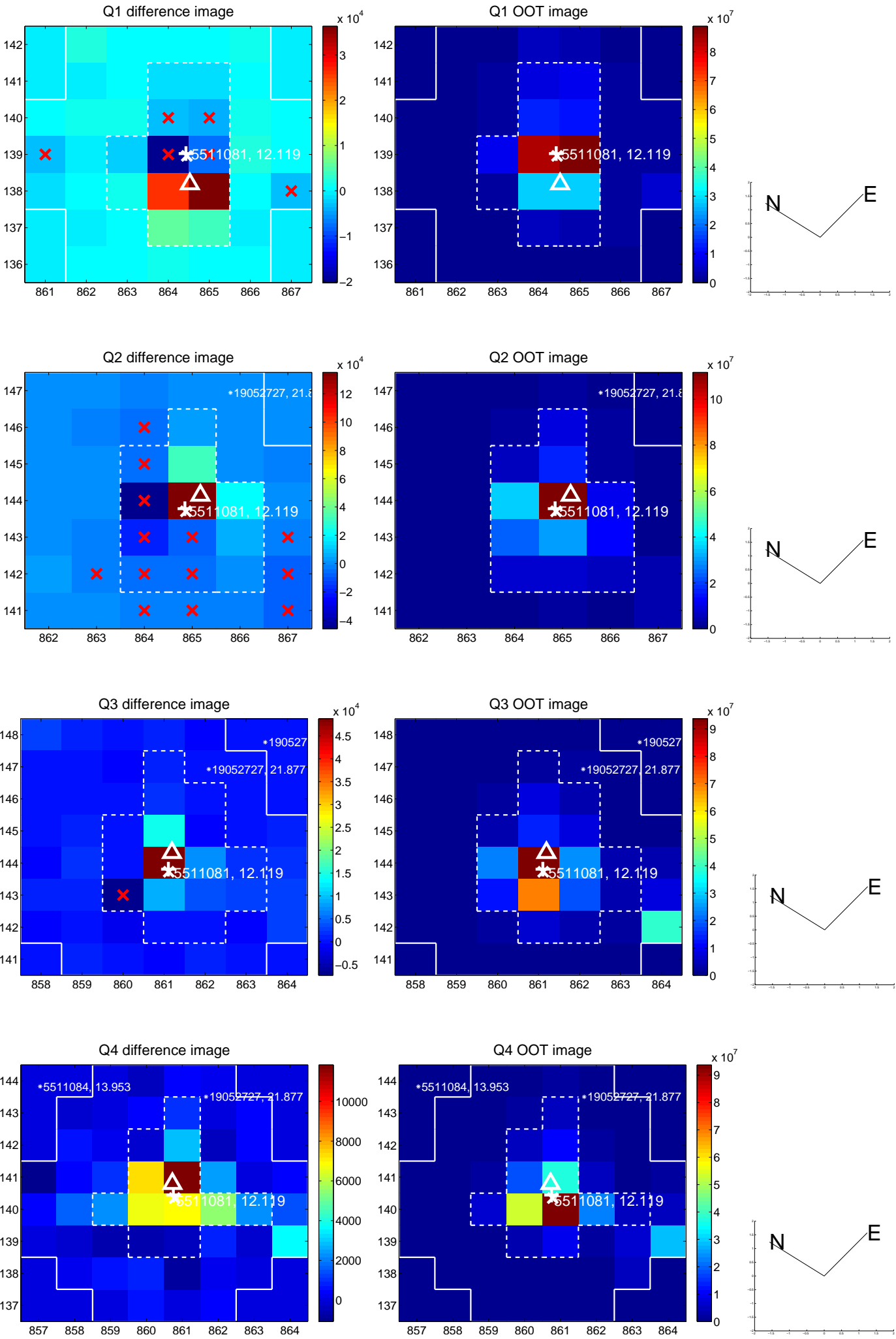
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.276 ± 0.500	0.55	-0.270 ± 0.507	-0.060 ± 0.320
PRF-fit source offset from KIC position	0.234 ± 0.333	0.70	-0.042 ± 0.522	0.230 ± 0.325
photometric centroid source offset	0.03 ± 0.45	0.07	0.01 ± 0.36	-0.03 ± 0.46

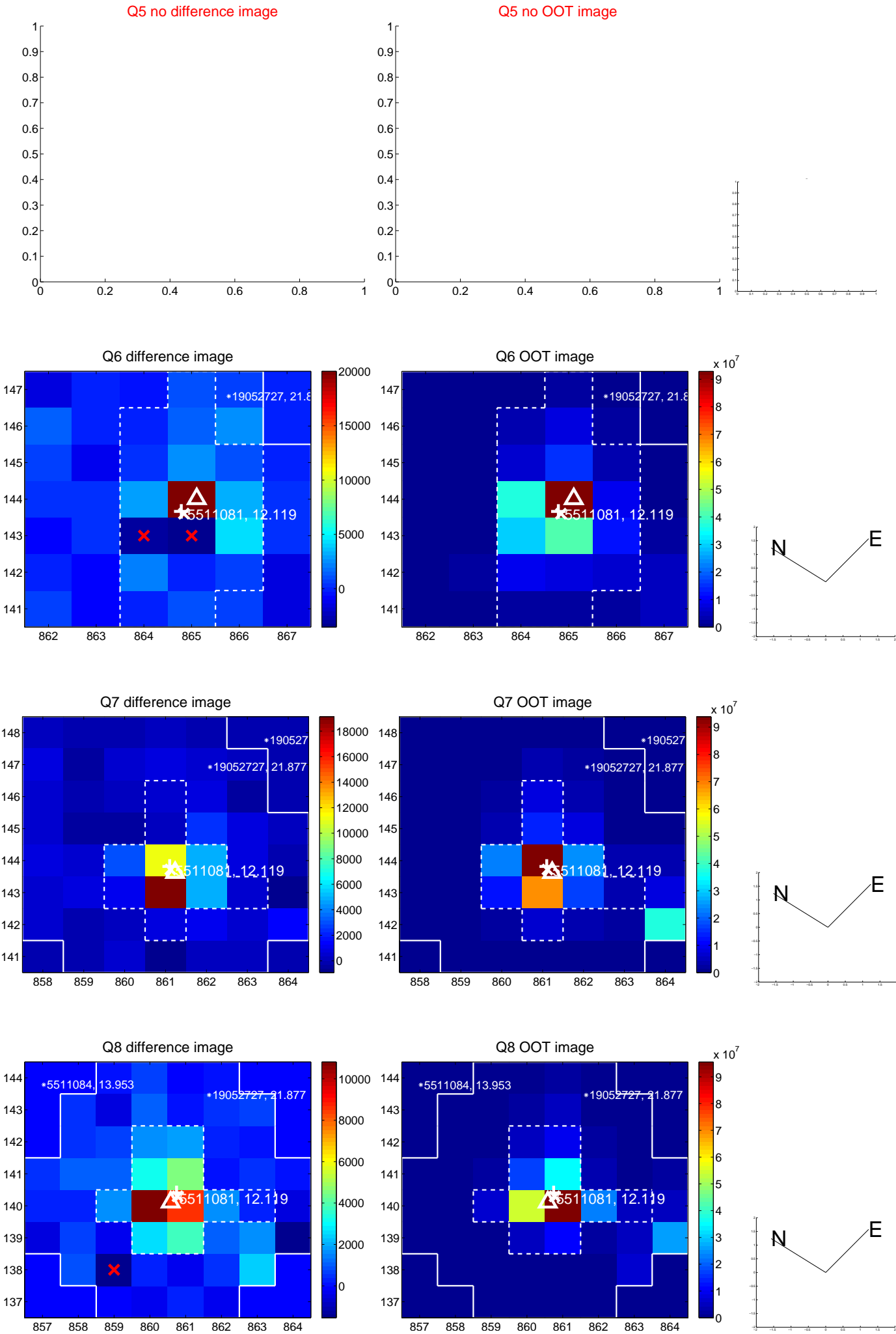


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

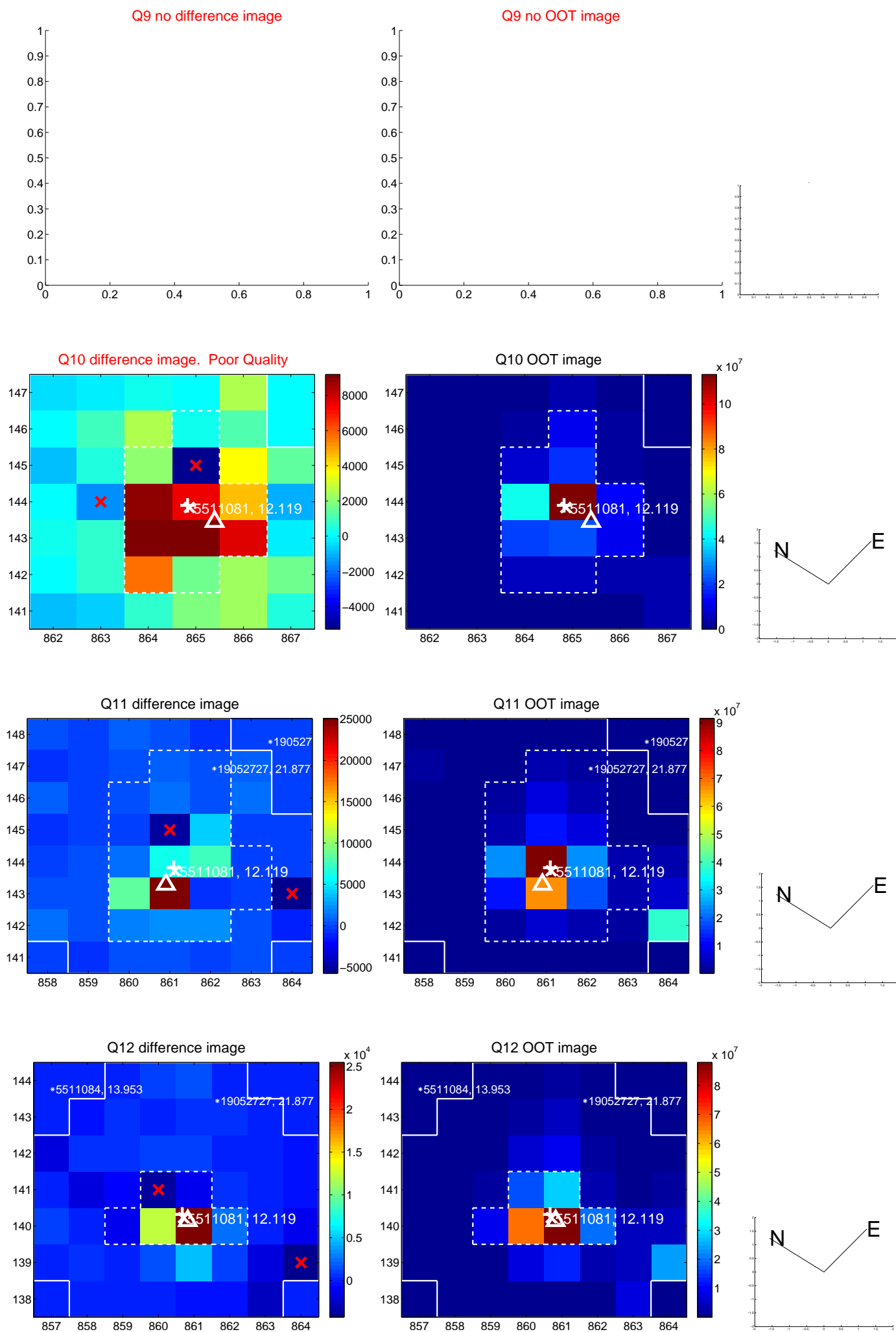
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



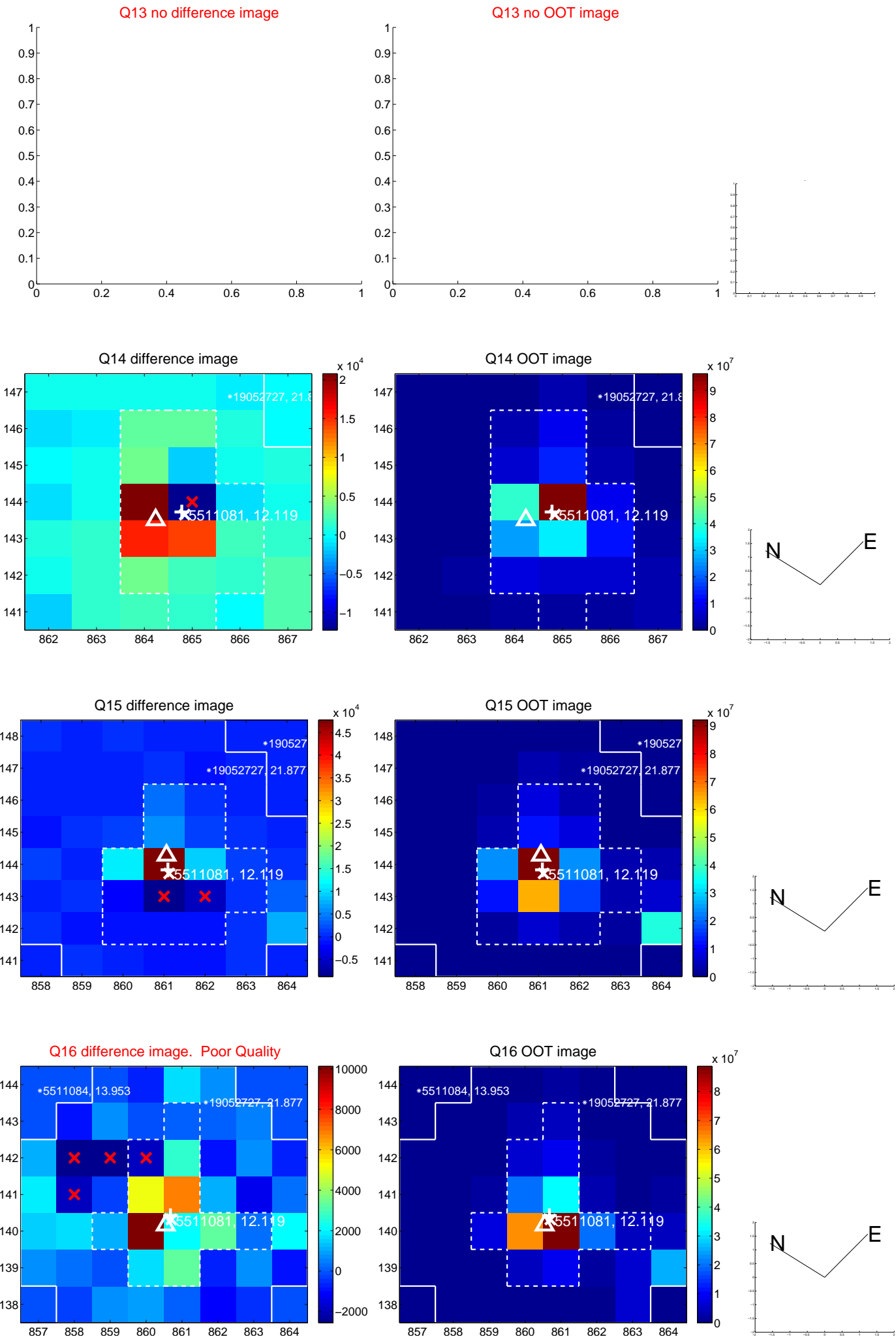
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



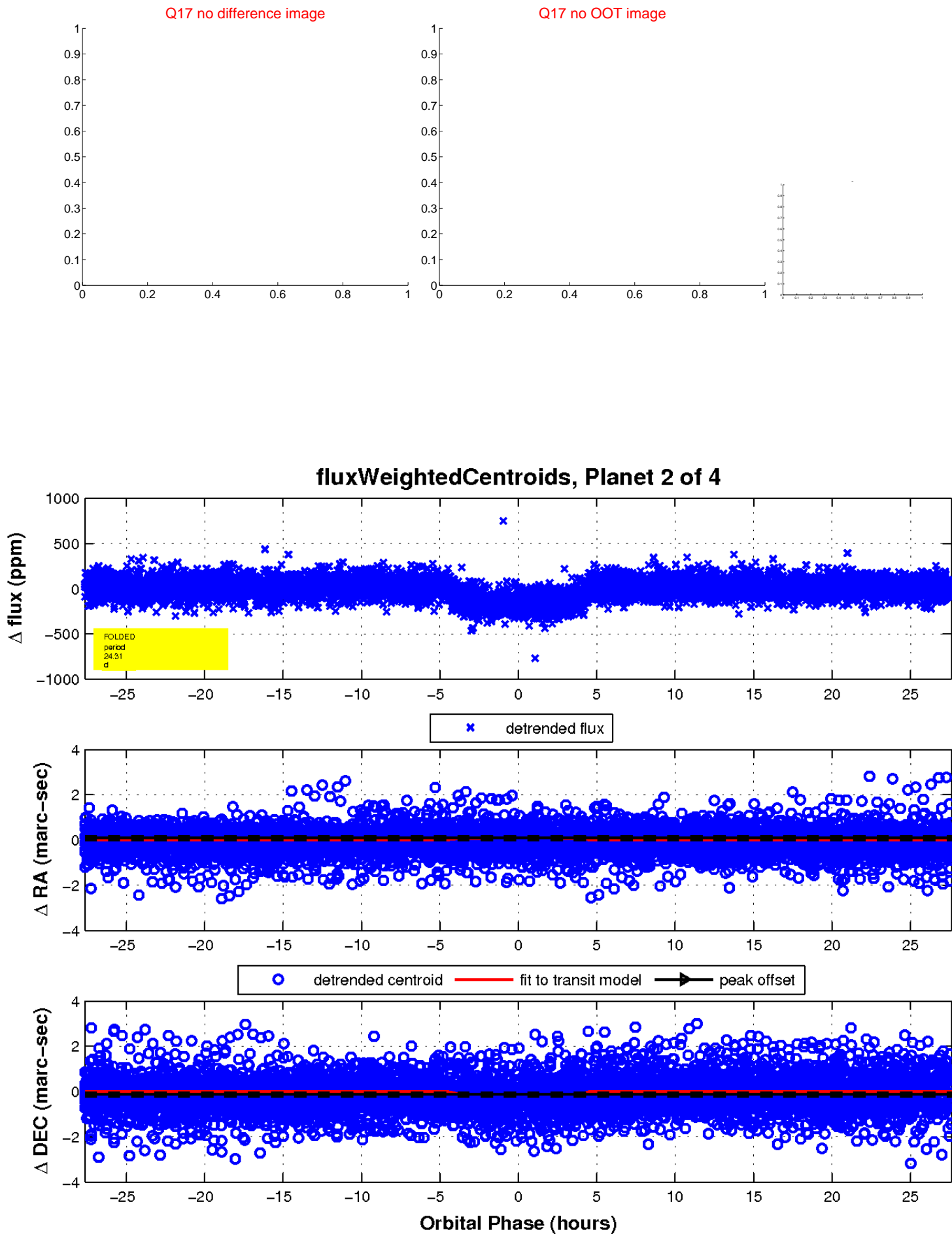
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

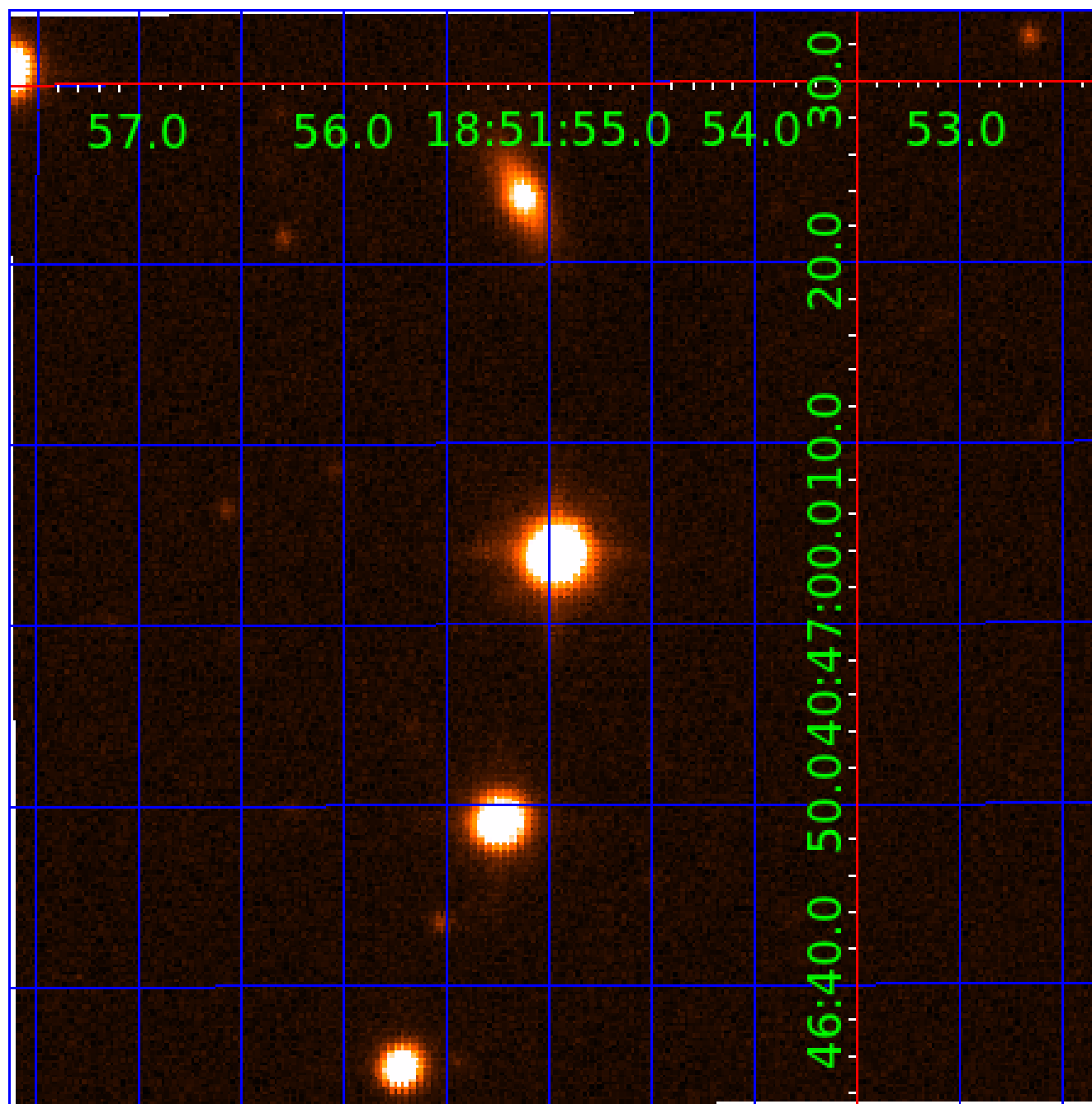


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005511081

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})
005511081-01	OBS	1930.01	13.727143	138.741926	198.9	7.691	37.9	42.5	1.69	5951	2.78	241.87
005511081-02	OBS	1930.02	24.311071	137.038357	186.5	9.211	31.8	32.9	1.69	5951	2.72	112.88
005511081-03	OBS	1930.03	44.430298	143.546903	225.8	10.570	29.4	30.7	1.69	5951	2.86	50.52
005511081-04	OBS	1930.04	9.341427	132.389716	76.9	6.329	18.7	20.5	1.69	5951	1.74	404.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005511081-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-03	OBS	PC	0.90	0	0	0	0	CENT_KIC_POS
005511081-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

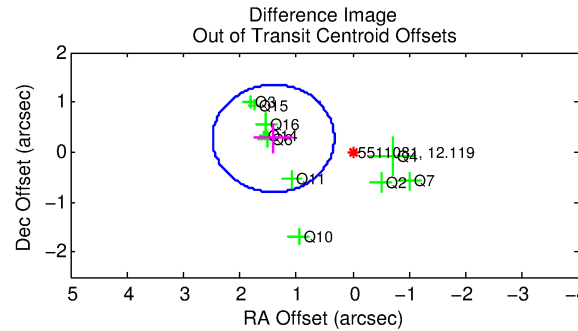
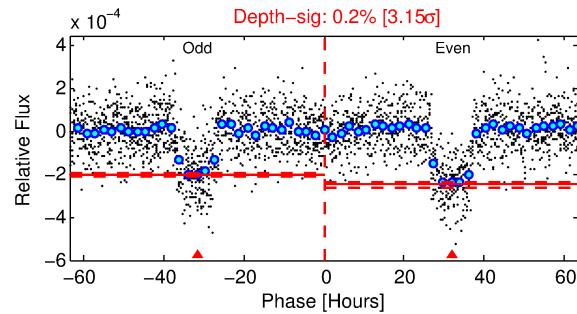
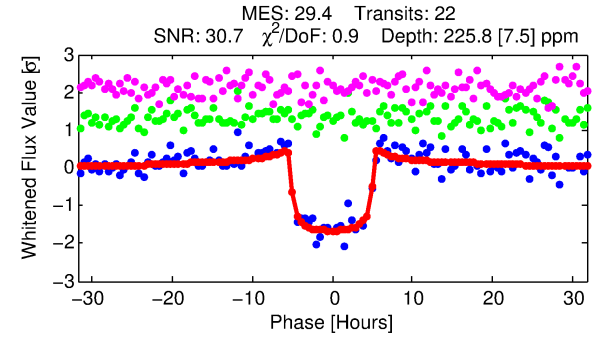
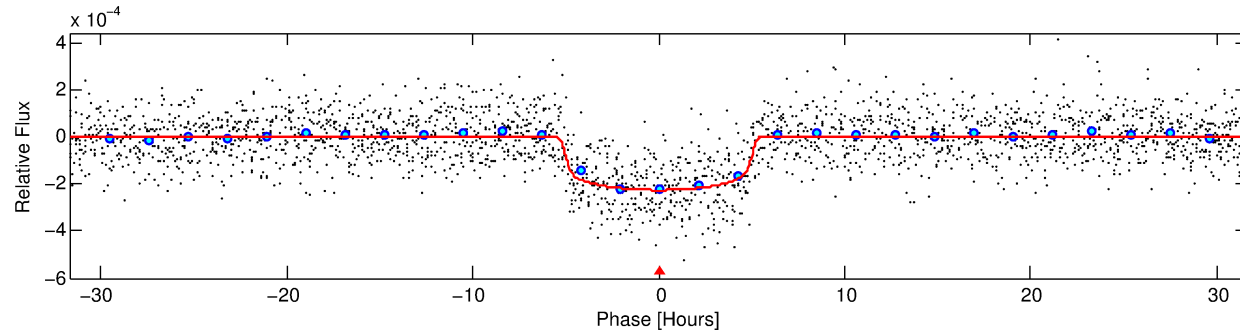
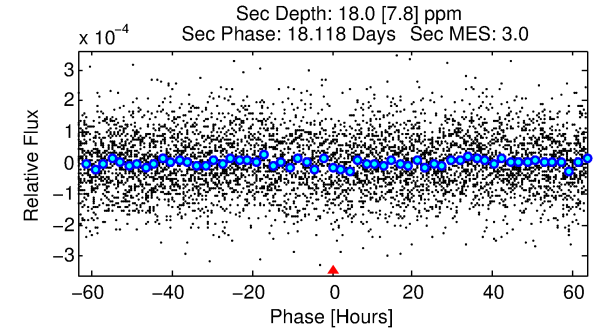
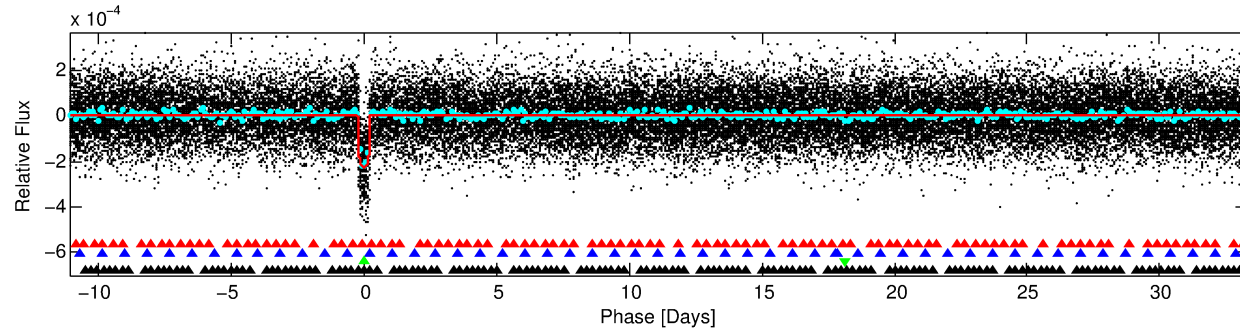
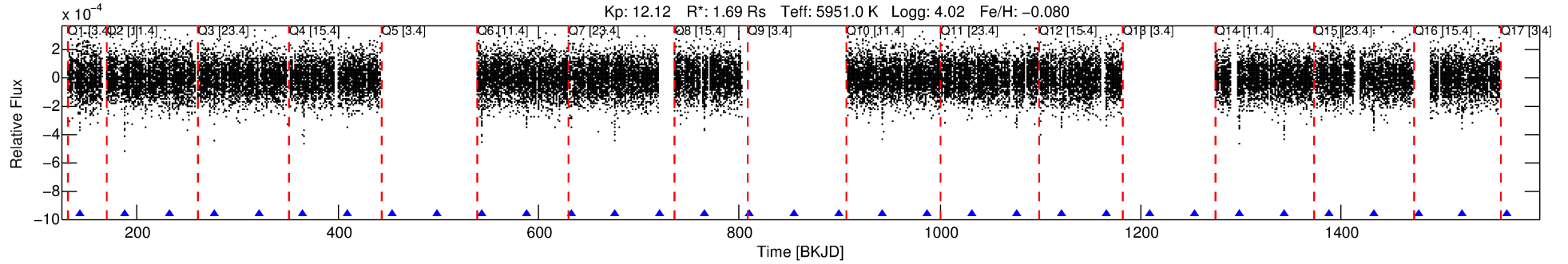
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005511081-03

No Significant Match Found

DV One-Page Summary

KIC: 5511081 Candidate: 3 of 4 Period: 44.430 d
KOI: K01930.03 Name: Kepler-338d Corr: 0.989



DV Fit Results:

Period = 44.43030 [0.00024] d
Epoch = 143.5469 [0.0044] BKJD
Rp/R* = 0.0155 [0.0012]
a/R* = 18.88 [6.97]
b = 0.83 [0.14]
Seff = 50.52 [4.38]
Teq = 680 [15] K
Rp = 2.86 [0.30] Re
a = 0.2525 [0.0131] AU
Ag = 77.36 [36.13] [2.11σ]
Teffp = 3117 [363] K [6.72σ]

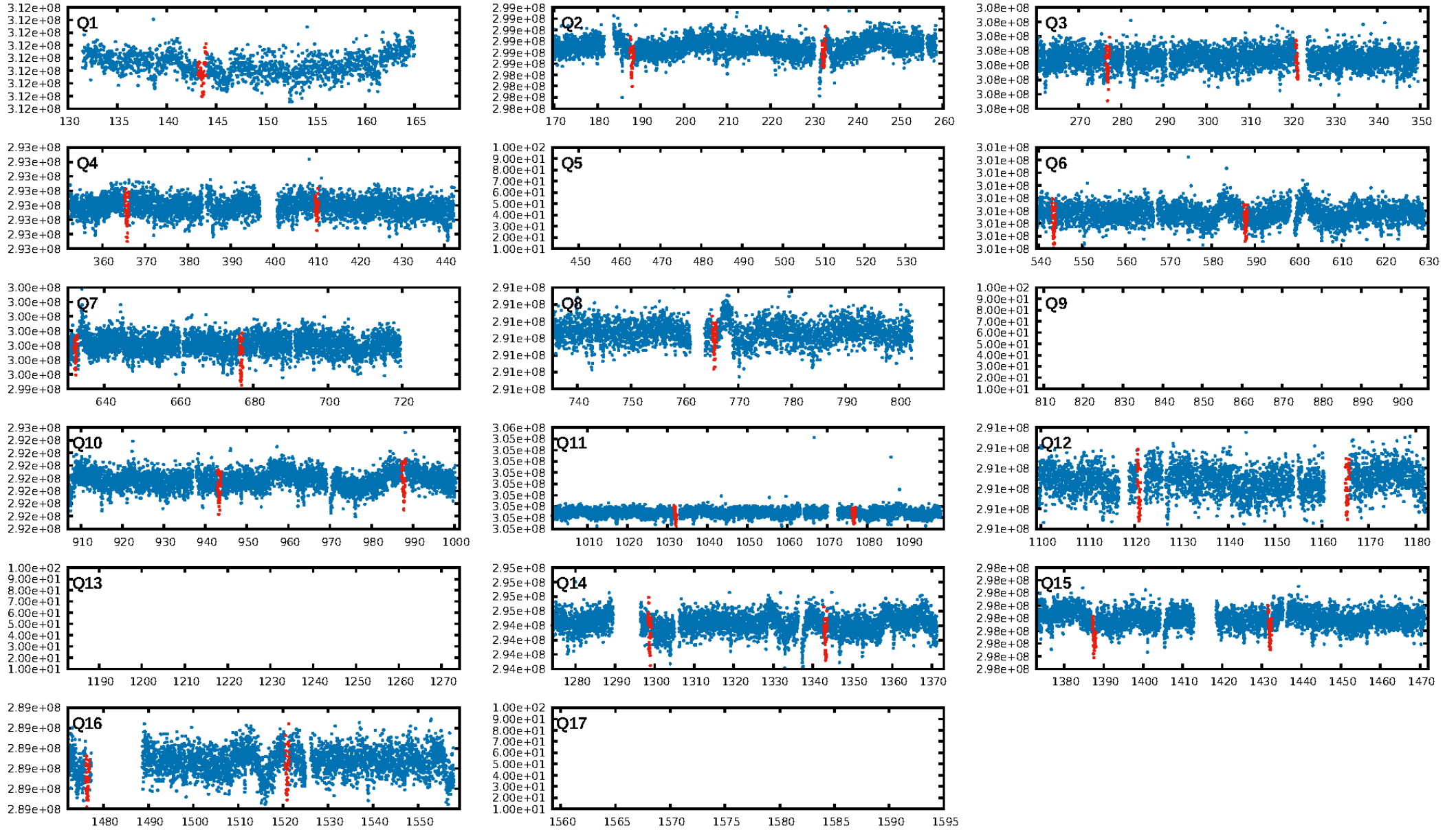
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.44σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.30e-156
RollingBand-fgt: 1.00 [21/21]
GhostDiagnostic-chr: 8.323
Centroid-sig: 34.3%
Centroid-so: 0.553 arcsec [1.09σ]
OotOffset-rm: 1.433 arcsec [4.00σ]
KicOffset-rm: 1.663 arcsec [4.85σ]
OotOffset-st: 4/4/2/0 [10]
KicOffset-st: 4/4/2/0 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 0.75 [9/12]

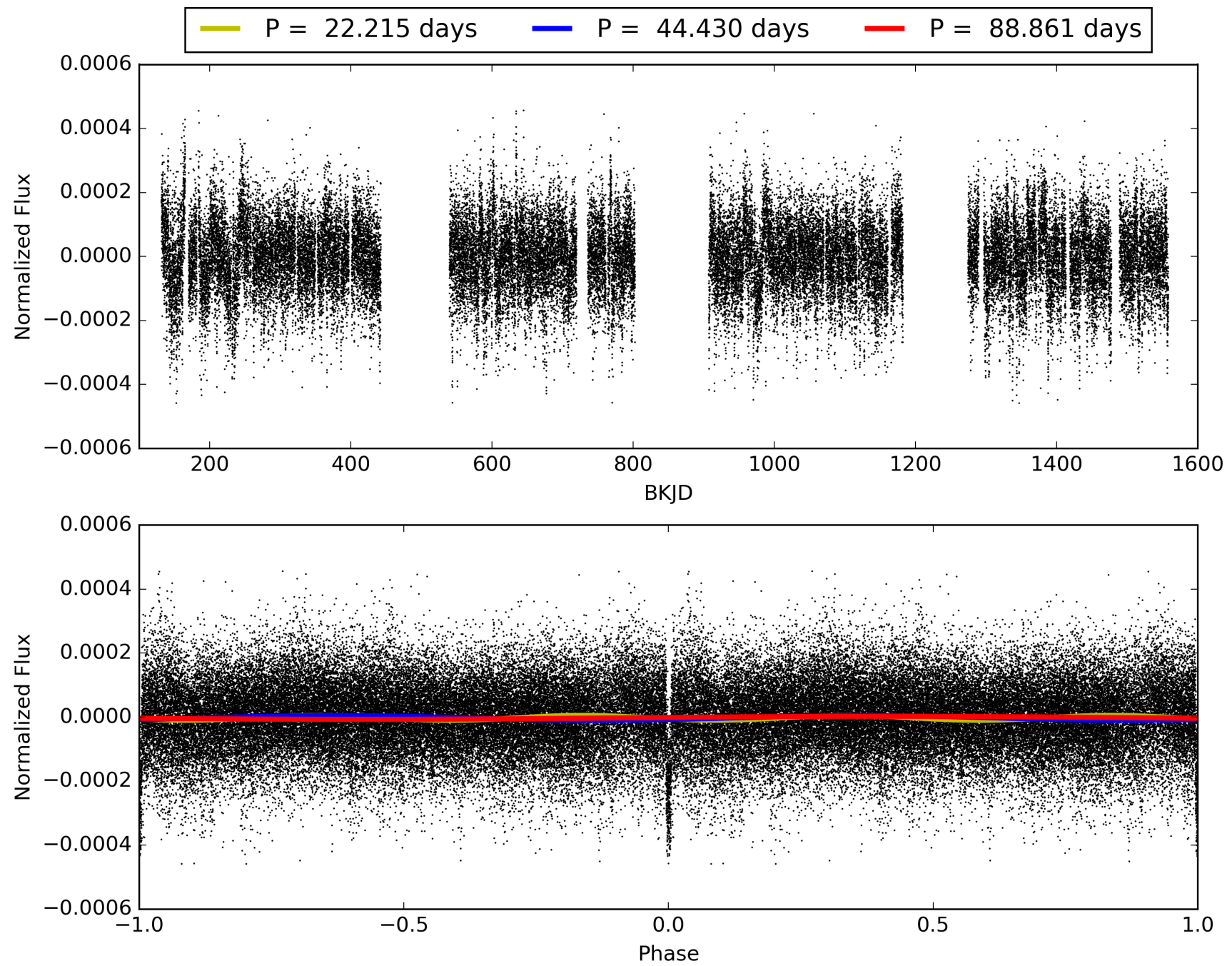
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:34:08 Z

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

TCE 005511081-03, PDC Light Curves

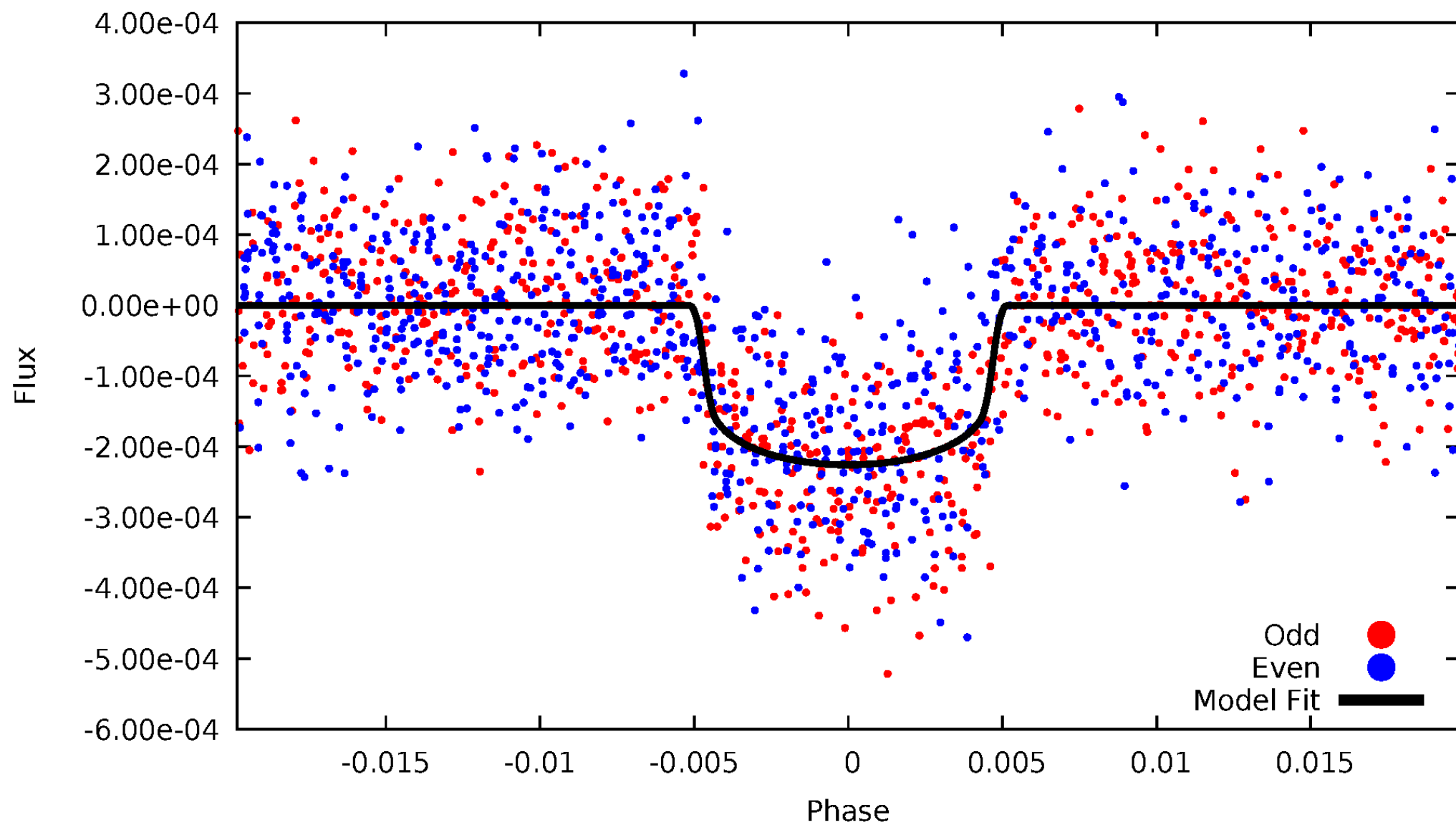


TCE 005511081-03



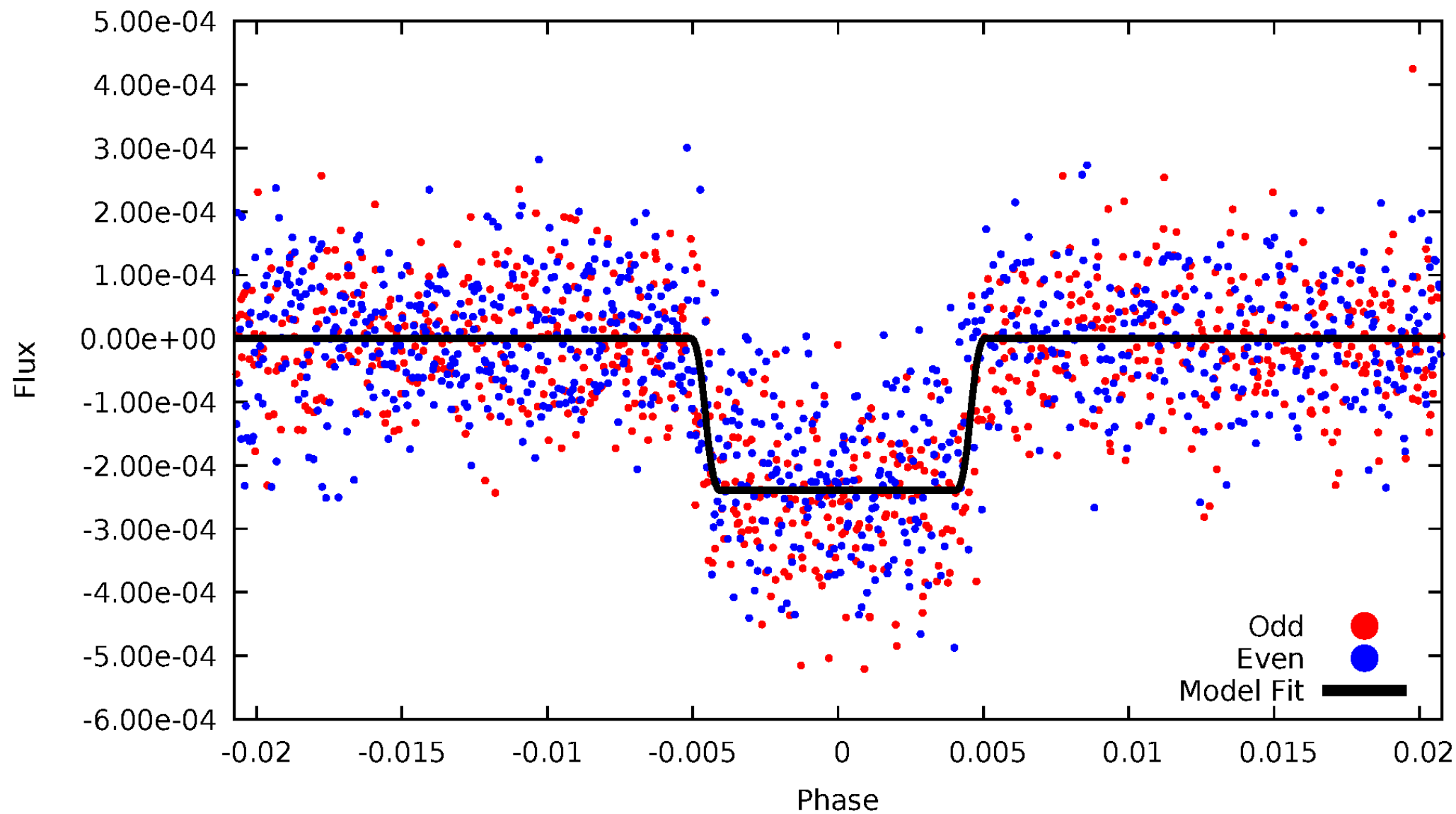
DV Odd/Even

TCE 005511081-03



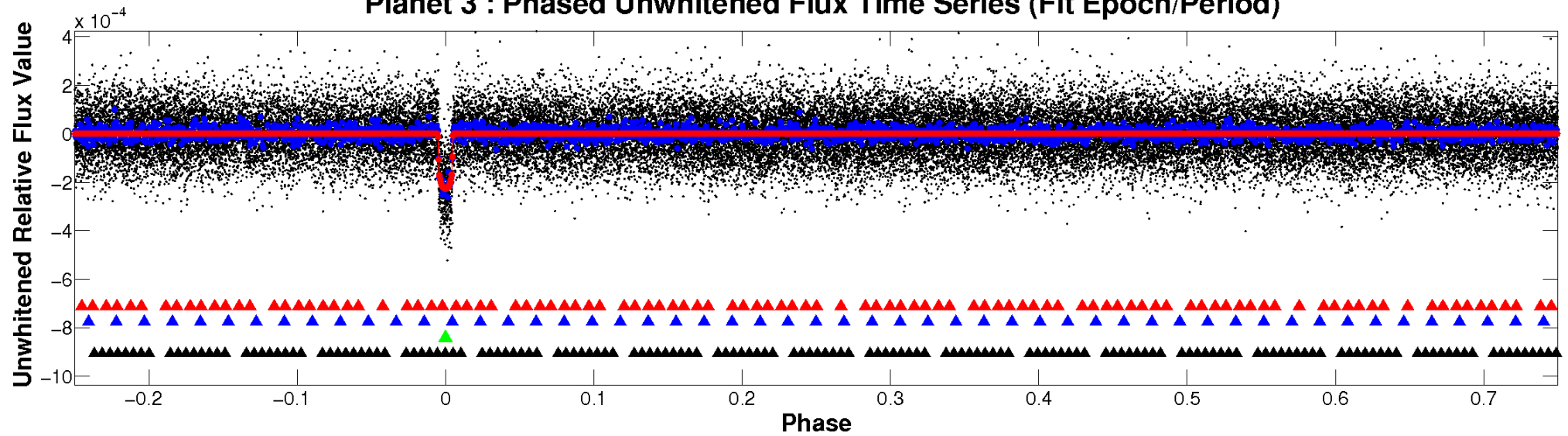
ALT Odd/Even

TCE 005511081-03

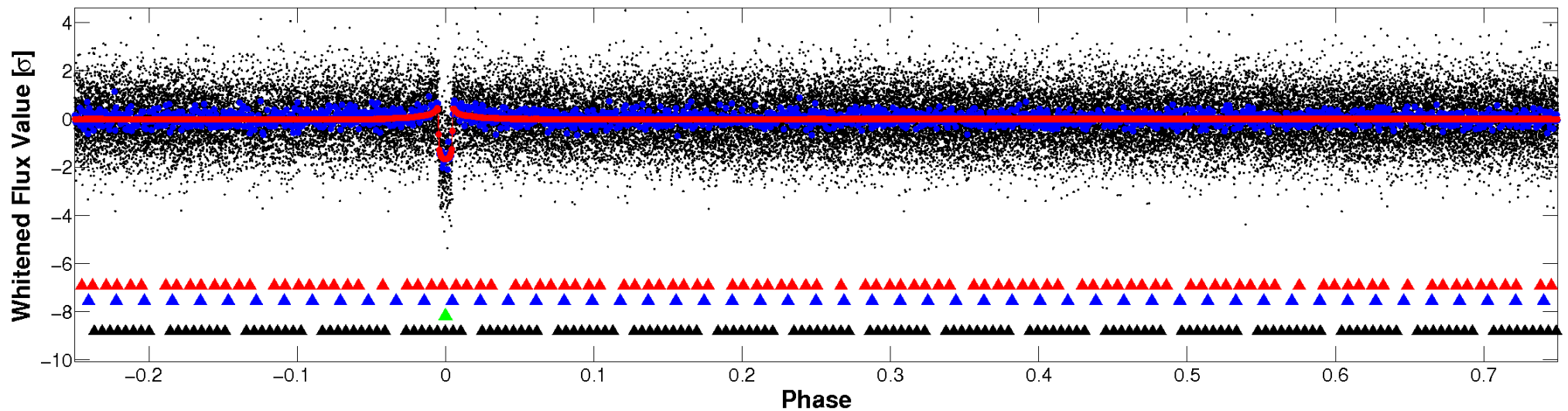


Non-Whitened Vs. Whitened Light Curve

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

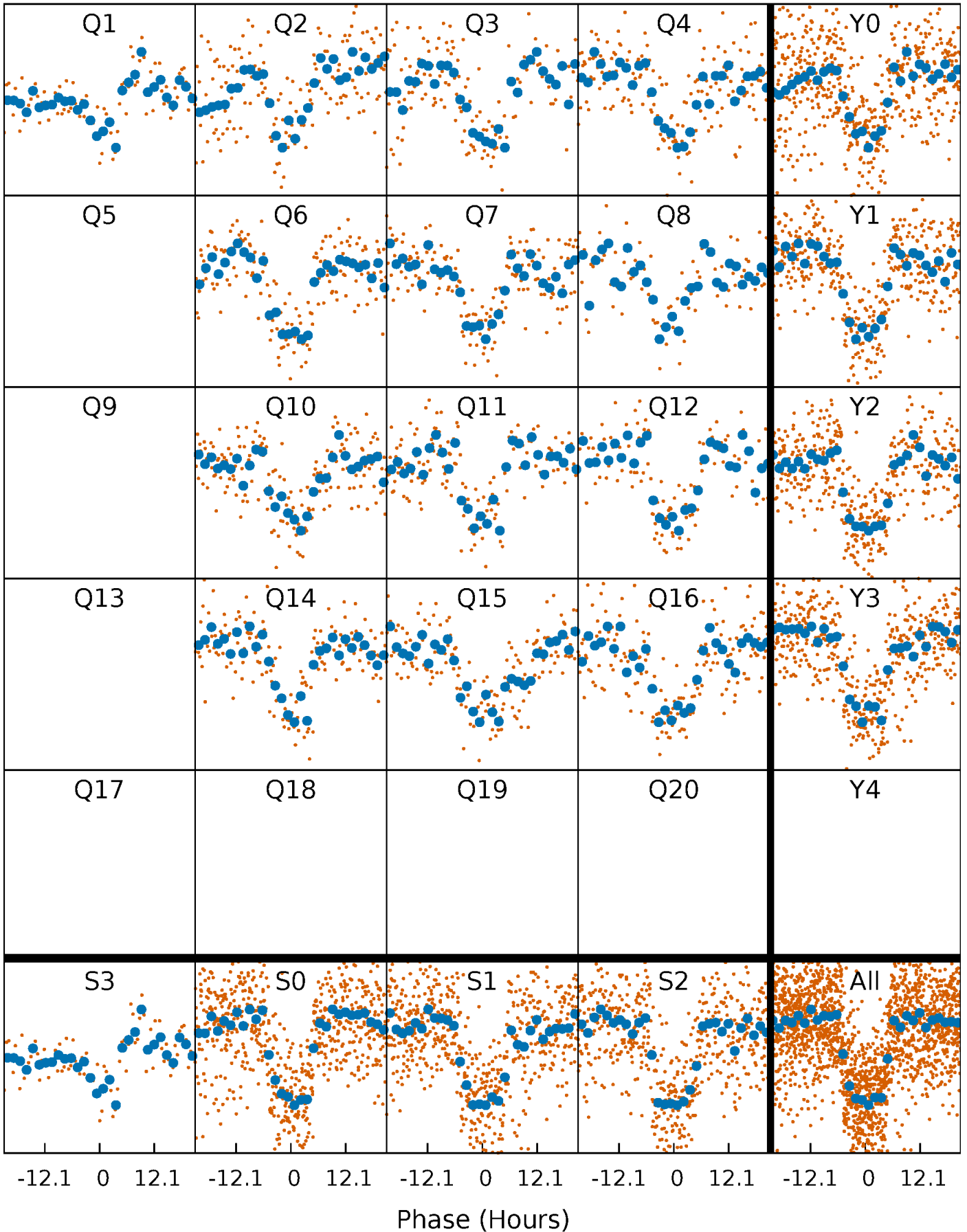


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



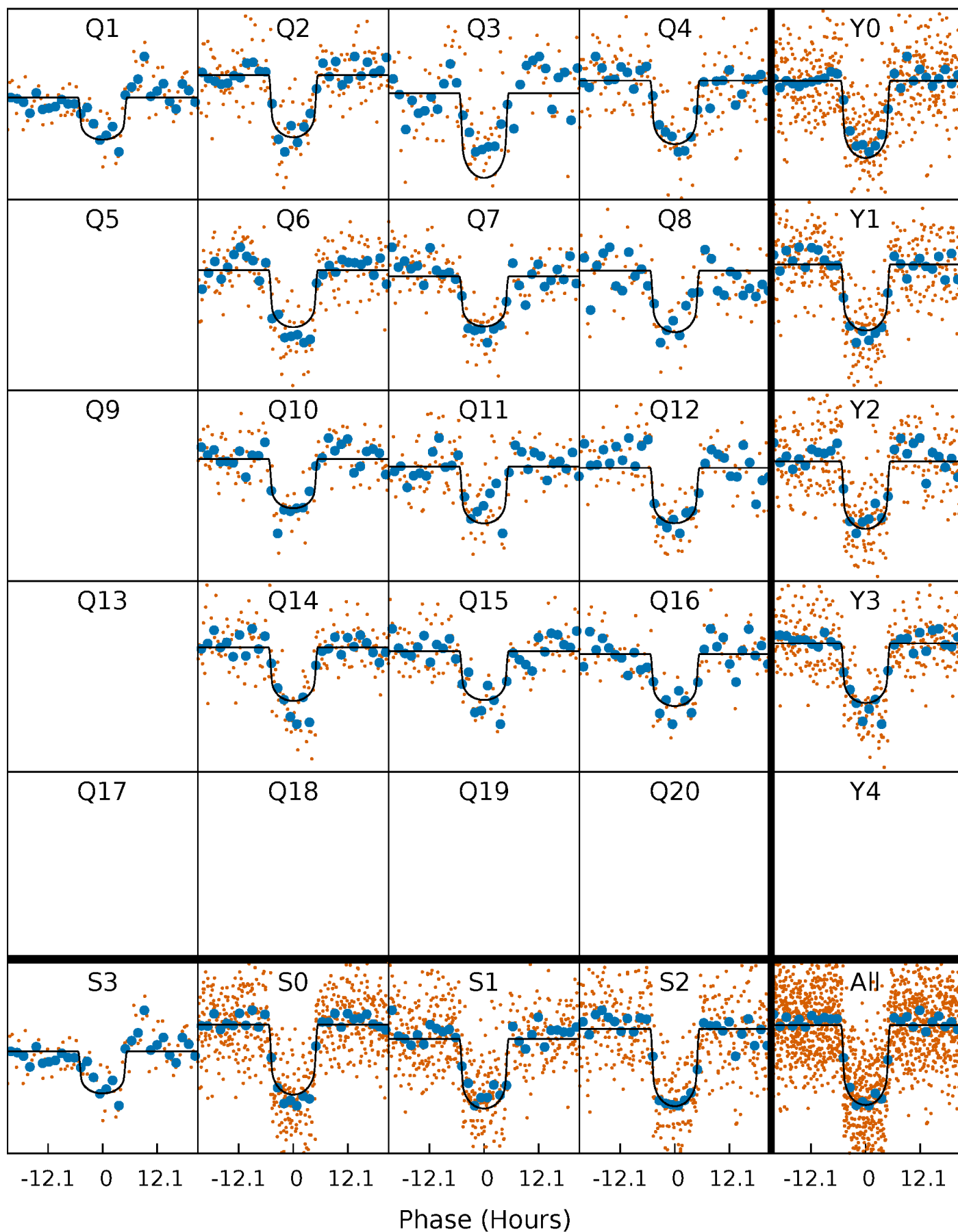
PDC Quarter-Phased Transit Curves

TCE 005511081-03 $P = 44.430298$ Days $T_0 = 143.546903$ (BKJD)



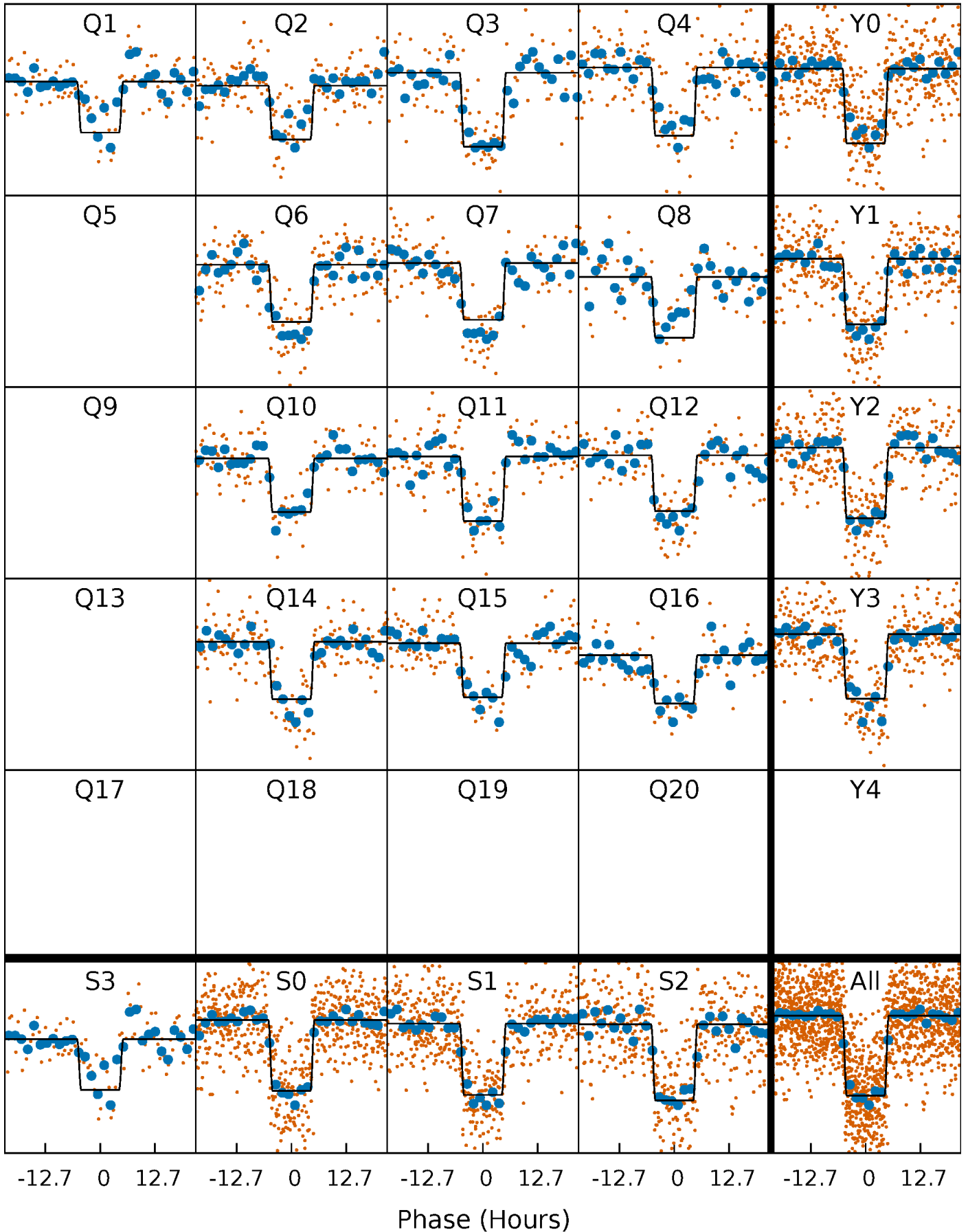
DV Quarter-Phased Transit Curves

TCE 005511081-03 P= 44.430298 Days $T_0=143.546903$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

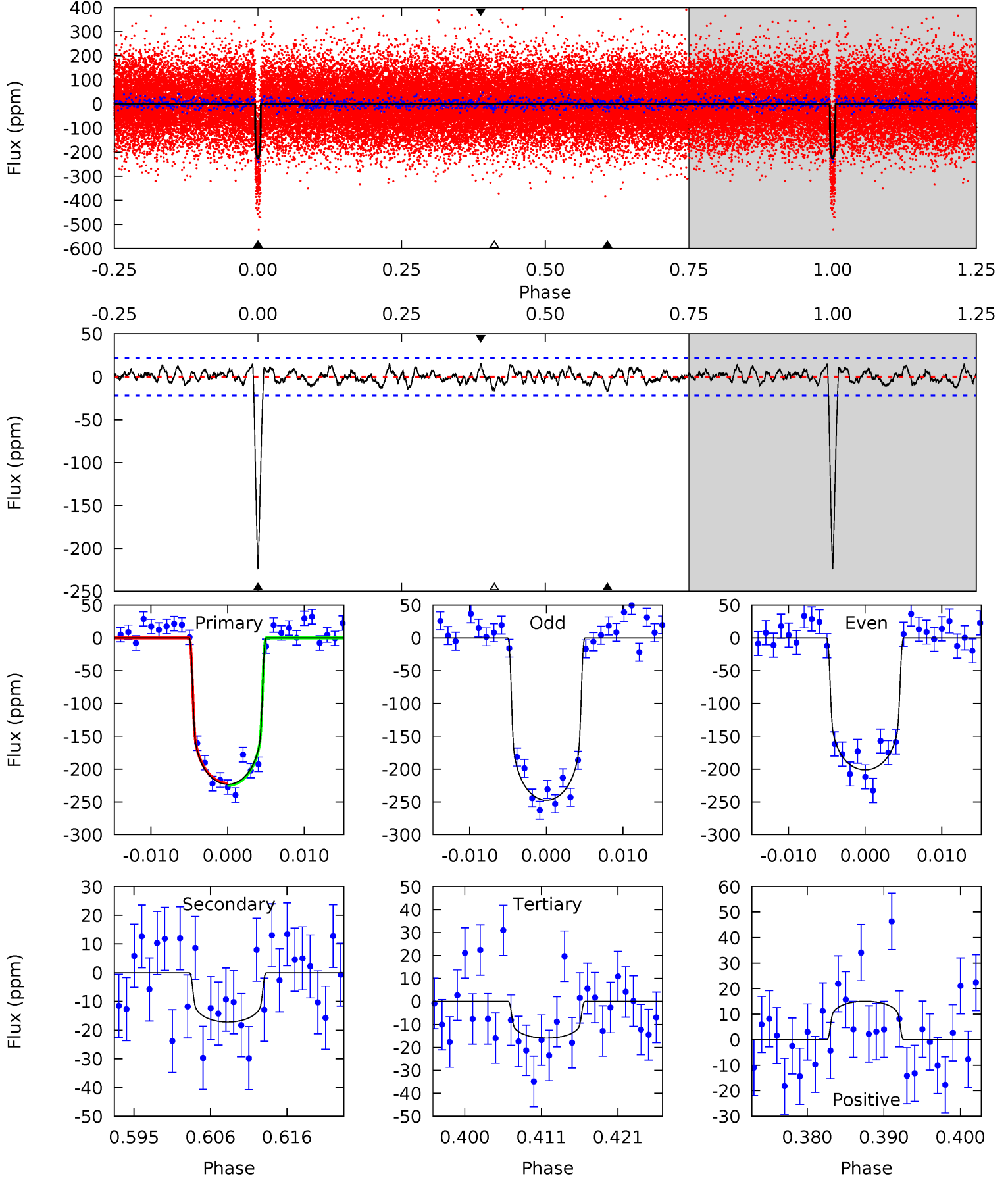
TCE 005511081-03 P= 44.429409 Days $T_0=143.563938$ (BKJD)



DV Model-Shift Uniqueness Test

005511081-03, P = 44.430298 Days, E = 99.116605 Days

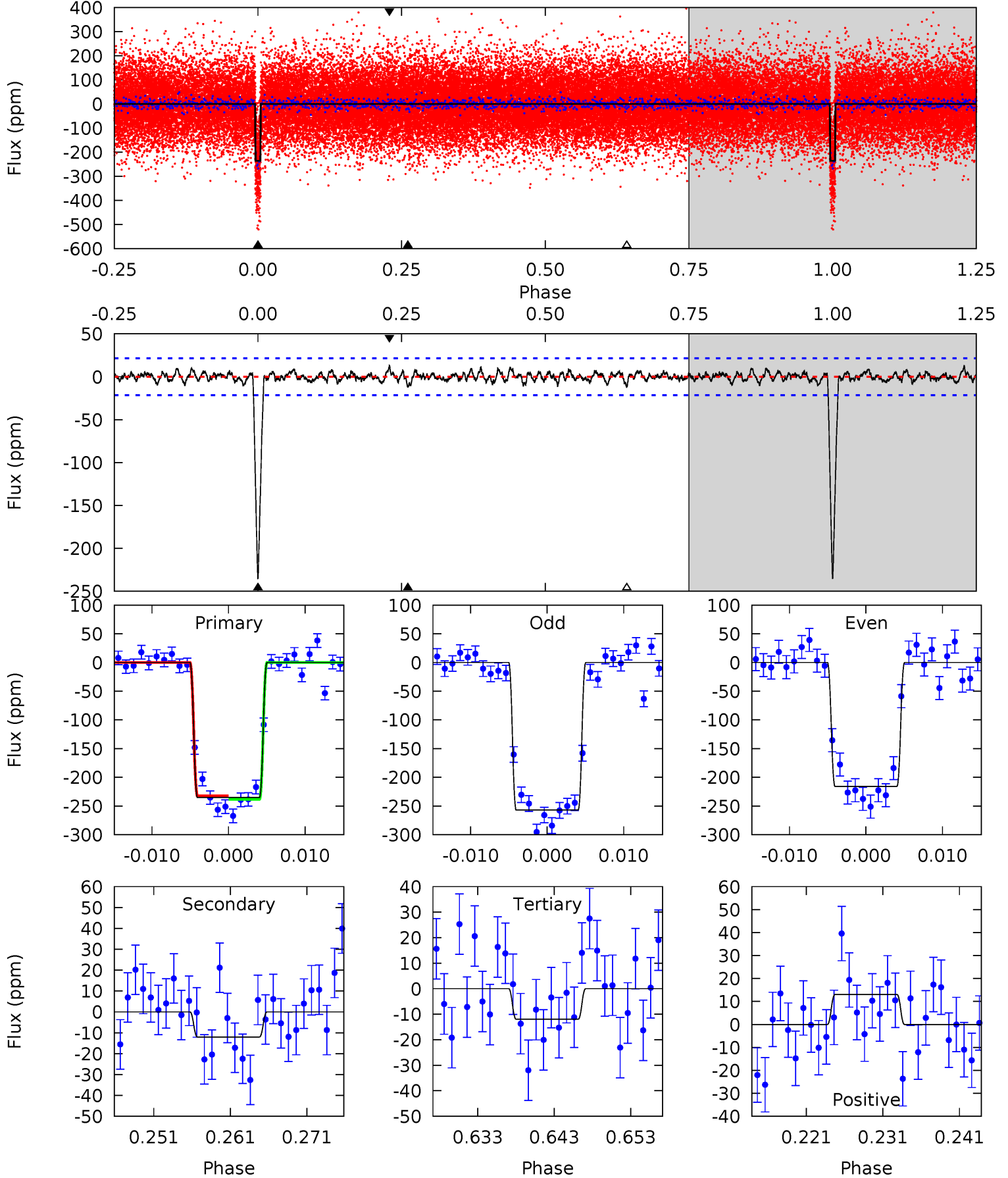
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.4	3.95	3.67	3.47	5.02	2.57	1.28	47.7	47.9	0.28	0.48	5.33	0.97	0.06	0.41



Alt Model-Shift Uniqueness Test

005511081-03, P = 44.429409 Days, E = 99.134529 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.7	2.80	2.78	3.03	5.03	2.57	0.90	52.0	51.7	0.01	-0.24	4.81	0.98	0.05	0.70



Stellar Parameters For KIC 005511081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5951^{+80}_{-80}	$4.017^{+0.033}_{-0.030}$	$-0.080^{+0.200}_{-0.150}$	$1.693^{+0.115}_{-0.094}$	$1.086^{+0.094}_{-0.070}$	$0.315^{+0.043}_{-0.038}$
	+1%/-1%	+1%/-1%	+250%/-188%	+7%/-6%	+9%/-6%	+14%/-12%
Source	SPE72	AST8	SPE72	DSEP		

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

Secondary Eclipse Parameters for KIC 005511081-03 / KOI 1930.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 4	$2.88^{+0.22}_{-0.25}$	950^{+17}_{-18}	3547^{+165}_{-179}	74^{+23}_{-20}
Alt.	-12 ± 4	$2.86^{+0.26}_{-0.24}$	949^{+17}_{-16}	3345^{+193}_{-230}	51^{+21}_{-19}

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

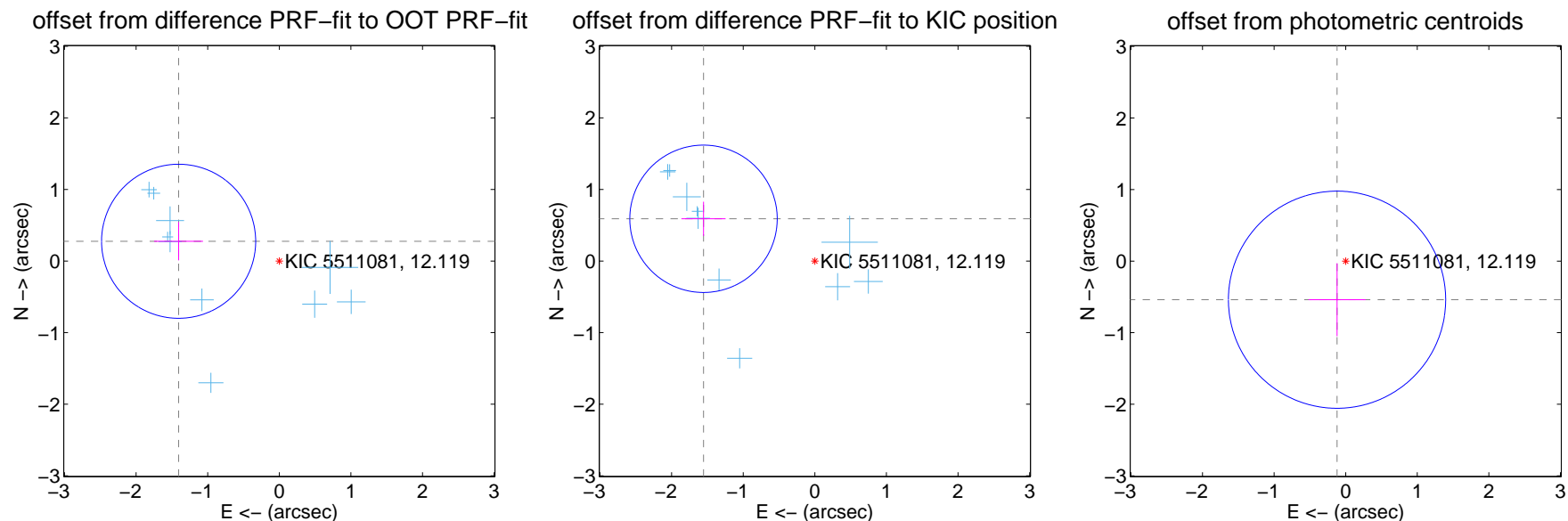
DV Centroid Data

Supplemental centroid analysis for 005511081-03. Kepler magnitude: 12.12. Transit SNR 30.66

There are 10 quarters with good PRF difference image offsets

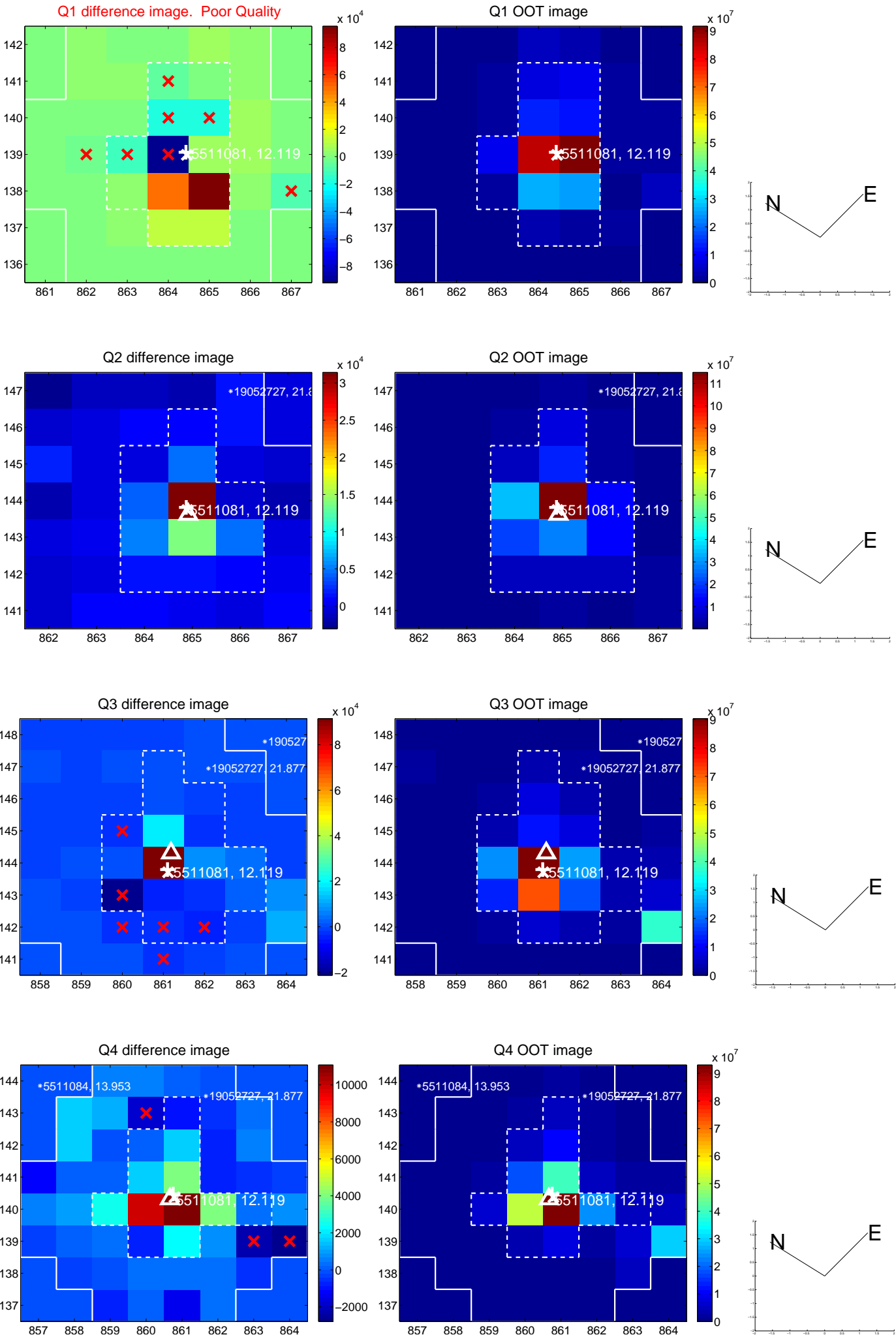
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.433 ± 0.359	4.00	1.406 ± 0.341	0.276 ± 0.267
PRF-fit source offset from KIC position	1.663 ± 0.343	4.85	1.554 ± 0.308	0.590 ± 0.239
photometric centroid source offset	0.55 ± 0.51	1.09	0.12 ± 0.40	-0.54 ± 0.51

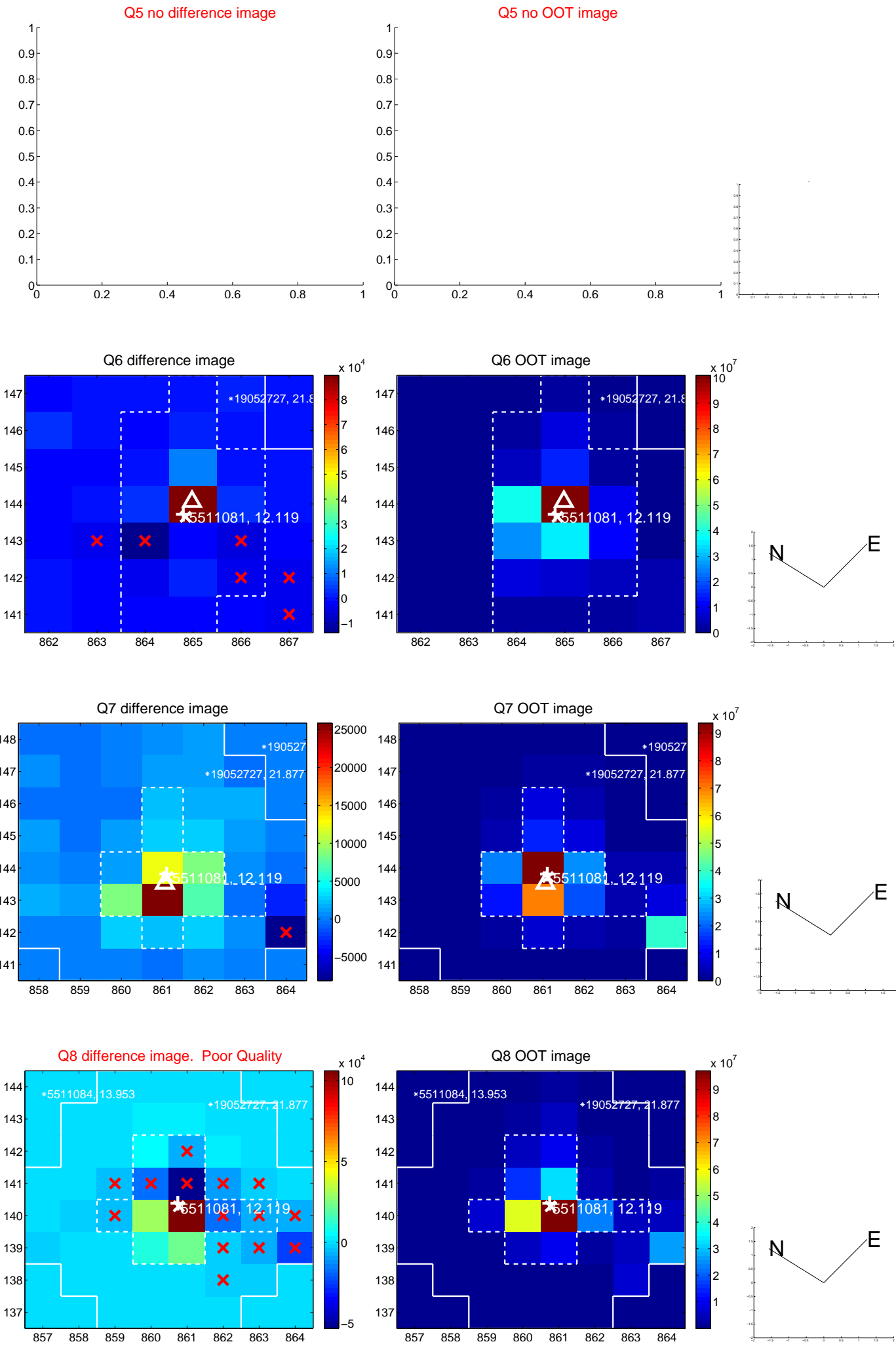


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

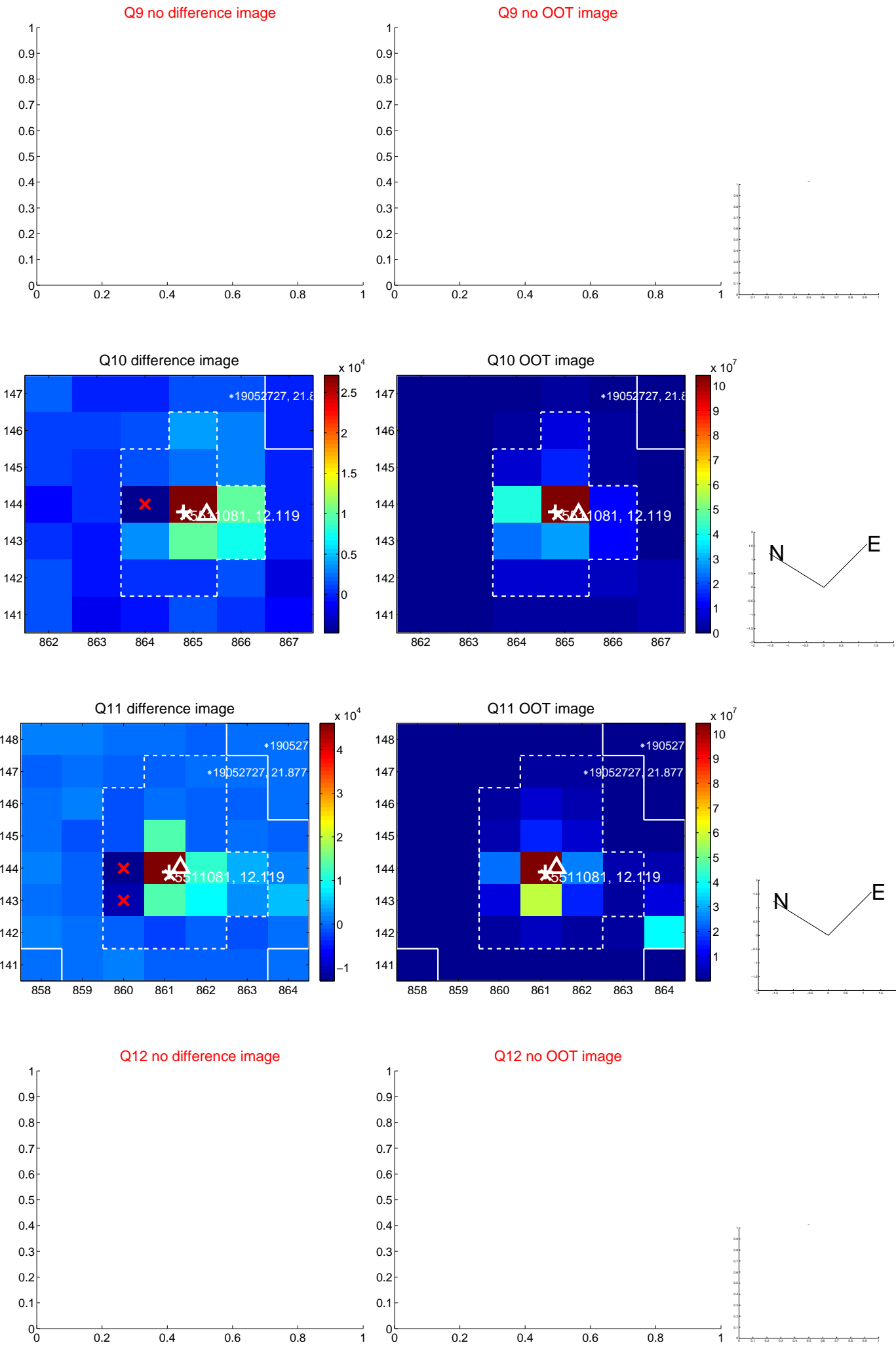
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



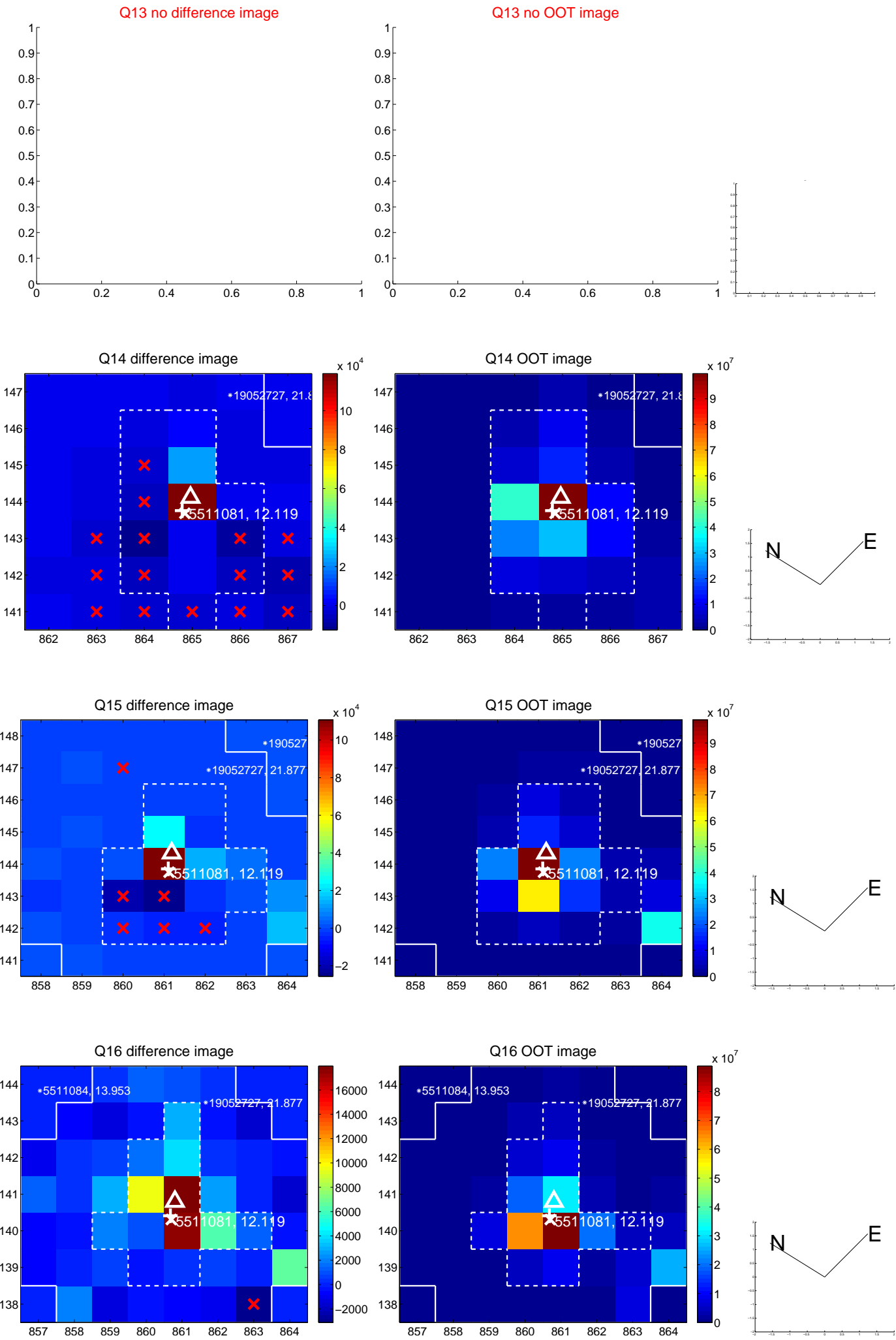
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



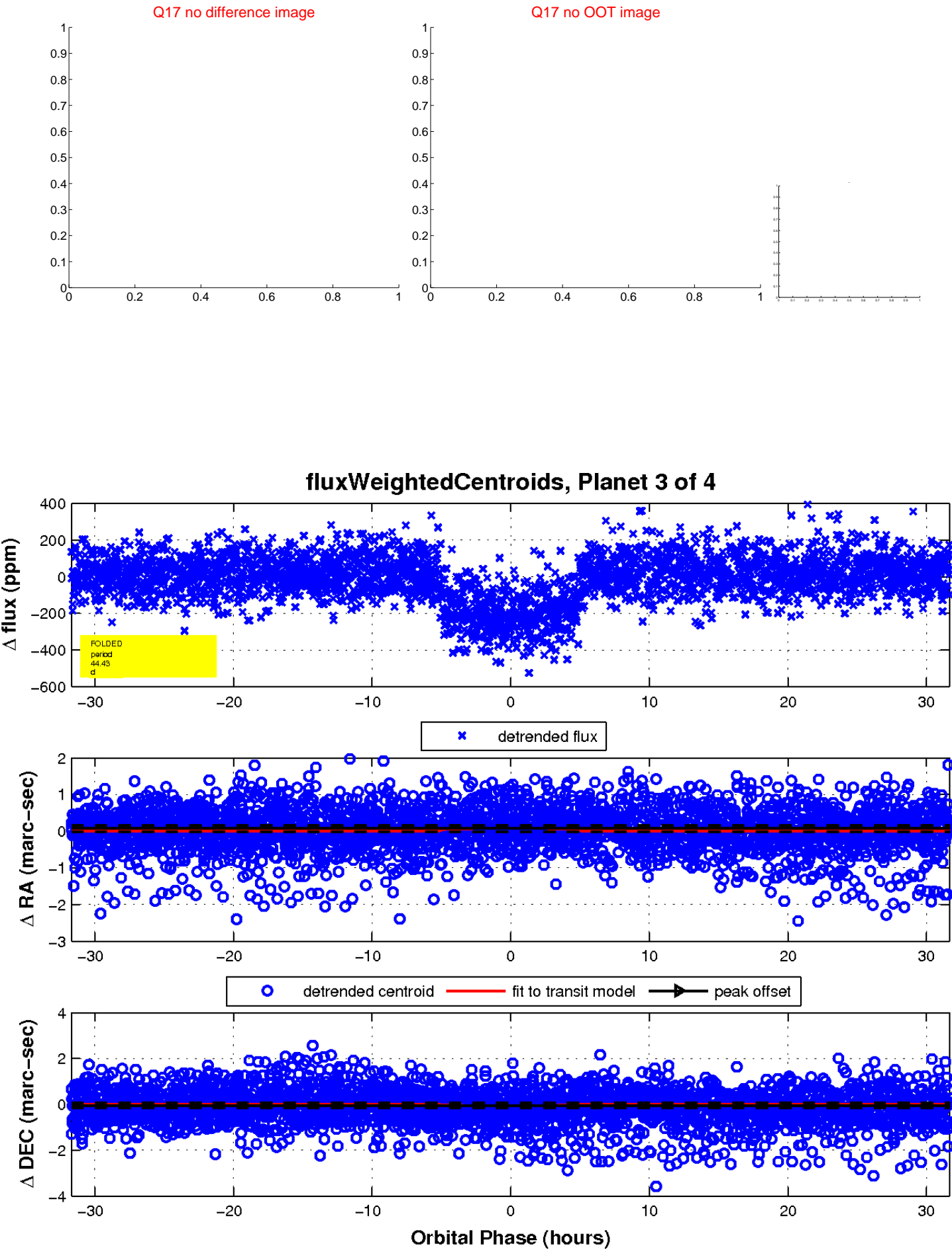
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

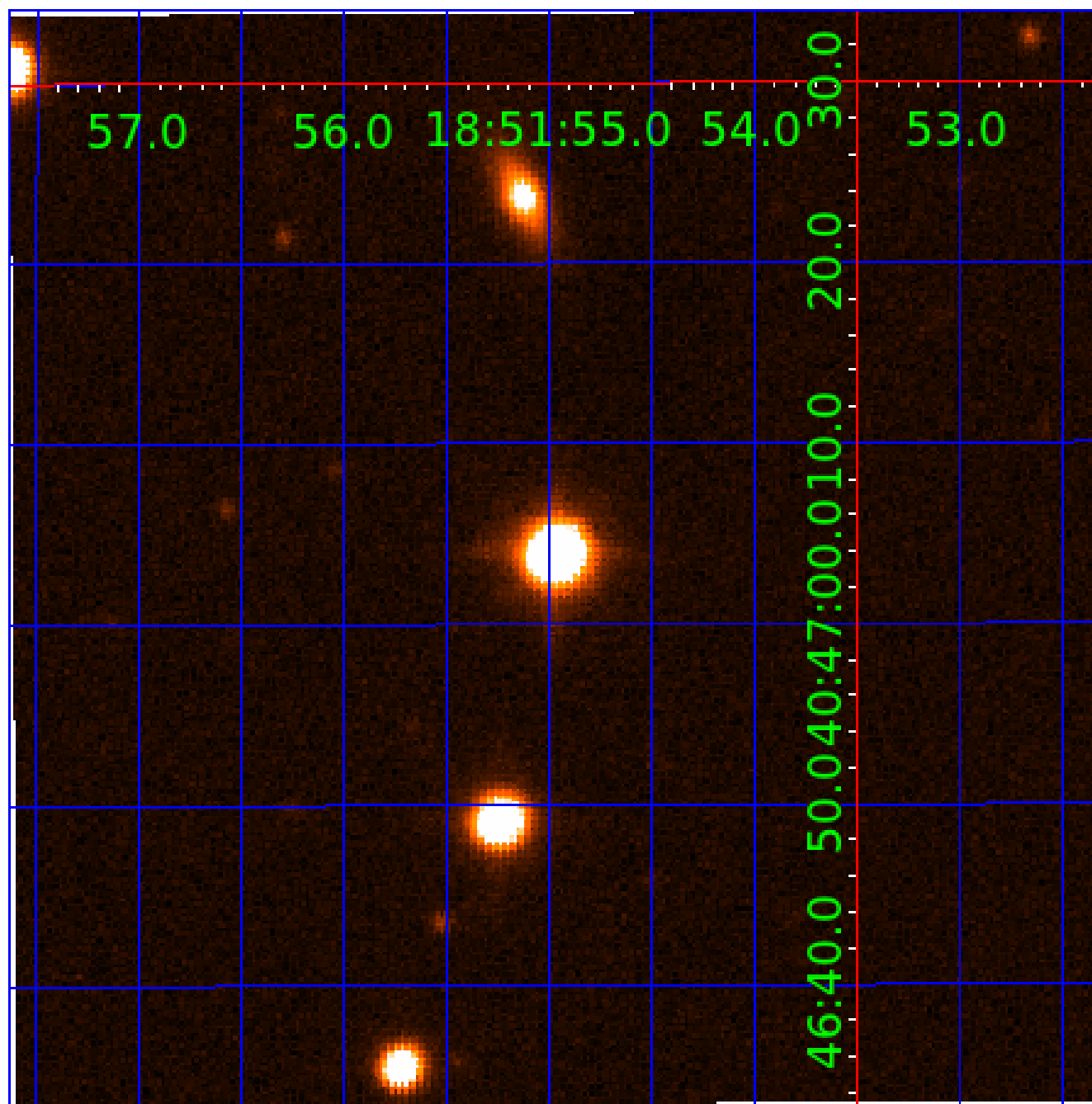


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005511081

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})
005511081-01	OBS	1930.01	13.727143	138.741926	198.9	7.691	37.9	42.5	1.69	5951	2.78	241.87
005511081-02	OBS	1930.02	24.311071	137.038357	186.5	9.211	31.8	32.9	1.69	5951	2.72	112.88
005511081-03	OBS	1930.03	44.430298	143.546903	225.8	10.570	29.4	30.7	1.69	5951	2.86	50.52
005511081-04	OBS	1930.04	9.341427	132.389716	76.9	6.329	18.7	20.5	1.69	5951	1.74	404.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005511081-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005511081-03	OBS	PC	0.90	0	0	0	0	CENT_KIC_POS
005511081-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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.

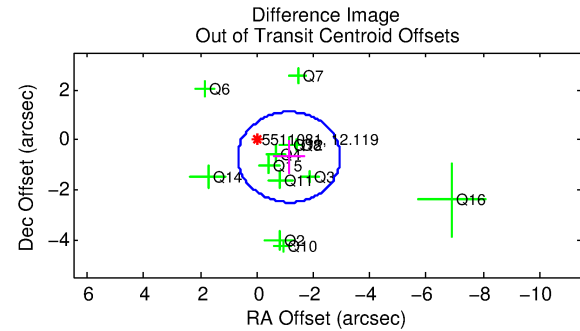
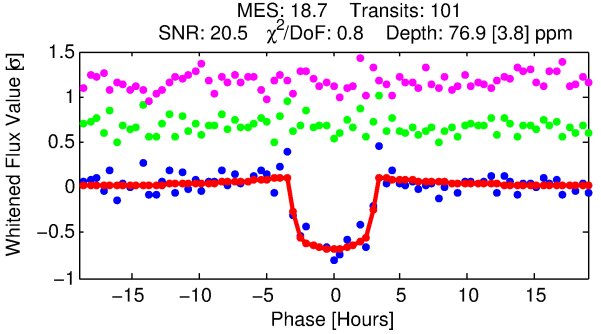
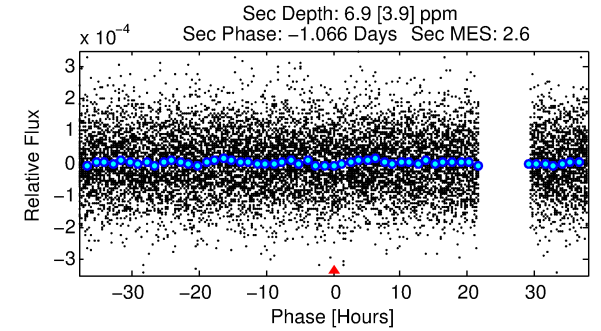
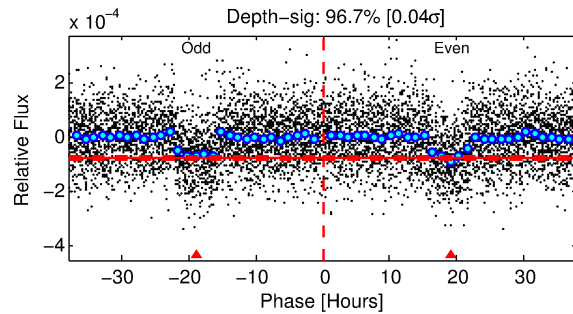
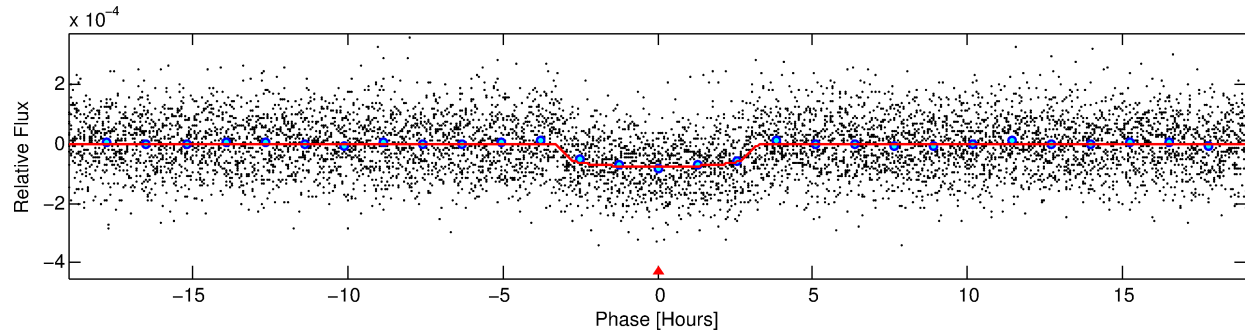
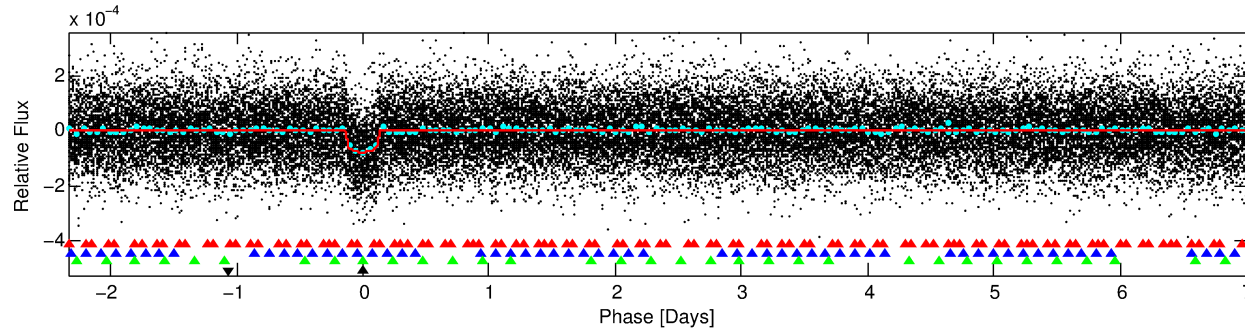
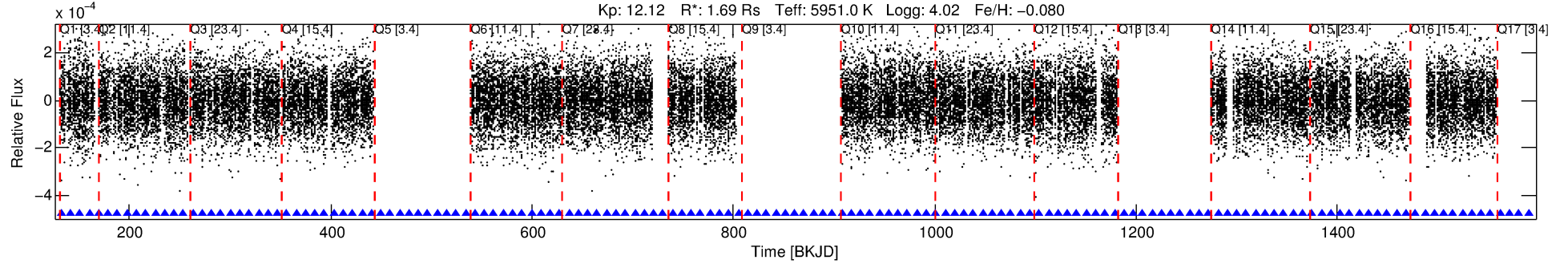
Ephemeris Match Information For 005511081-04

No Significant Match Found

DV One-Page Summary

KIC: 5511081 Candidate: 4 of 4 Period: 9.341 d
KOI: K01930.04 Name: Kepler-338e Corr: 0.990

Kp: 12.12 R*: 1.69 Rs Teff: 5951.0 K Logg: 4.02 Fe/H: -0.080



DV Fit Results:

Period = 9.34143 [0.00005] d
Epoch = 132.3897 [0.0045] BKJD
Rp/R* = 0.0094 [0.0016]
a/R* = 5.40 [4.59]
b = 0.89 [0.20]
Seff = 404.09 [35.01]
Teq = 1143 [25] K
Rp = 1.74 [0.32] Re
a = 0.0893 [0.0046] AU
Ag = 9.97 [6.62] [1.35σ]
Teffp = 3141 [520] K [3.83σ]

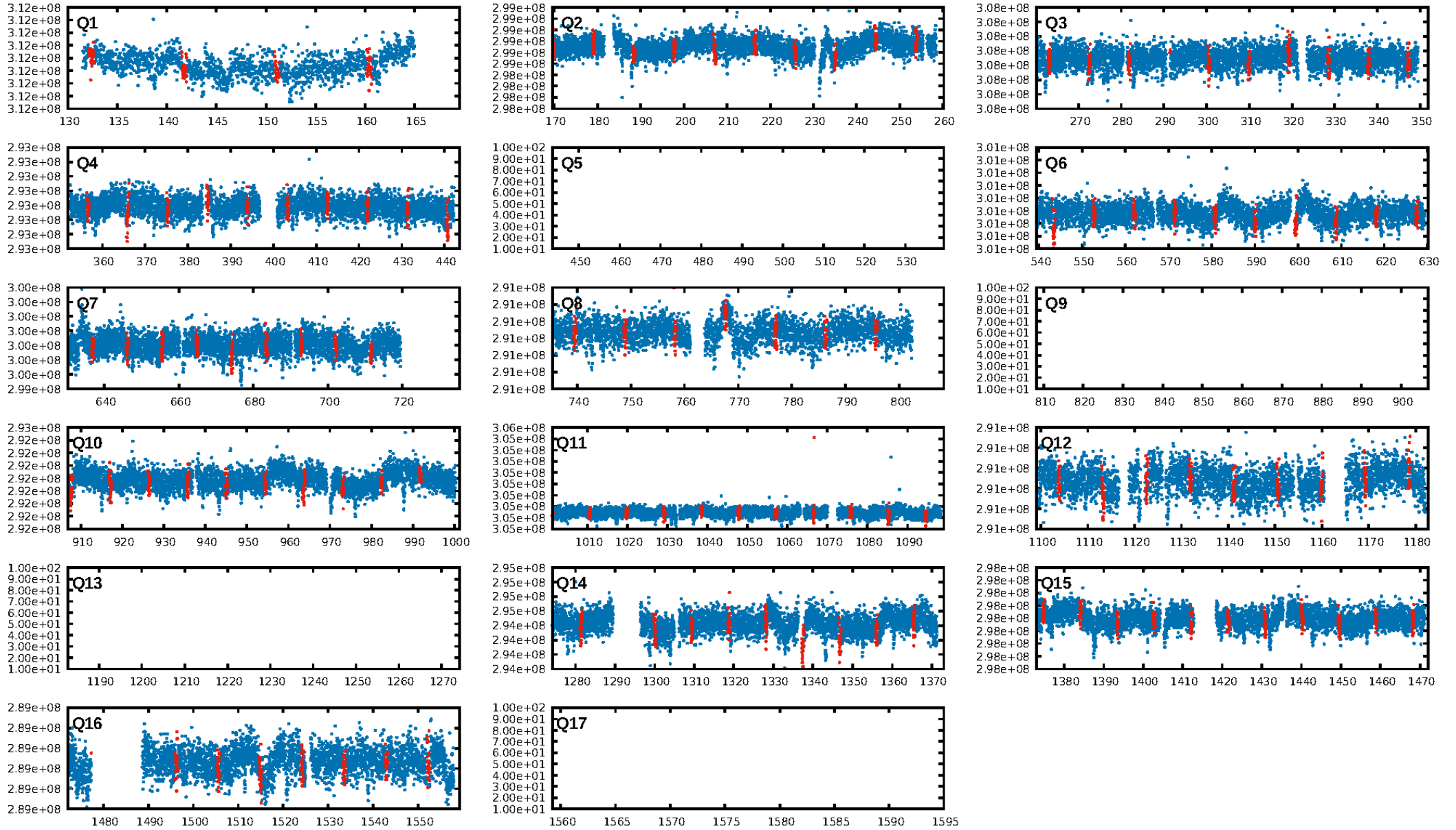
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.57σ]
ModelChiSquare2-sig: 97.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.70e-72
RollingBand-fgt: 1.00 [97/97]
GhostDiagnostic-chr: 44.66
Centroid-sig: 8.3%
Centroid-so: 0.093 arcsec [0.16σ]
OotOffset-rm: 1.333 arcsec [2.21σ]
KicOffset-rm: 0.993 arcsec [1.42σ]
OotOffset-st: 4/4/4/0 [12]
KicOffset-st: 4/4/4/0 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 1.00 [13/13]

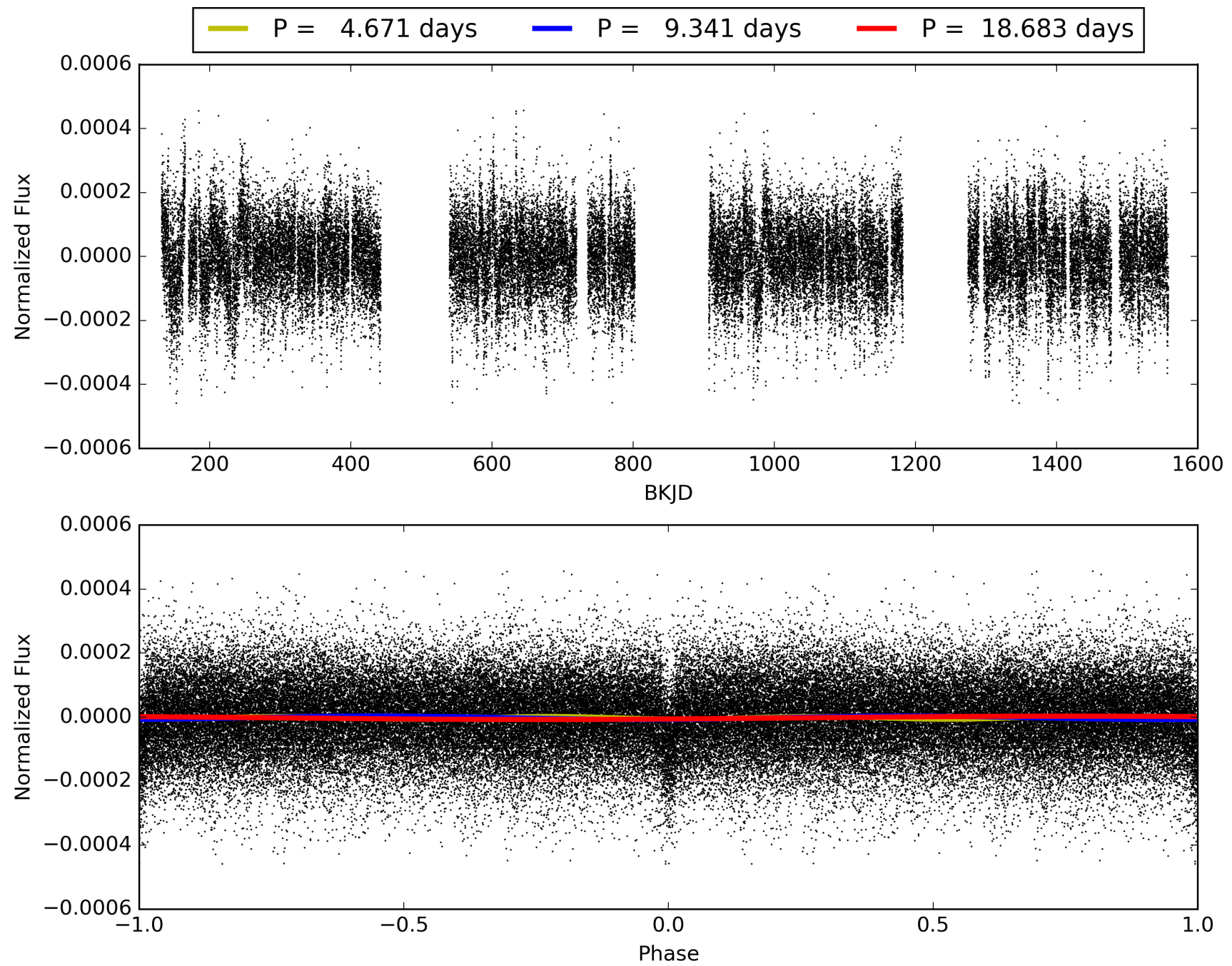
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:34:14 Z

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

TCE 005511081-04, PDC Light Curves

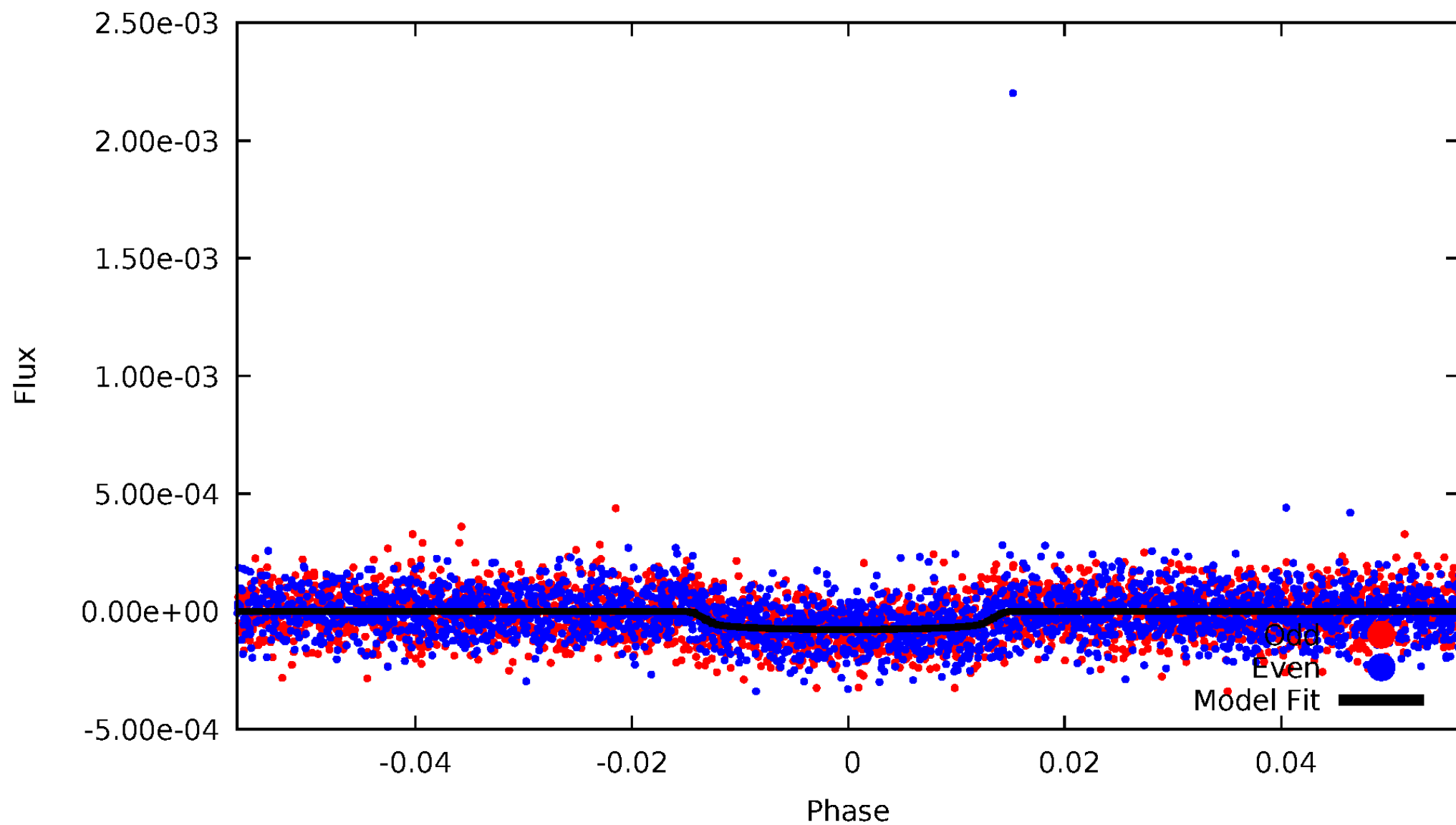


TCE 005511081-04



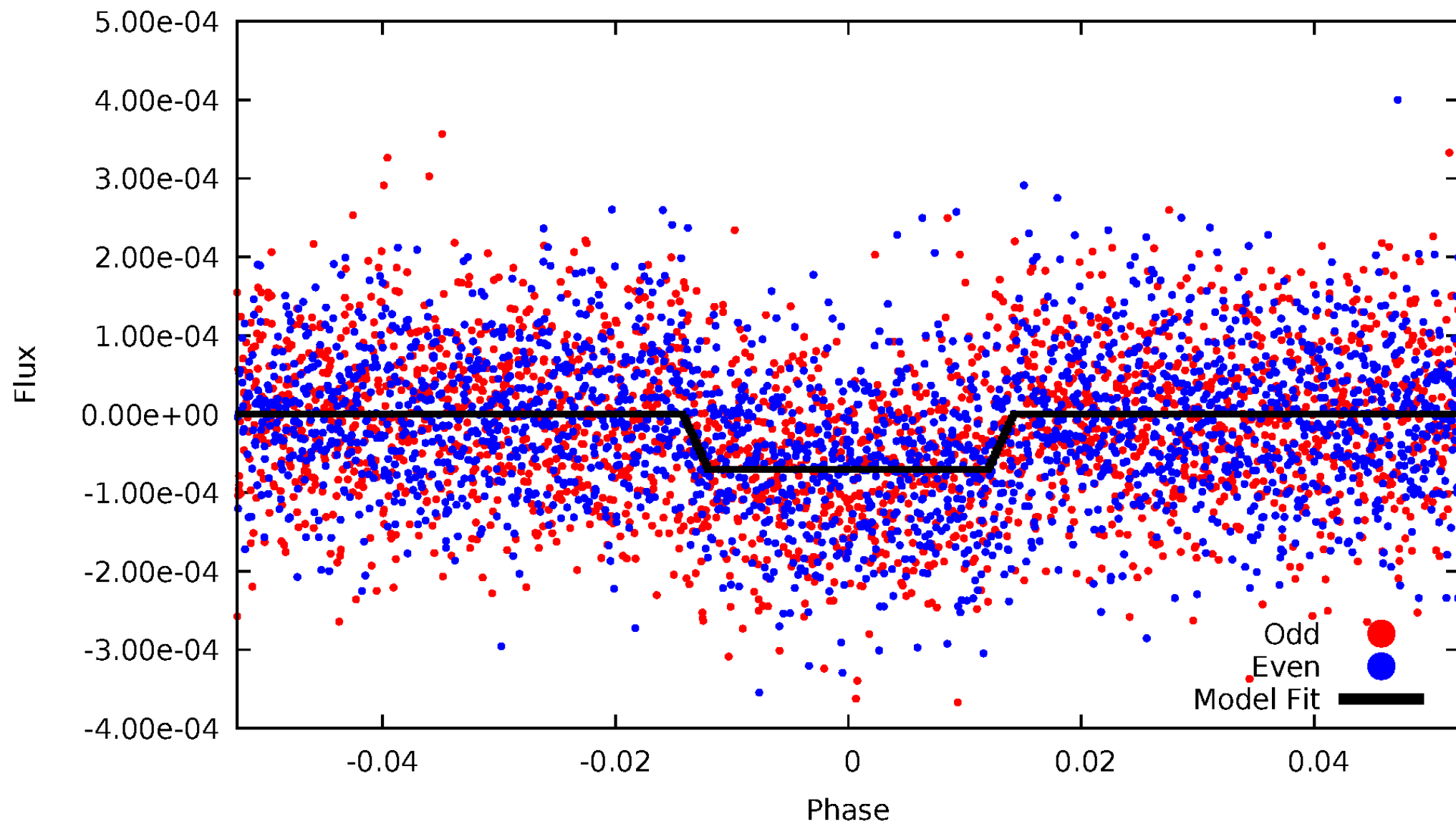
DV Odd/Even

TCE 005511081-04



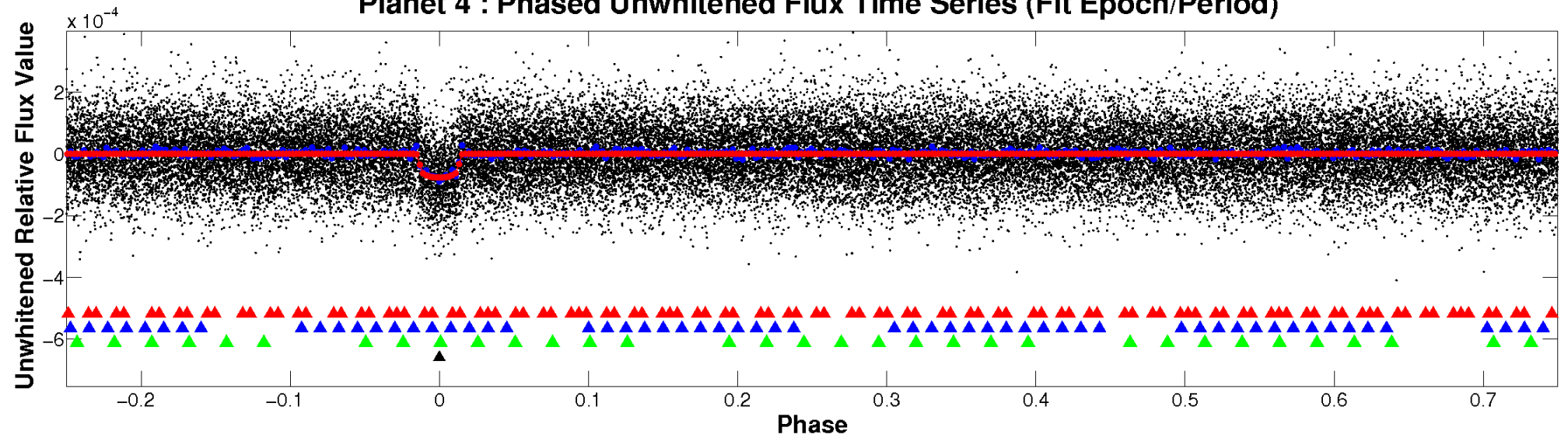
ALT Odd/Even

TCE 005511081-04

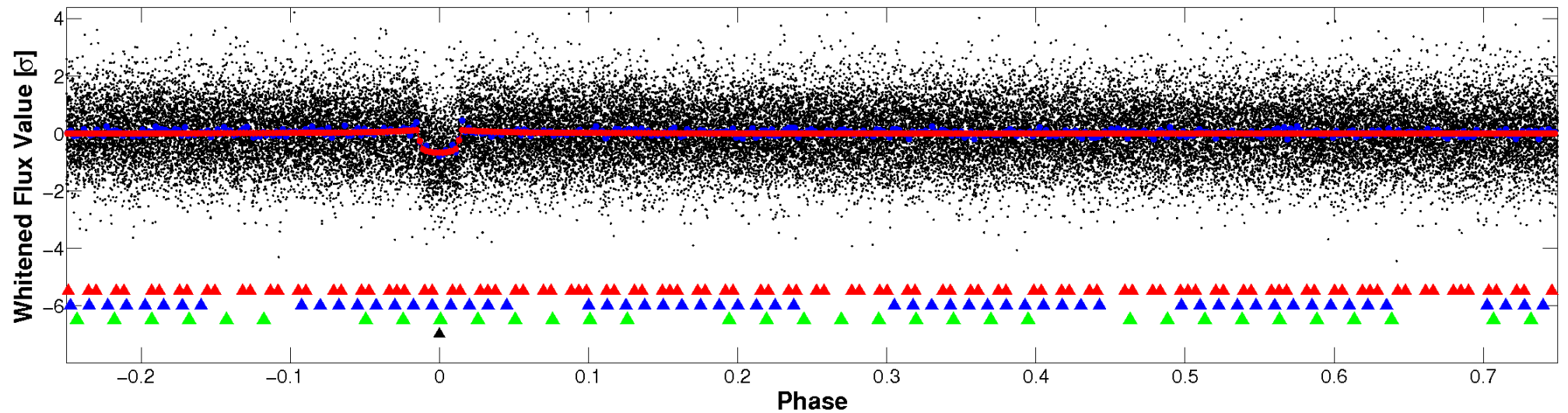


Non-Whitened Vs. Whitened Light Curve

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

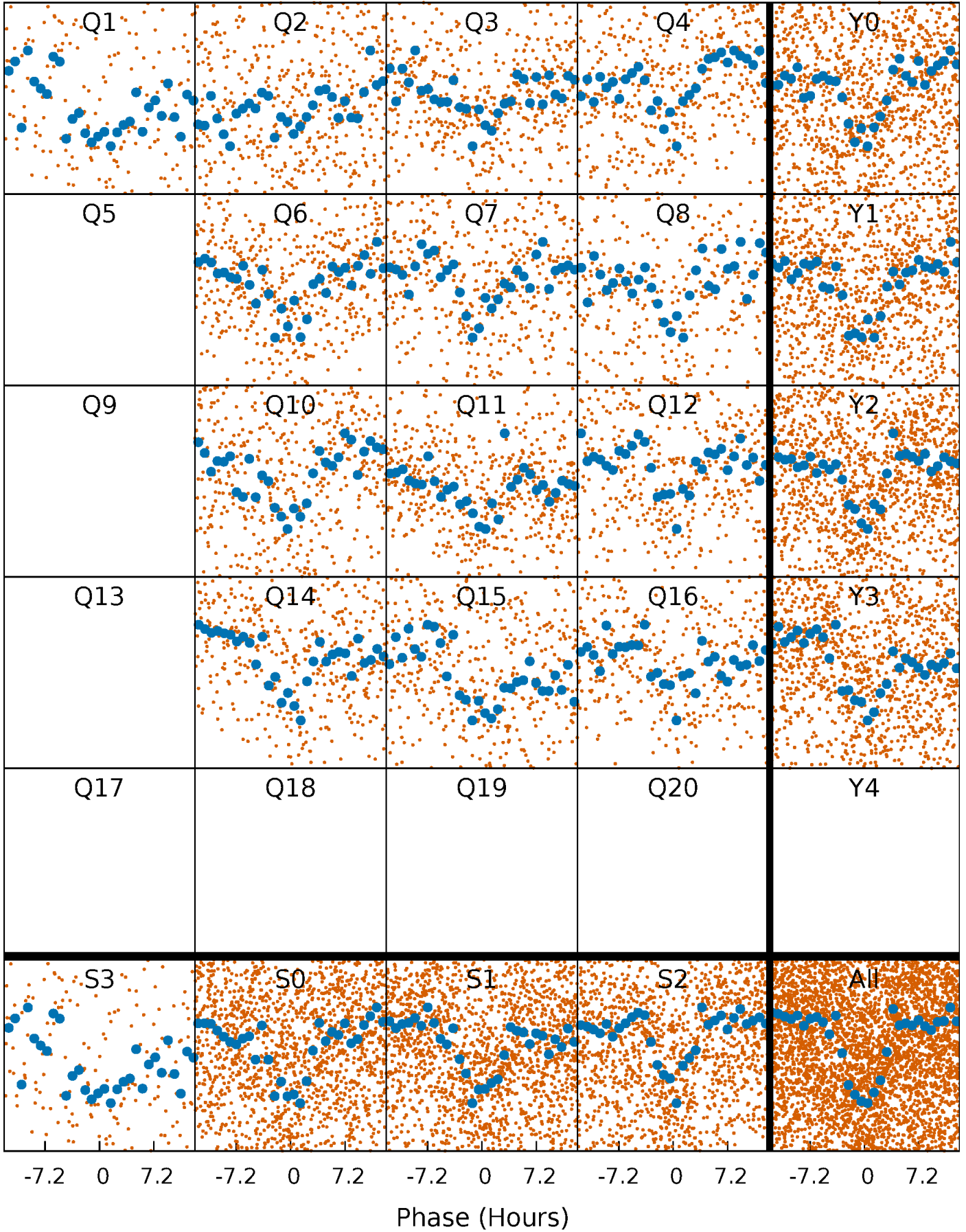


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



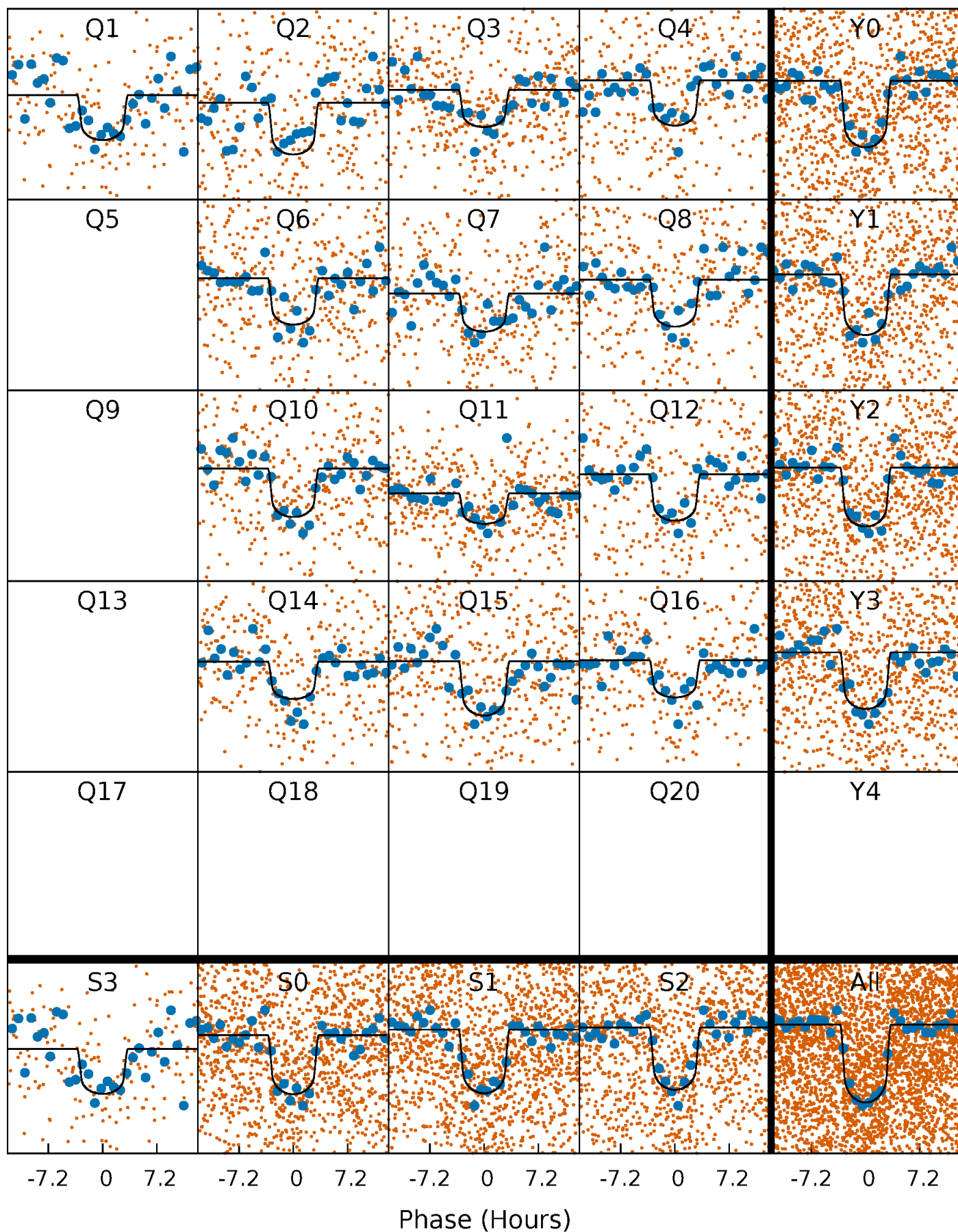
PDC Quarter-Phased Transit Curves

TCE 005511081-04 P= 9.341427 Days $T_0=132.389716$ (BKJD)



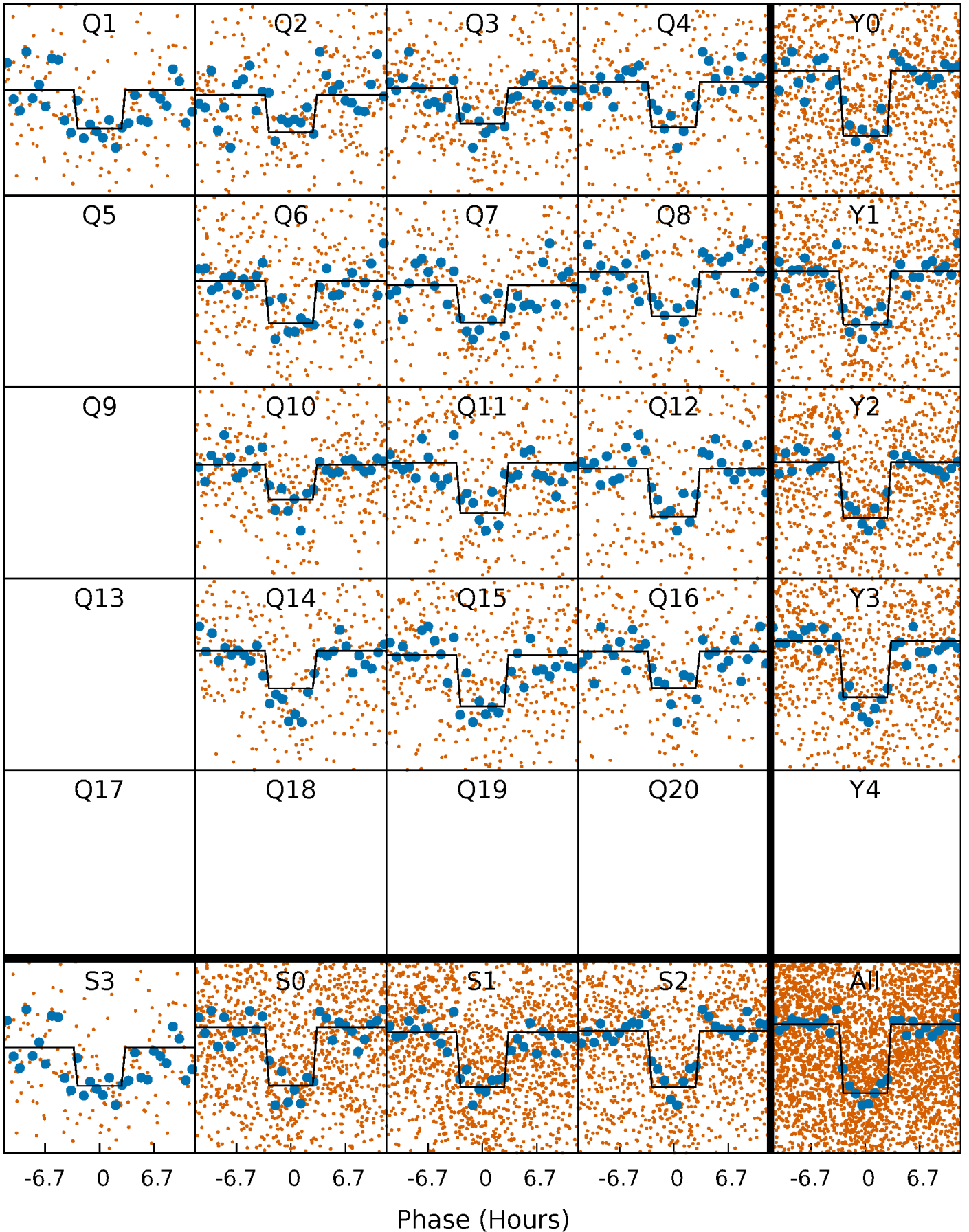
DV Quarter-Phased Transit Curves

TCE 005511081-04 P= 9.341427 Days $T_0=132.389716$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

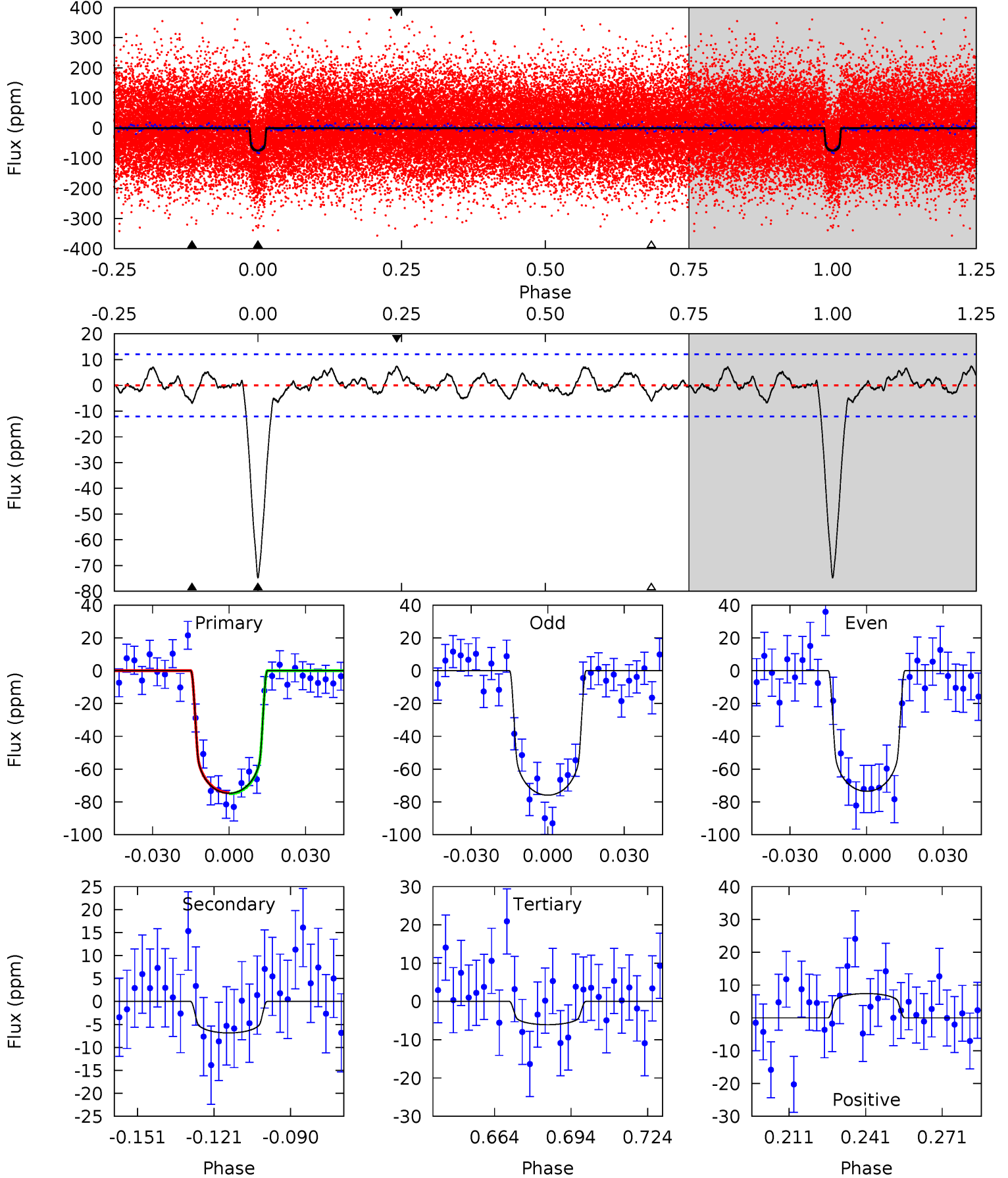
TCE 005511081-04 $P = 9.341522$ Days $T_0 = 132.381478$ (BKJD)



DV Model-Shift Uniqueness Test

005511081-04, P = 9.341427 Days, E = 123.048289 Days

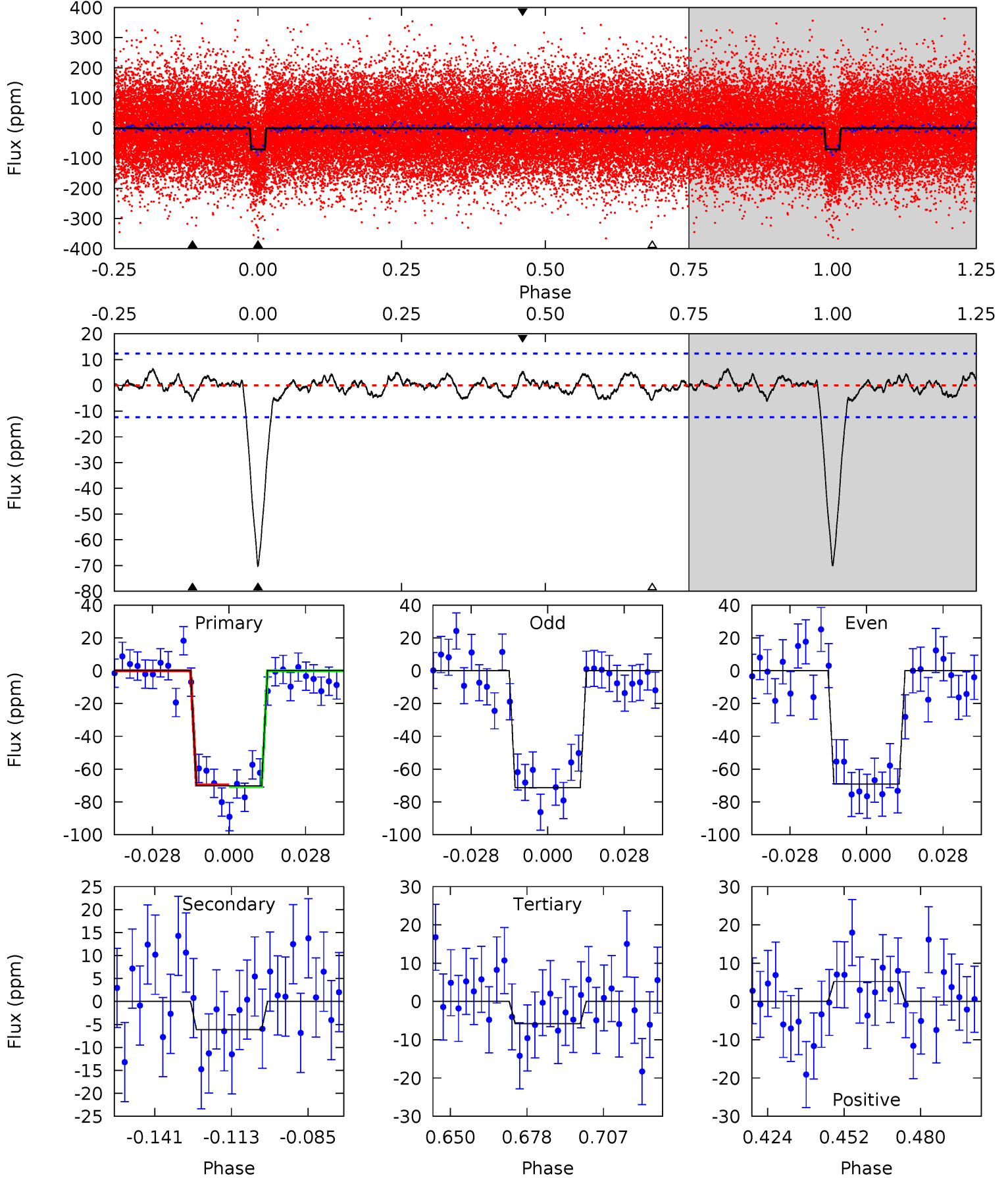
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.8	2.73	2.42	2.95	4.81	2.17	1.12	27.4	26.8	0.31	-0.22	0.47	1.08	0.09	0.13



Alt Model-Shift Uniqueness Test

005511081-04, P = 9.341522 Days, E = 123.039956 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.4	2.39	2.26	2.03	4.82	2.19	0.97	25.1	25.4	0.14	0.36	0.42	1.10	0.08	0.21



Stellar Parameters For KIC 005511081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5951^{+80}_{-80}	$4.017^{+0.033}_{-0.030}$	$-0.080^{+0.200}_{-0.150}$	$1.693^{+0.115}_{-0.094}$	$1.086^{+0.094}_{-0.070}$	$0.315^{+0.043}_{-0.038}$
	+1%/-1%	+1%/-1%	+250%/-188%	+7%/-6%	+9%/-6%	+14%/-12%
Source	SPE72	AST8	SPE72	DSEP		

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

Secondary Eclipse Parameters for KIC 005511081-04 / KOI 1930.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 3	$1.74^{+0.30}_{-0.30}$	1597^{+28}_{-30}	3560^{+300}_{-311}	$9.646^{+6.020}_{-4.008}$
Alt.	-6 ± 3	$1.56^{+0.31}_{-0.33}$	1596^{+29}_{-28}	3636^{+365}_{-342}	11^{+8}_{-5}

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

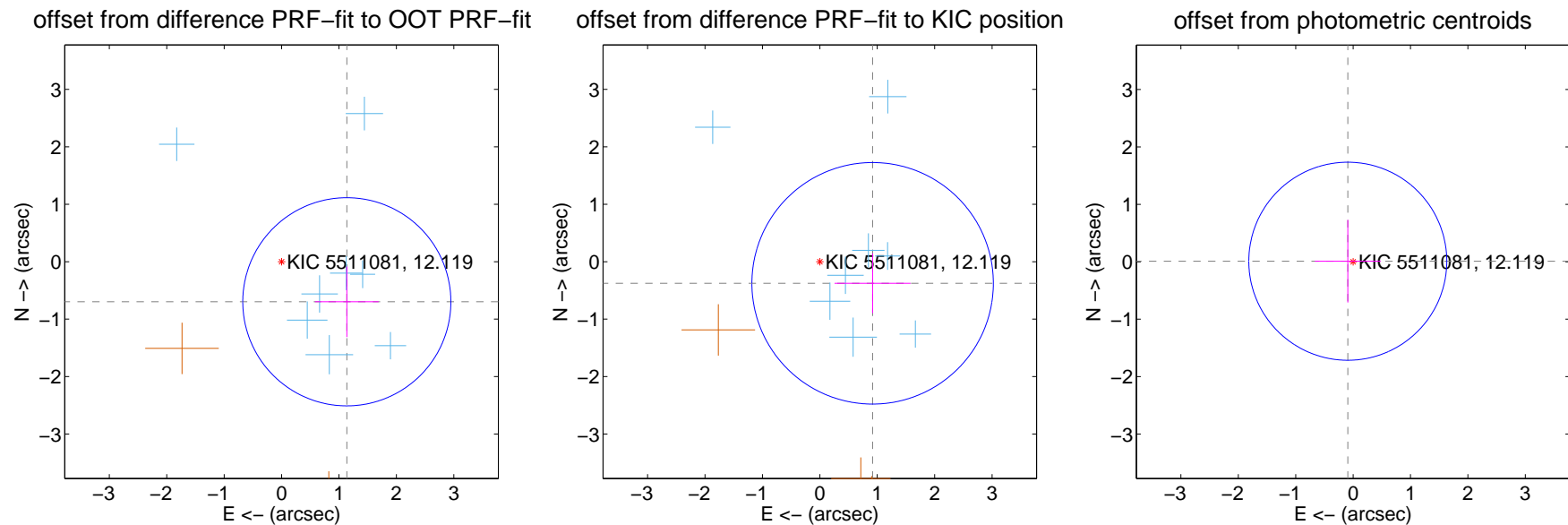
DV Centroid Data

Supplemental centroid analysis for 005511081-04. Kepler magnitude: 12.12. Transit SNR 20.48

There are 8 quarters with good PRF difference image offsets

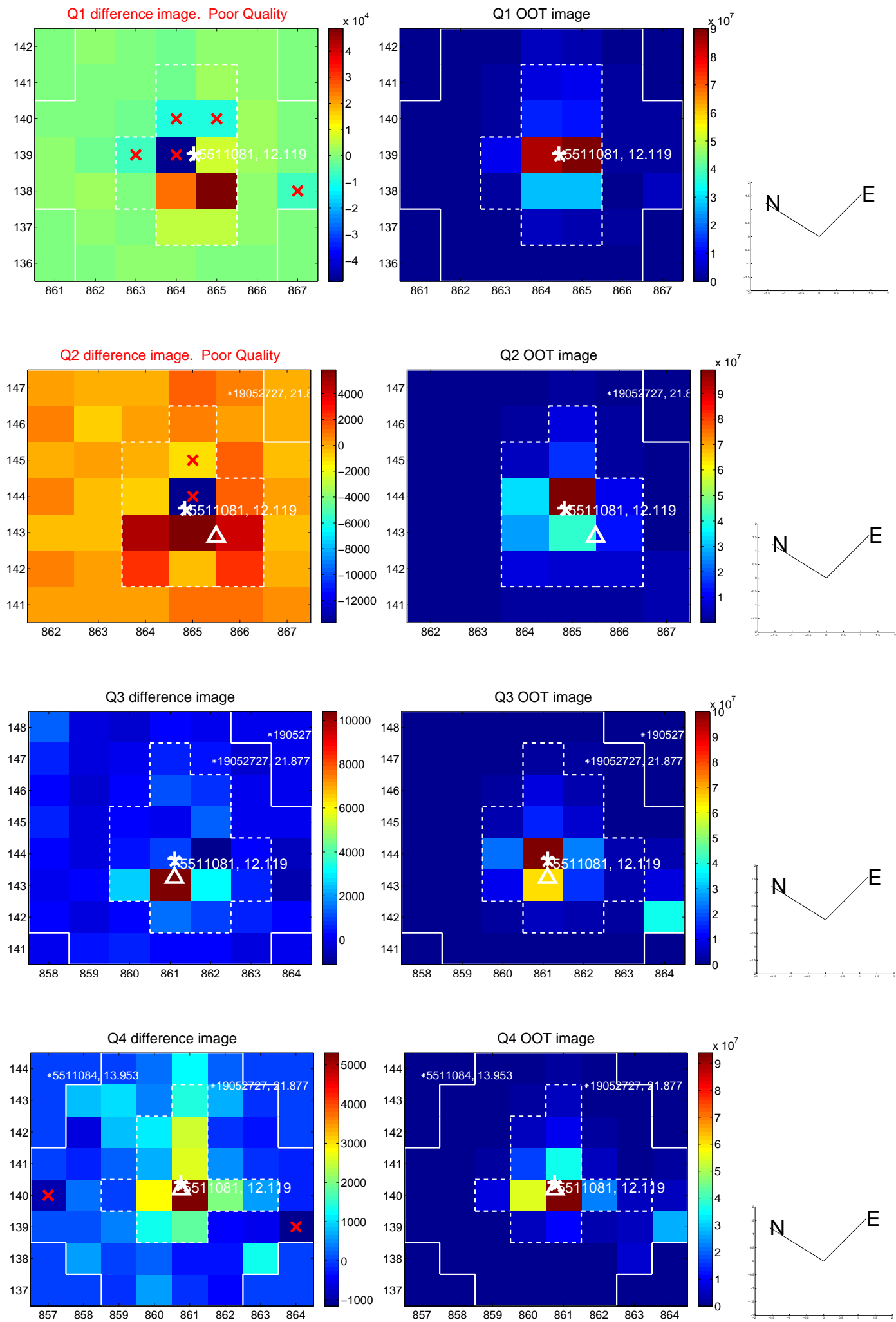
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.333 ± 0.604	2.21	-1.136 ± 0.555	-0.698 ± 0.613
PRF-fit source offset from KIC position	0.993 ± 0.701	1.42	-0.919 ± 0.663	-0.376 ± 0.520
photometric centroid source offset	0.09 ± 0.57	0.16	0.09 ± 0.57	0.01 ± 0.72

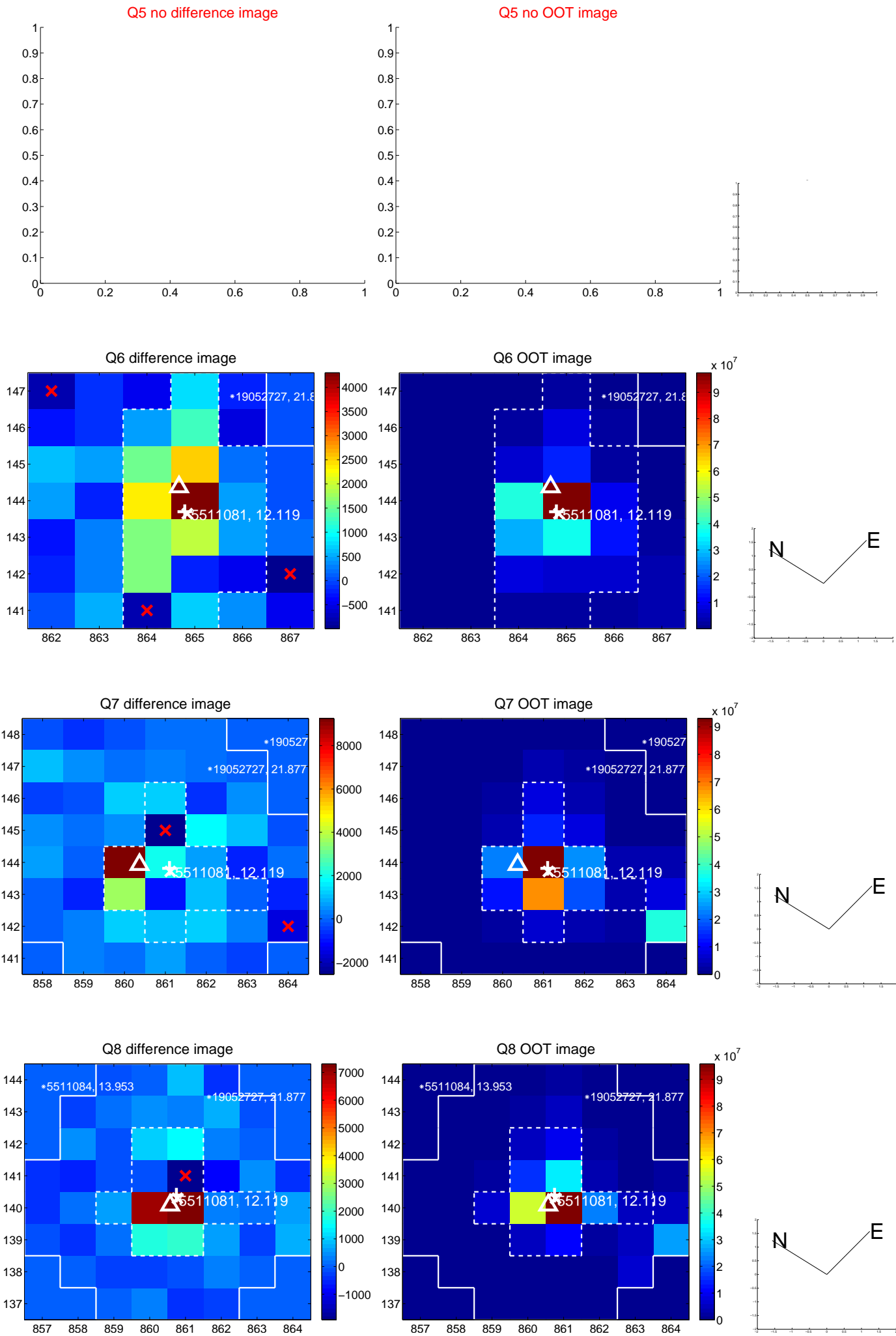


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

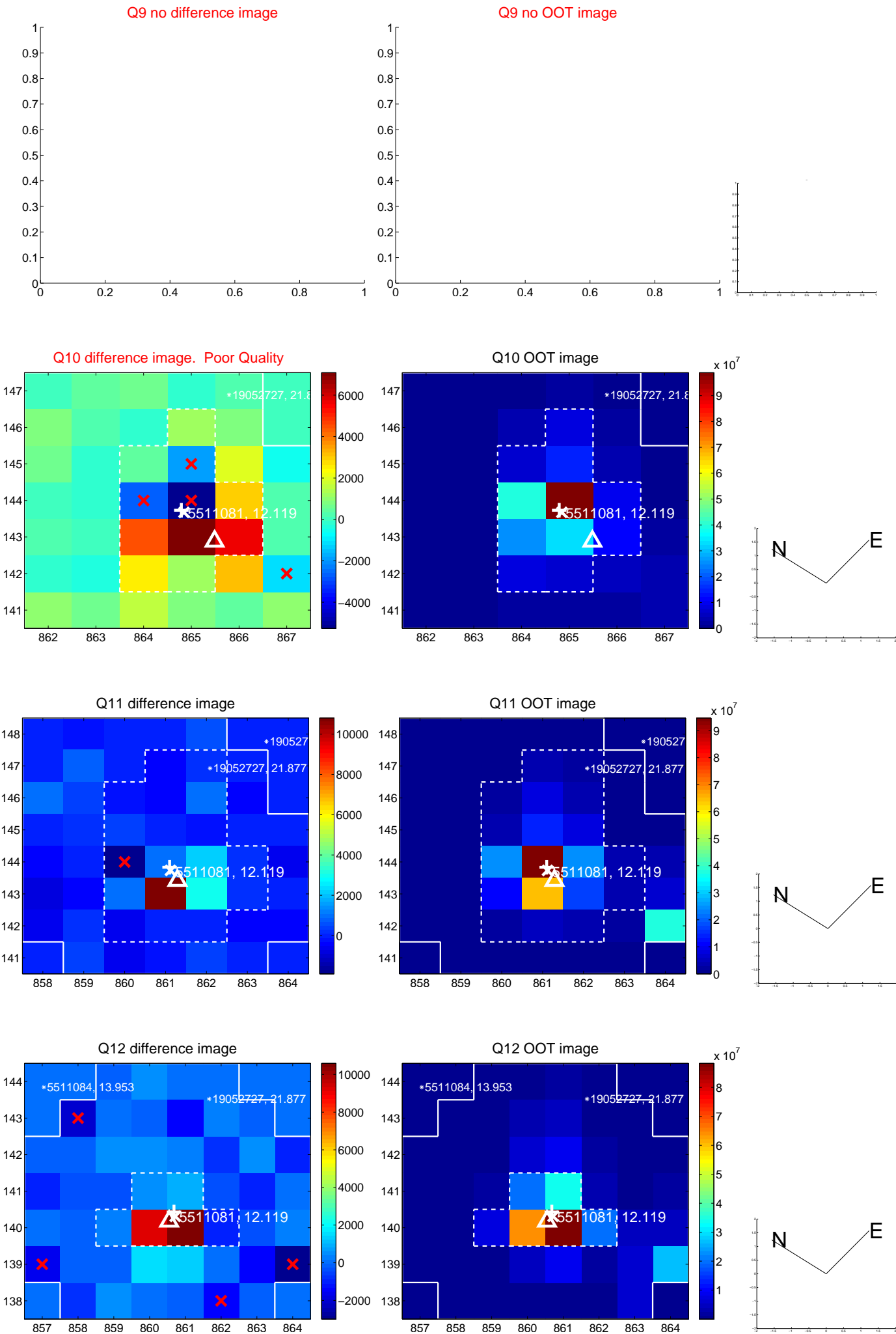
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



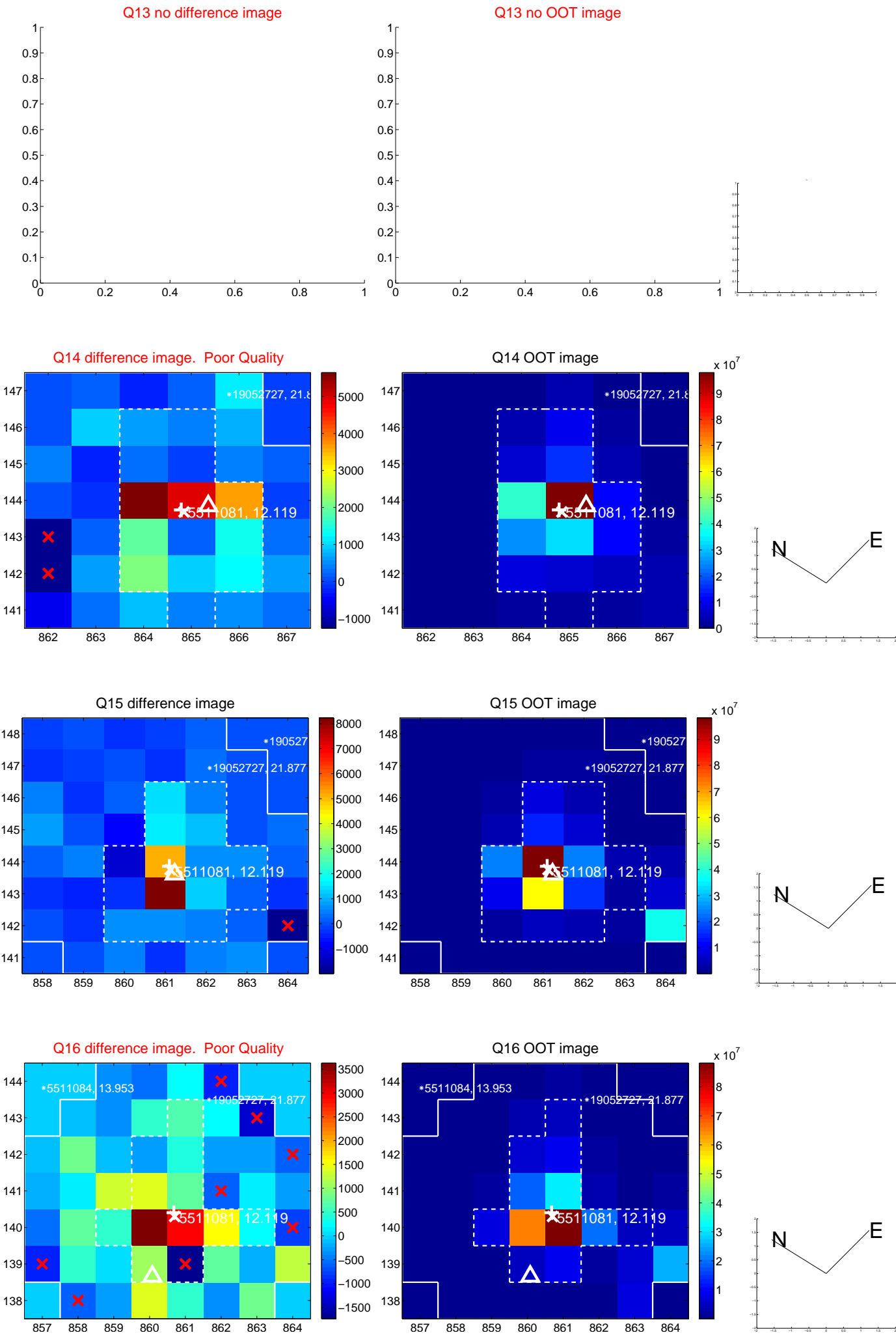
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



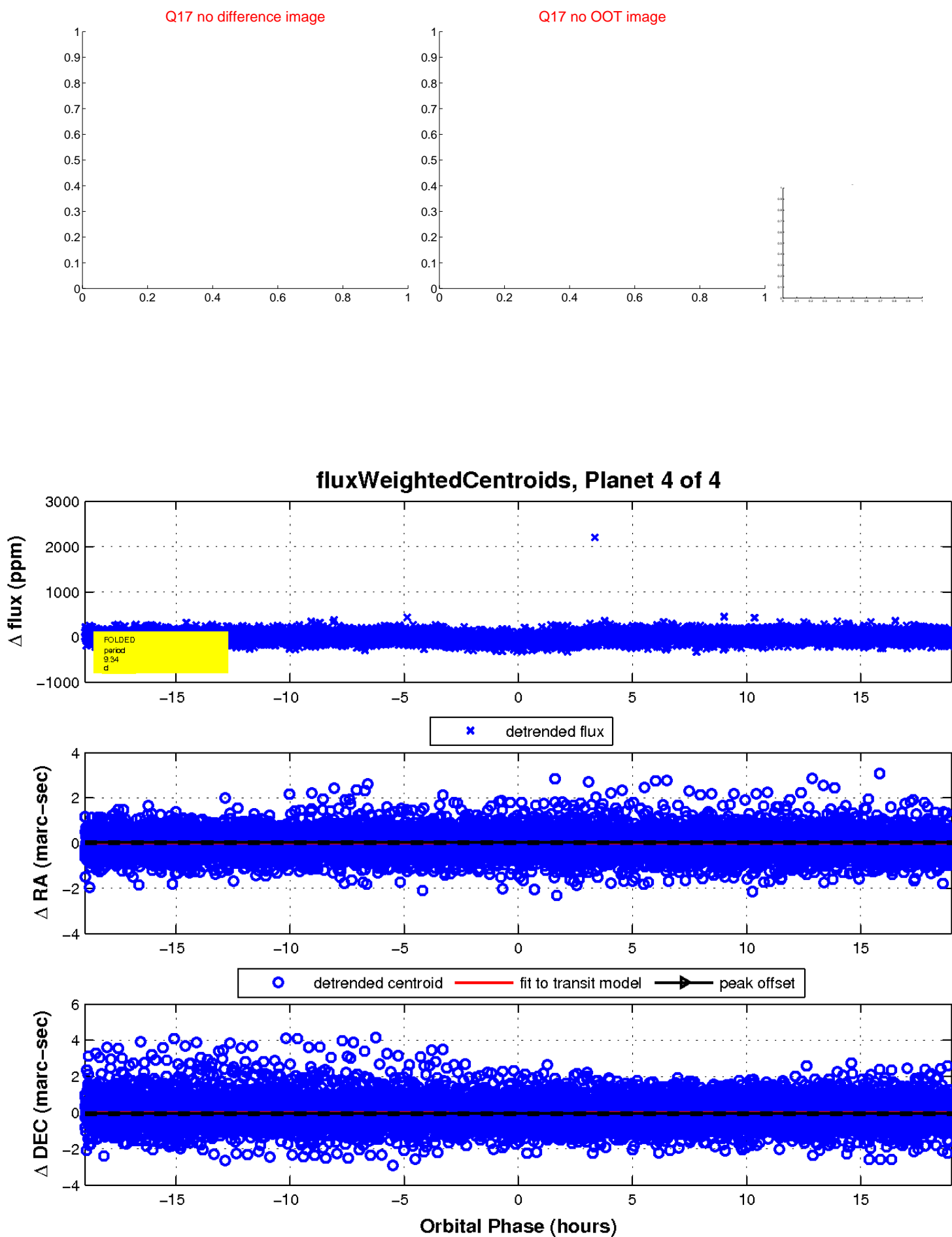
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

