

KIC 003222104

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})
003222104-01	OBS	No	0.788077	132.319195	0.0	5.966	8.6	0.0	2.03	8554	0.00	44810.72
003222104-02	OBS	No	5.311620	132.016898	130.5	0.954	13.7	15.6	2.03	8554	2.40	3519.69
003222104-03	OBS	No	33.959478	134.001969	202.0	0.839	13.0	15.7	2.03	8554	3.10	296.62
003222104-04	OBS	No	4.619142	133.770648	84.4	0.701	13.3	8.7	2.03	8554	1.96	4240.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003222104-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
003222104-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
003222104-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
003222104-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

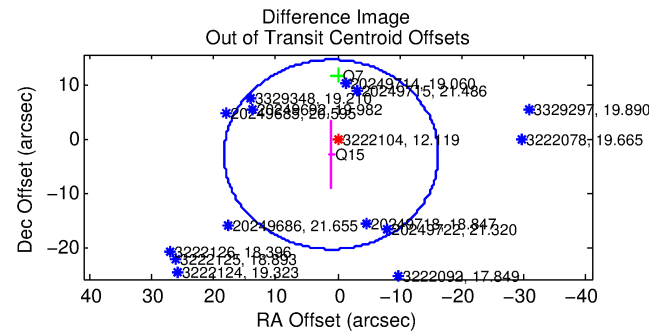
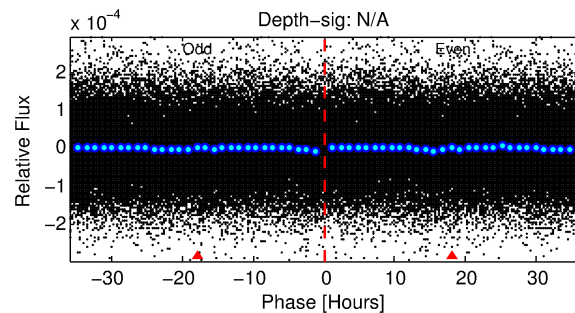
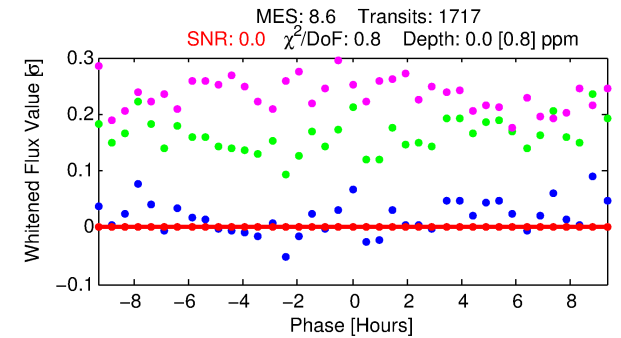
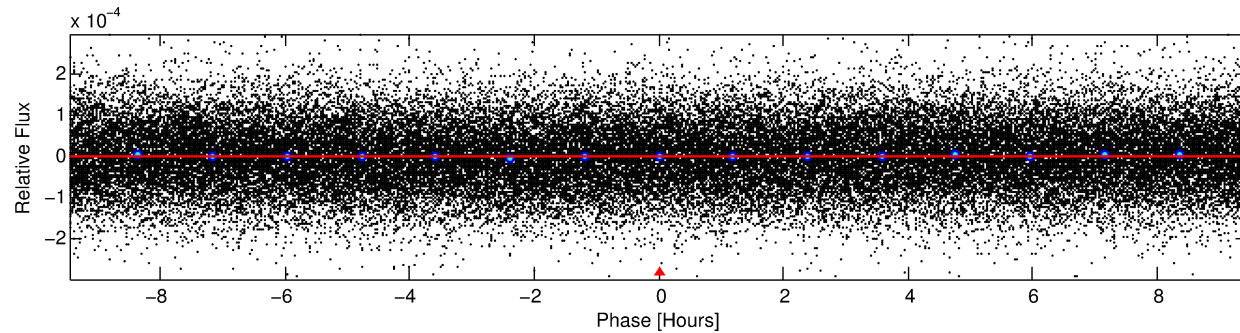
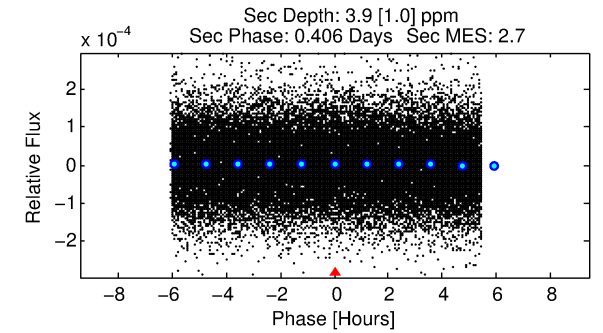
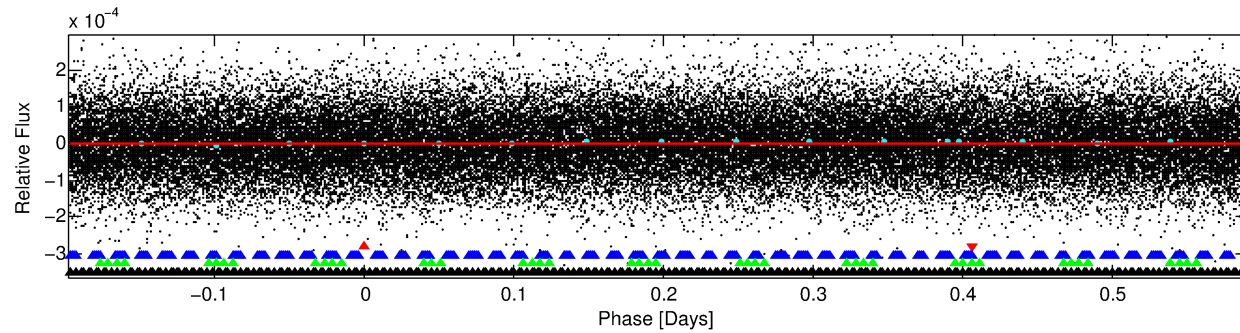
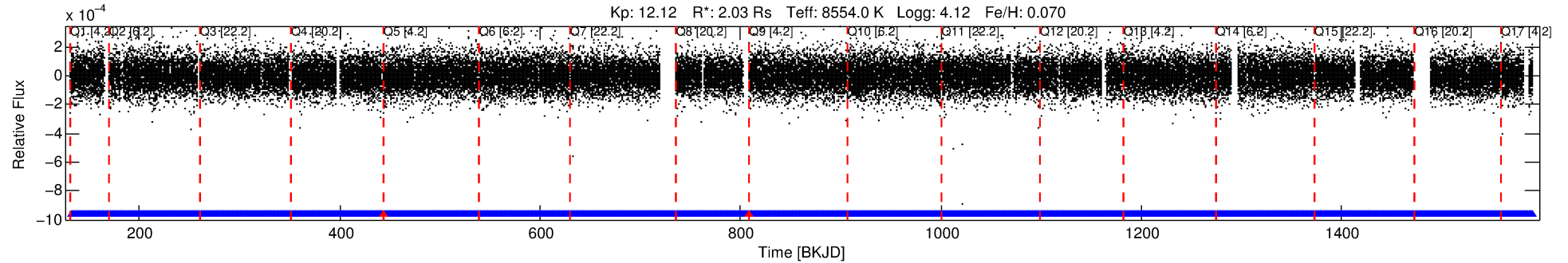
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003222104-01

No Significant Match Found

DV One-Page Summary

KIC: 3222104 Candidate: 1 of 4 Period: 0.788 d



DV Fit Results:

Period = 0.78808 [0.94808] d
Epoch = 132.3192 [340.9473] BKJD
Rp/R* = 0.0000 [0.0504]
a/R* = 1.00 [18.42]
b = 0.99 [129.40]
Seff = 44810.72 [73712.03]
Teq = 3710 [1526] K
Rp = 0.00 [11.14] Re
a = 0.0210 [0.0175] AU
Ag = 124762.78 [1013256758.14] [0.00]
Teffp = 107804 [218901392] K [0.00]

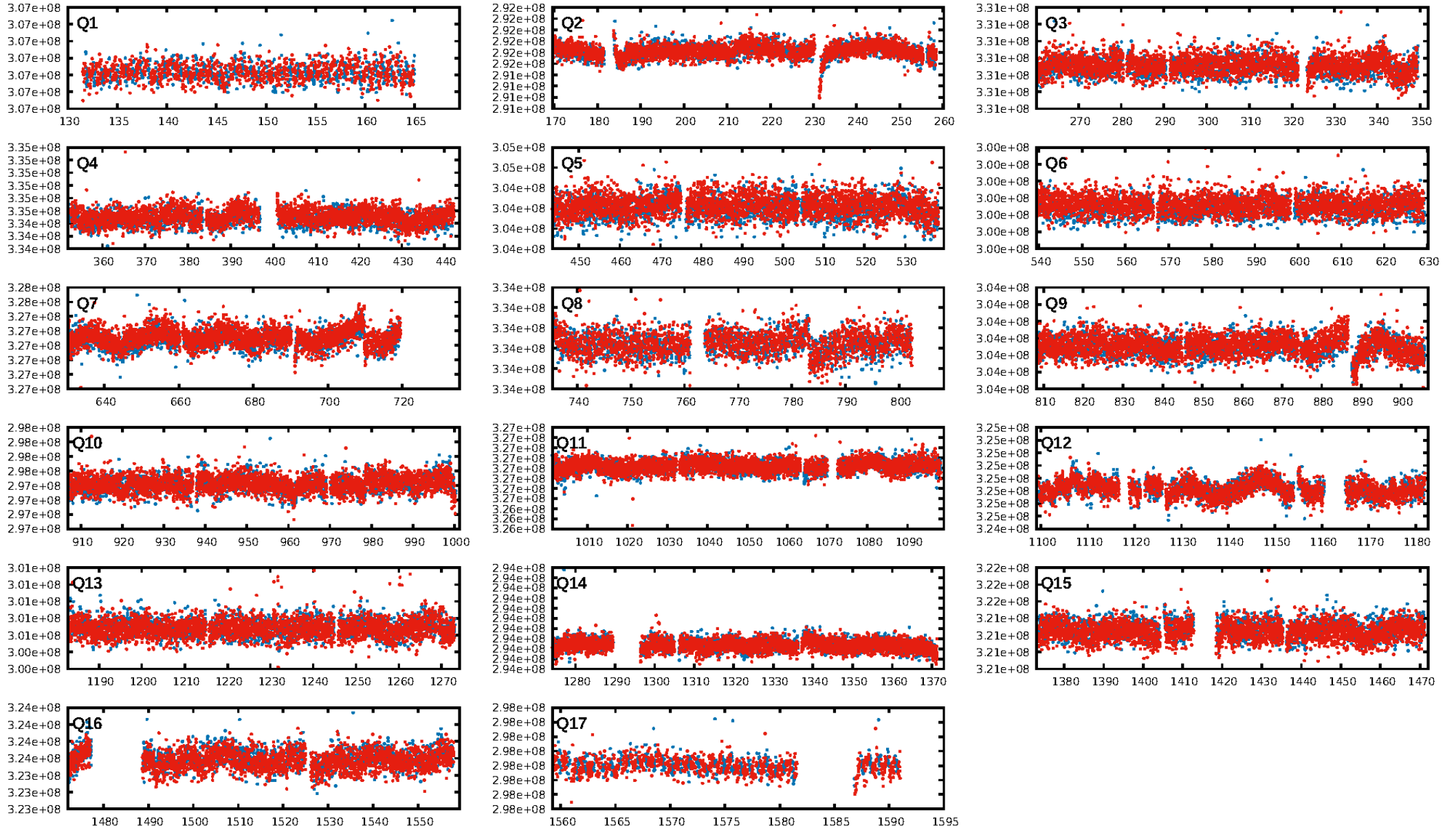
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.60e-46
RollingBand-fgt: 1.00 [1637/1639]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
QotOffset-rm: 2.970 arcsec [0.52σ]
KicOffset-rm: 2.985 arcsec [0.86σ]
QotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [17/17]

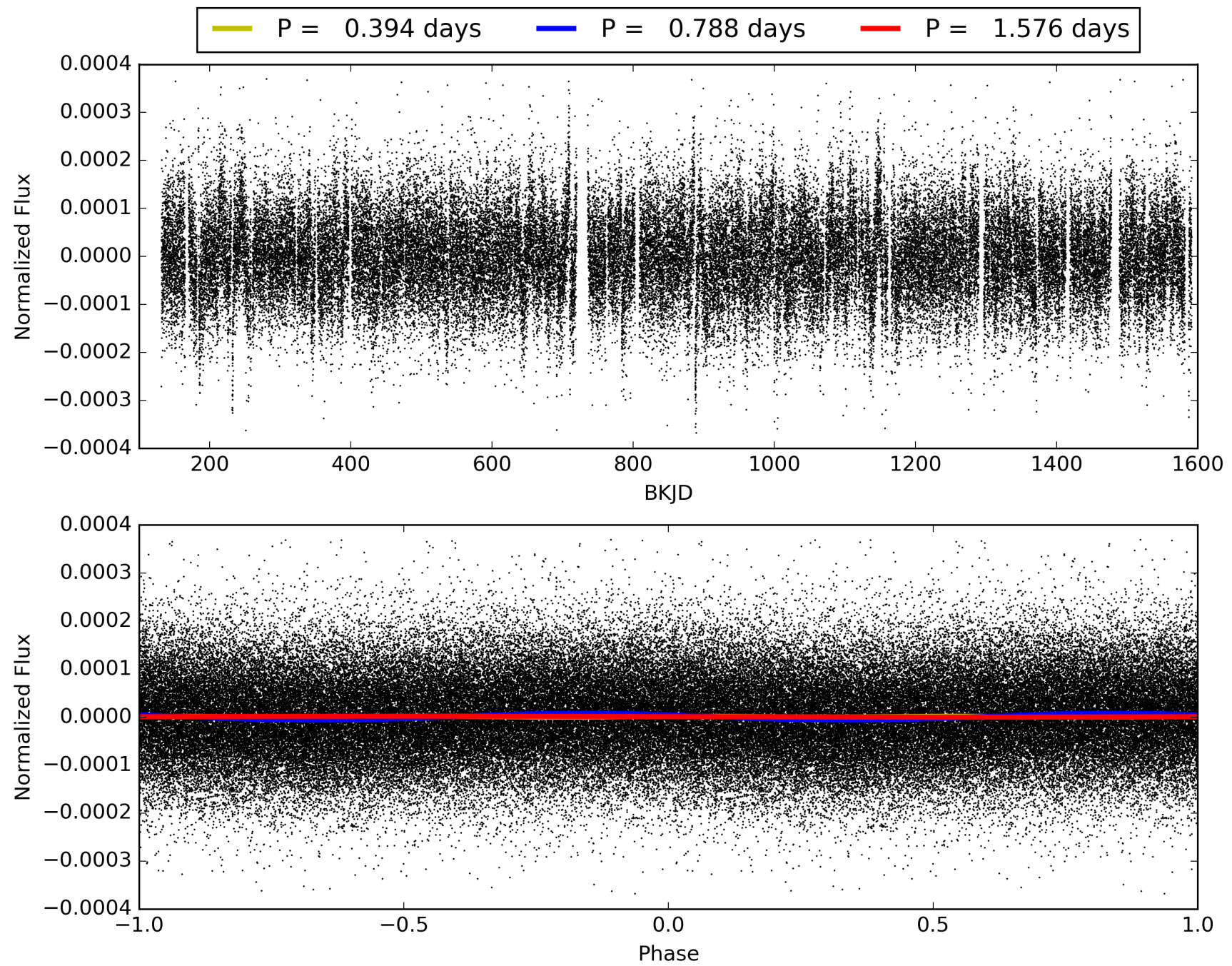
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:15:07 Z

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

TCE 003222104-01, PDC Light Curves

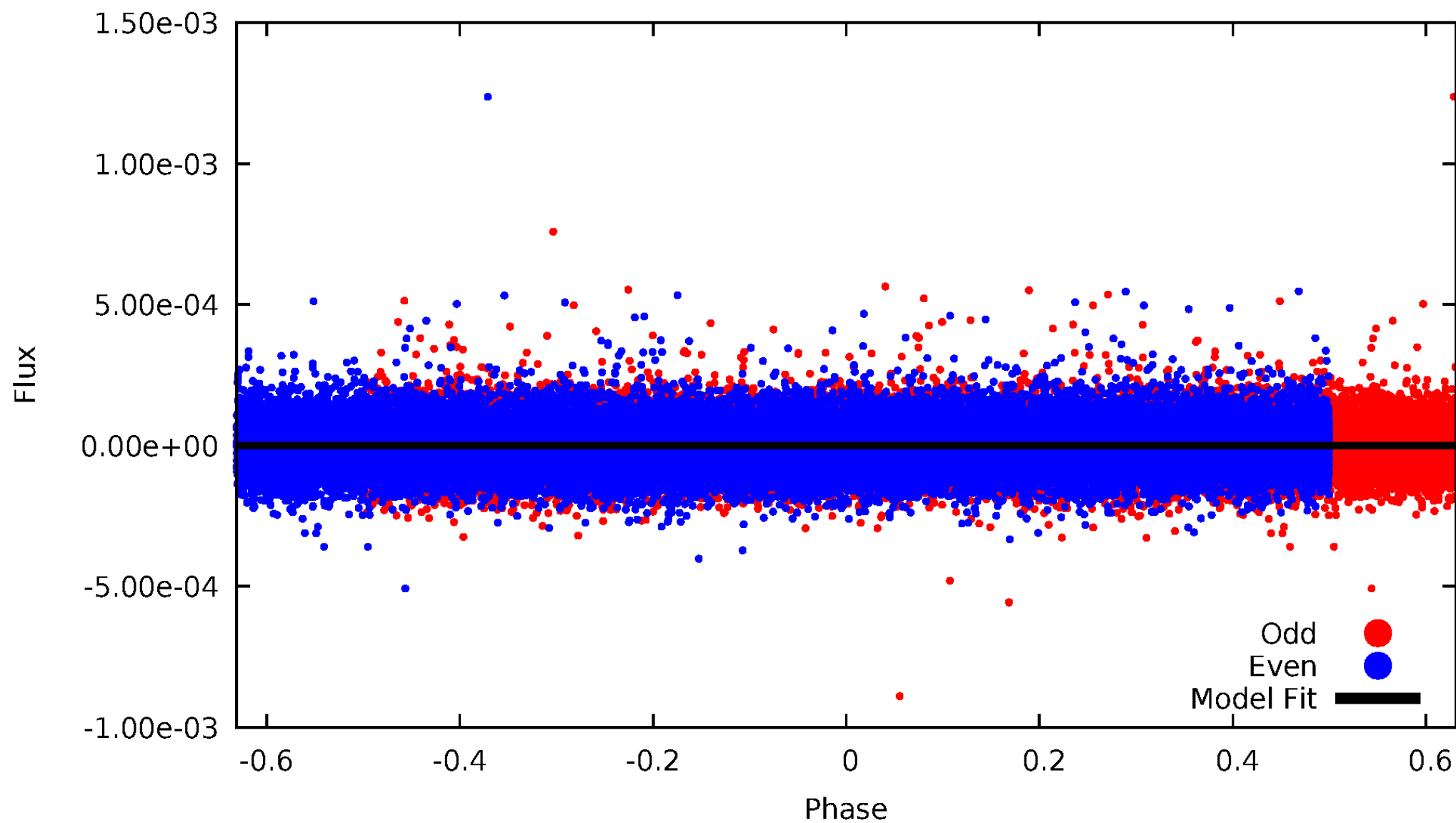


TCE 003222104-01



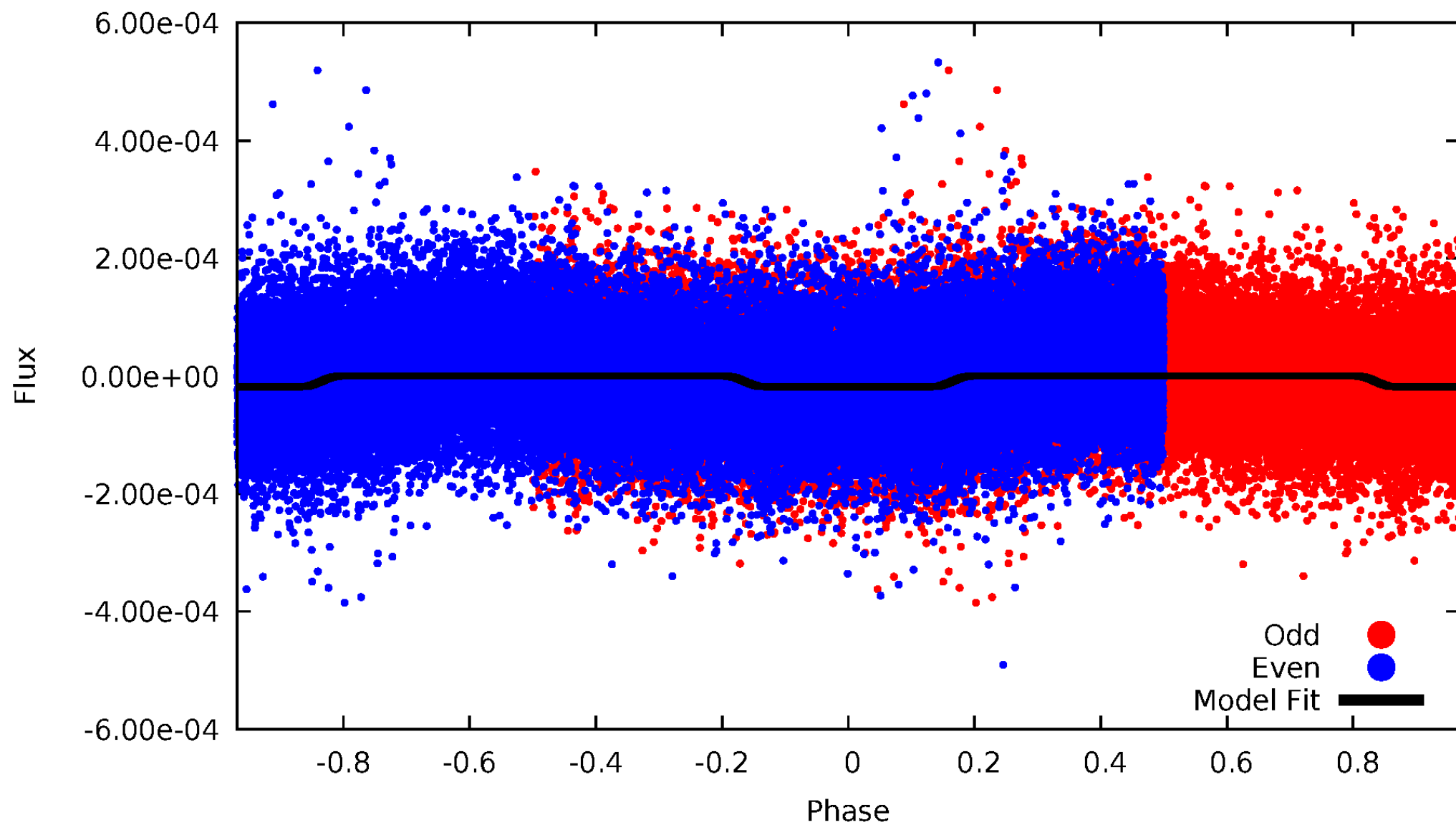
DV Odd/Even

TCE 003222104-01

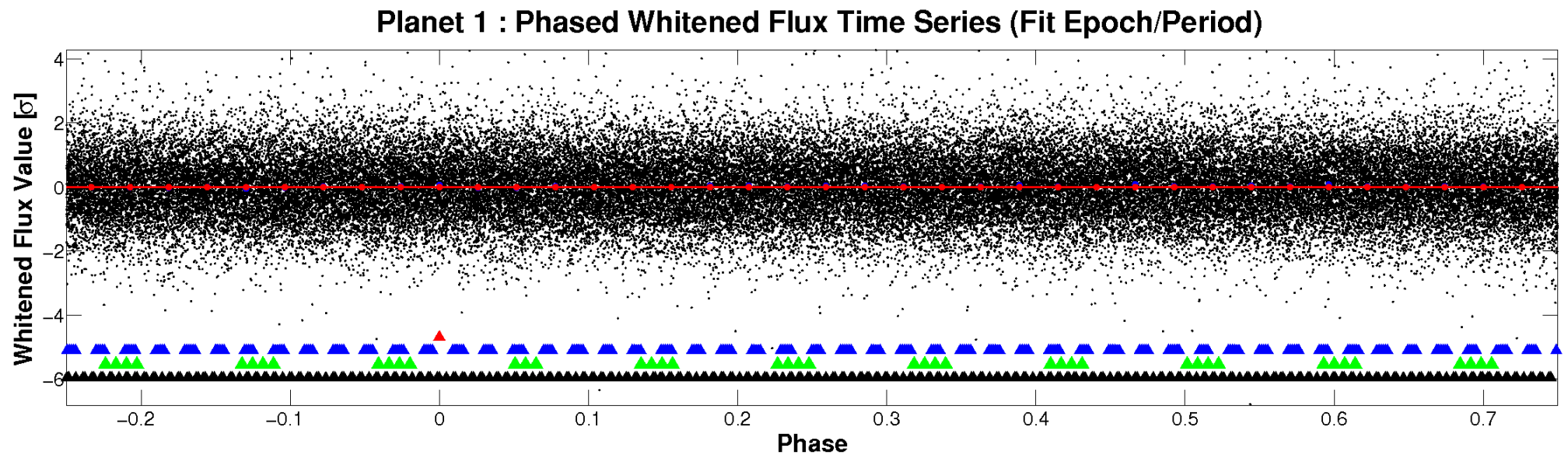
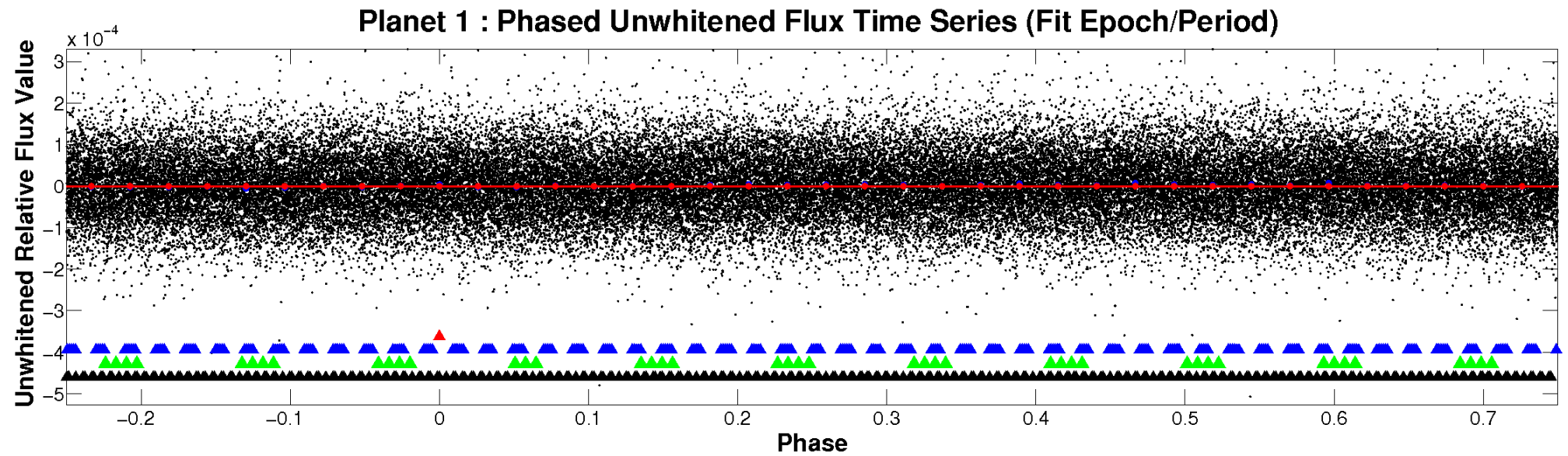


ALT Odd/Even

TCE 003222104-01

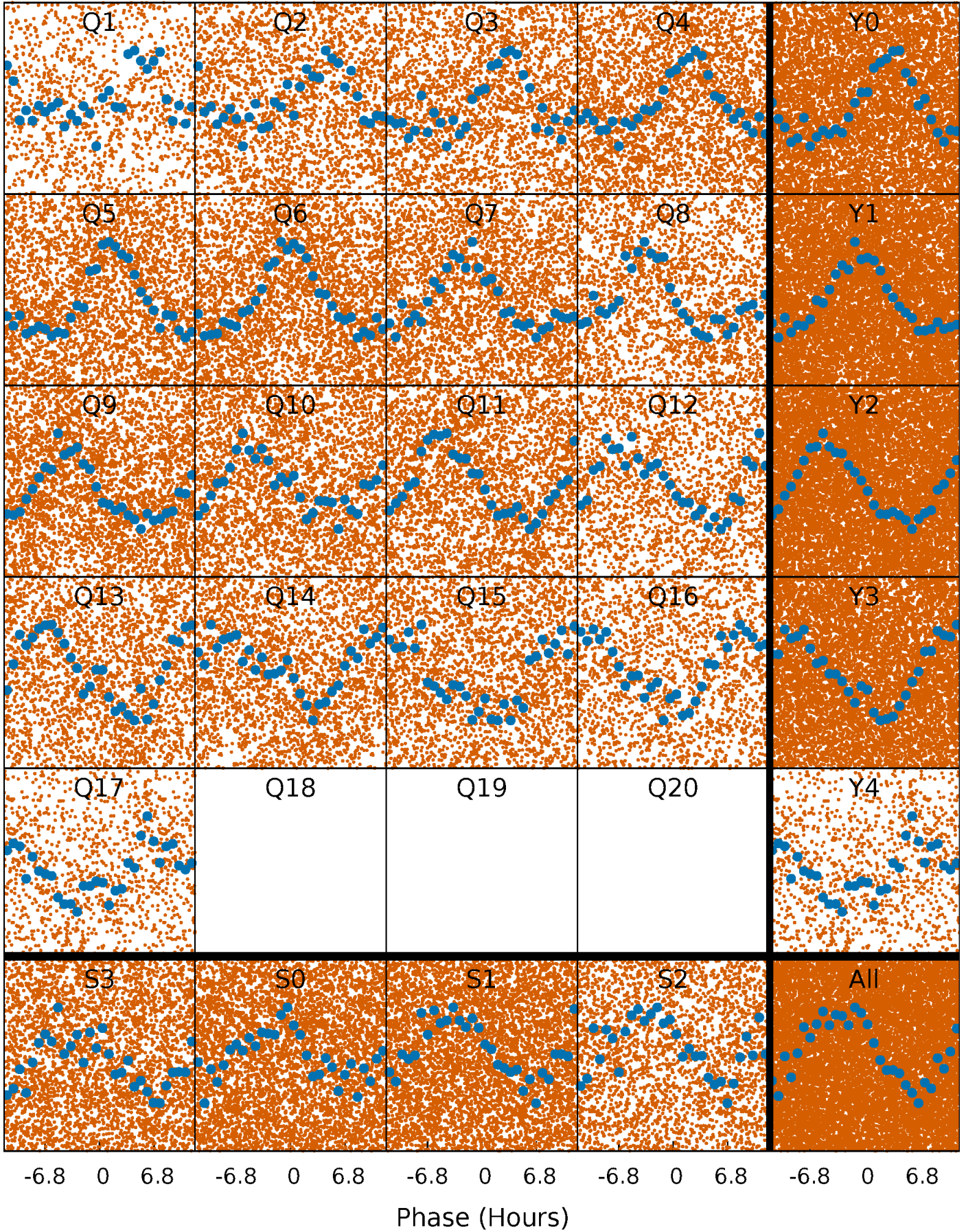


Non-Whitened Vs. Whitened Light Curve



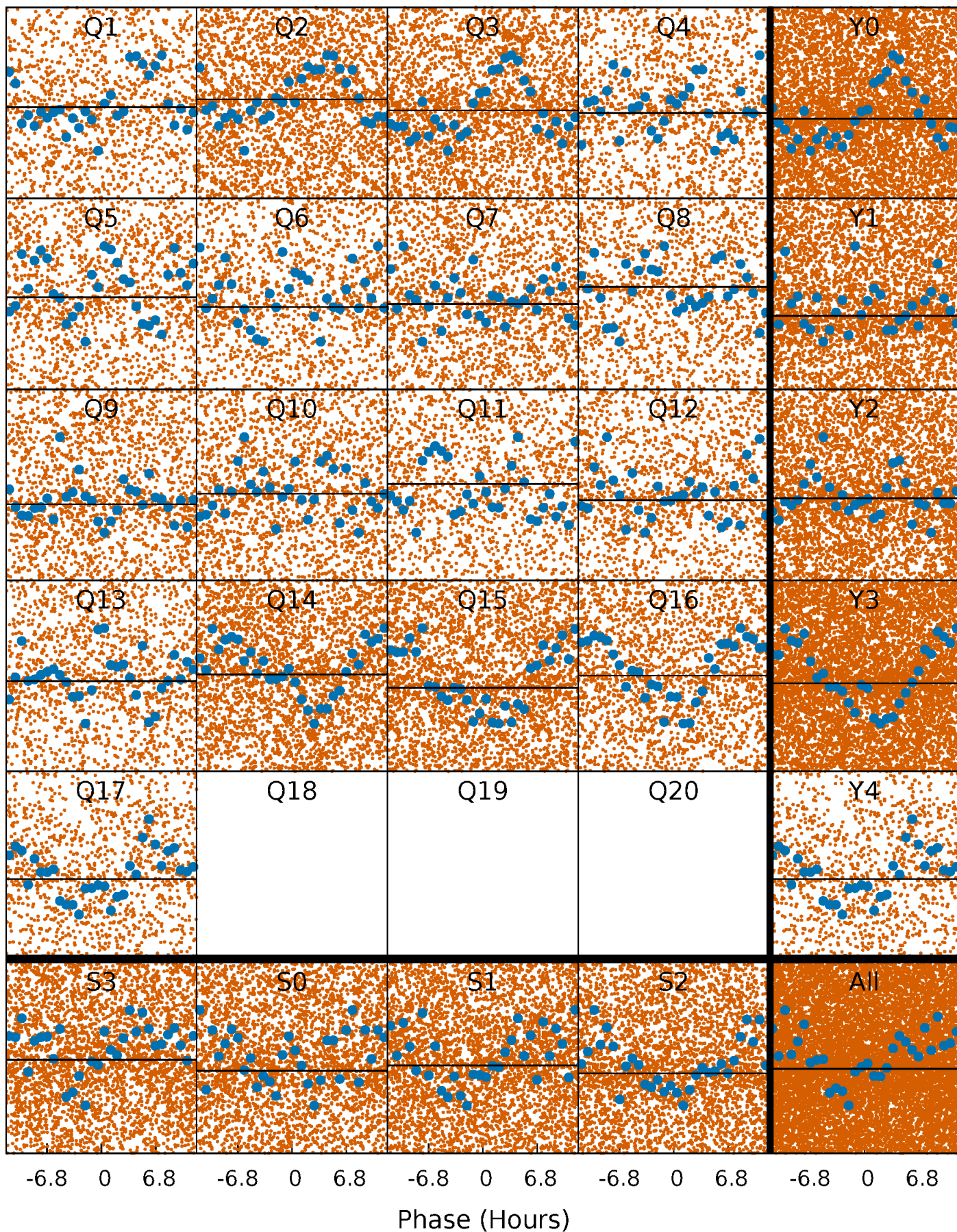
PDC Quarter-Phased Transit Curves

TCE 003222104-01 P= 0.788077 Days $T_0=132.319195$ (BKJD)



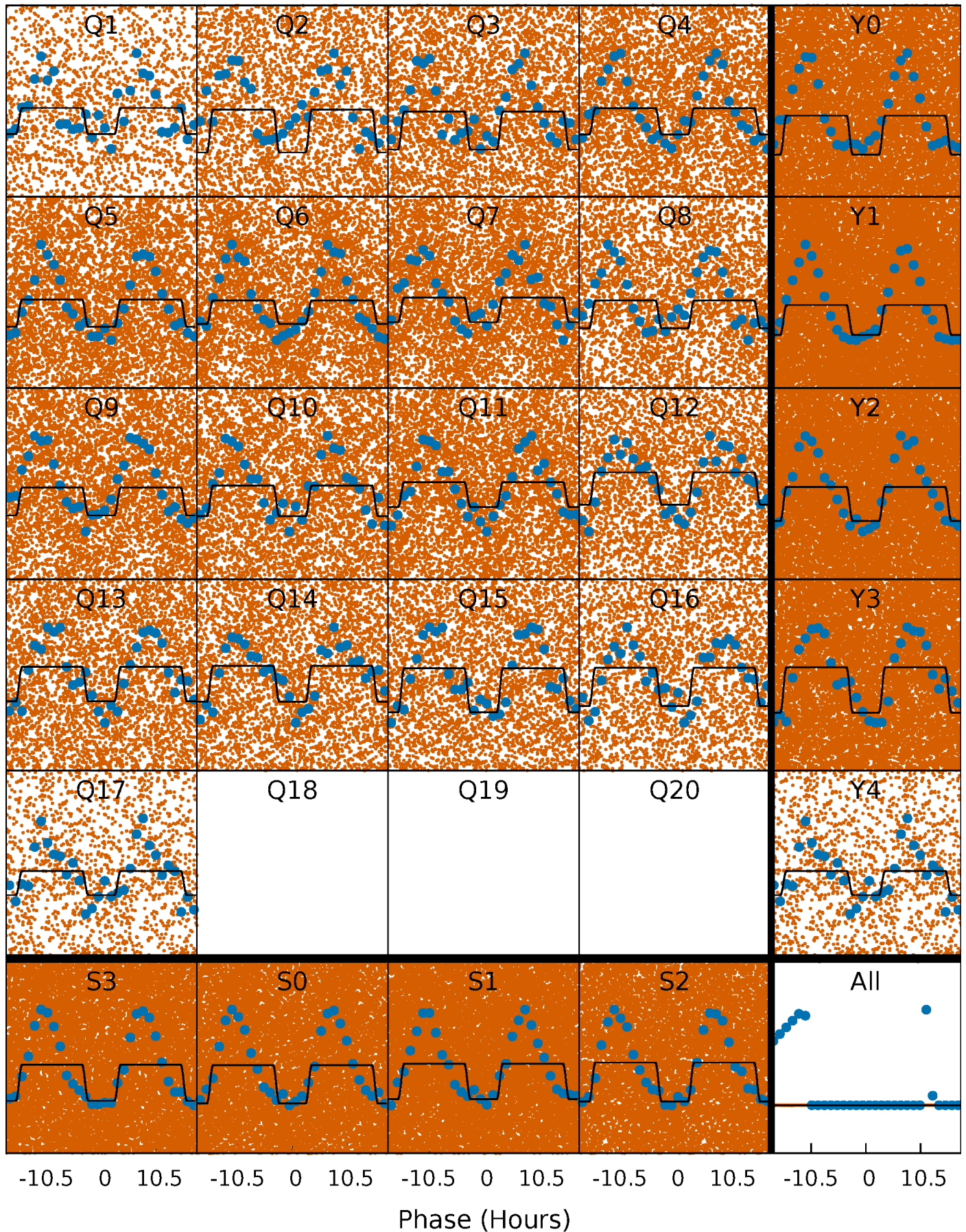
DV Quarter-Phased Transit Curves

TCE 003222104-01 P= 0.788077 Days $T_0=132.319195$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

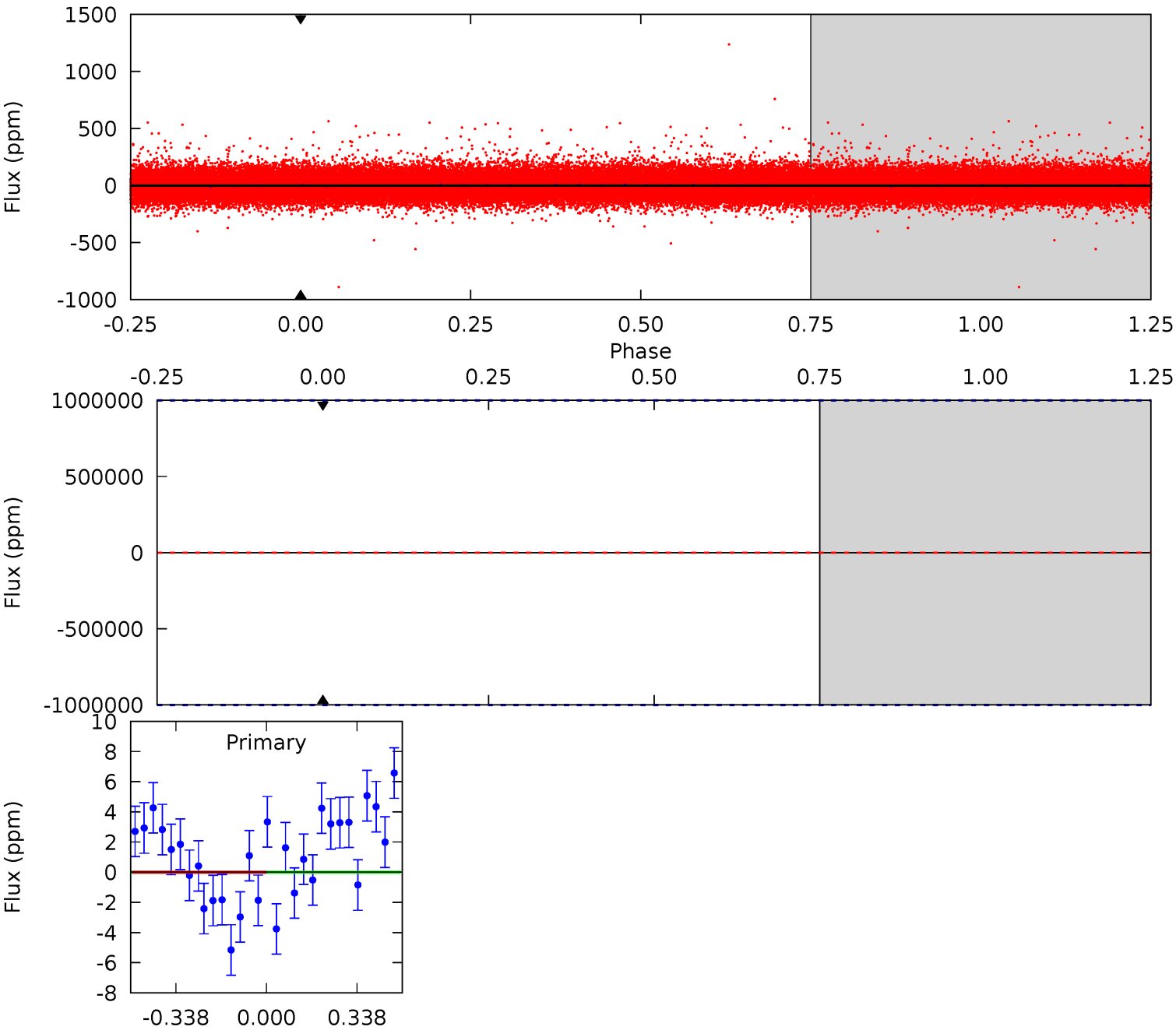
TCE 003222104-01 P= 0.787658 Days $T_0=132.235042$ (BKJD)



DV Model-Shift Uniqueness Test

003222104-01, P = 0.788077 Days, E = 130.743041 Days

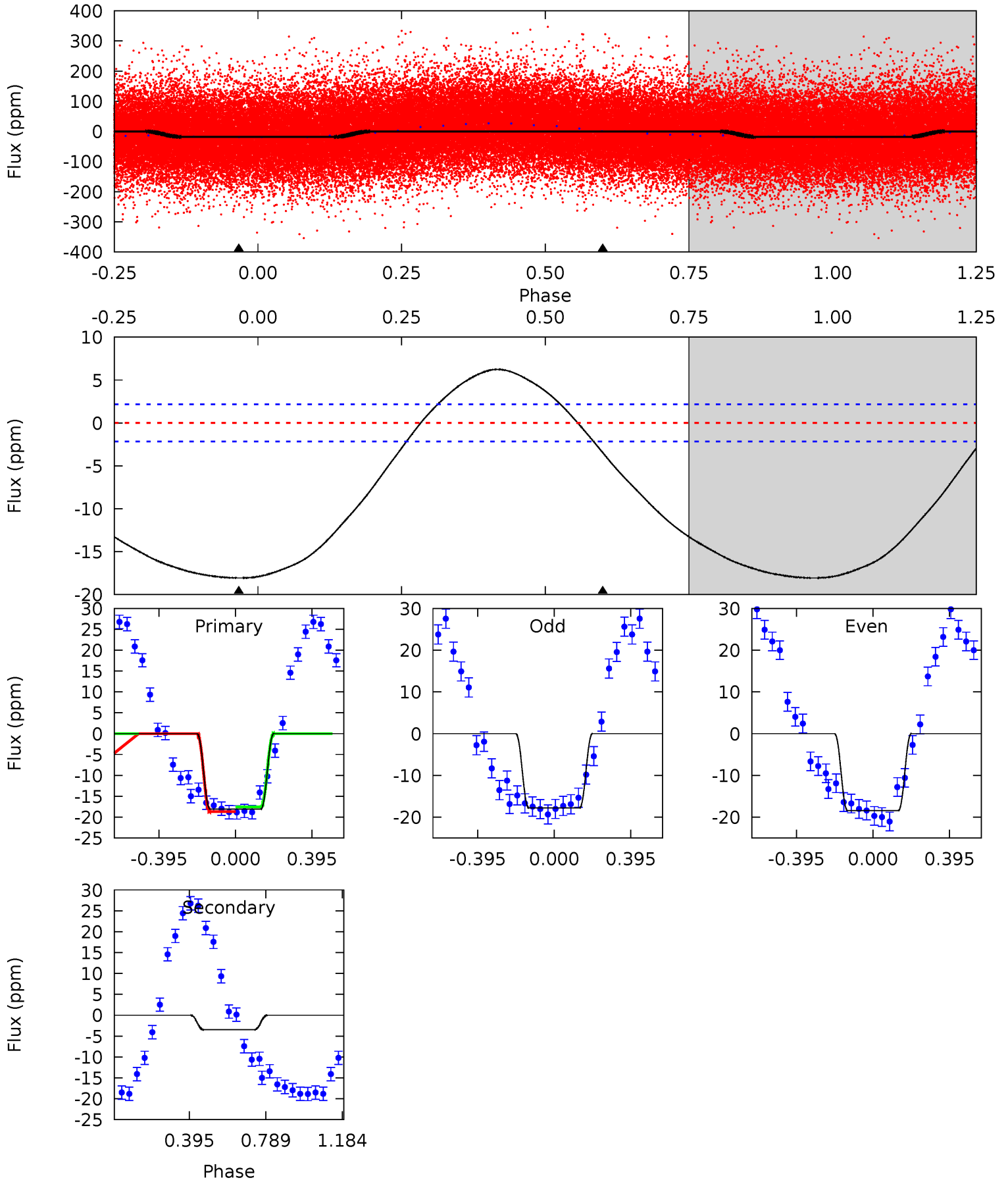
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003222104-01, P = 0.787658 Days, E = 131.447384 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.6	6.85	0	0	4.27	0.85	4.58	35.6	35.6	6.85	6.85	0.66	1.01	0.26	1.16



Stellar Parameters For KIC 003222104

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8554^{+234}_{-402}	$4.121^{+0.121}_{-0.162}$	$0.070^{+0.300}_{-0.500}$	$2.027^{+0.575}_{-0.383}$	$1.979^{+0.343}_{-0.419}$	$0.335^{+0.206}_{-0.147}$
	+3%/-5%	+3%/-4%	+429%/-714%	+28%/-19%	+17%/-21%	+61%/-44%
Source	KIC0	KIC0	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 003222104-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$7.54^{+8.92}_{-5.55}$	4779^{+1915}_{-965}	$-8909^{+232647}_{-284107}$	$0.002^{+1167.519}_{-1308.539}$
Alt.	-3 ± 1	$8.09^{+8.09}_{-5.95}$	4875^{+1917}_{-1041}	-3925^{+1021}_{-1287}	$0.017^{+0.205}_{-0.014}$

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

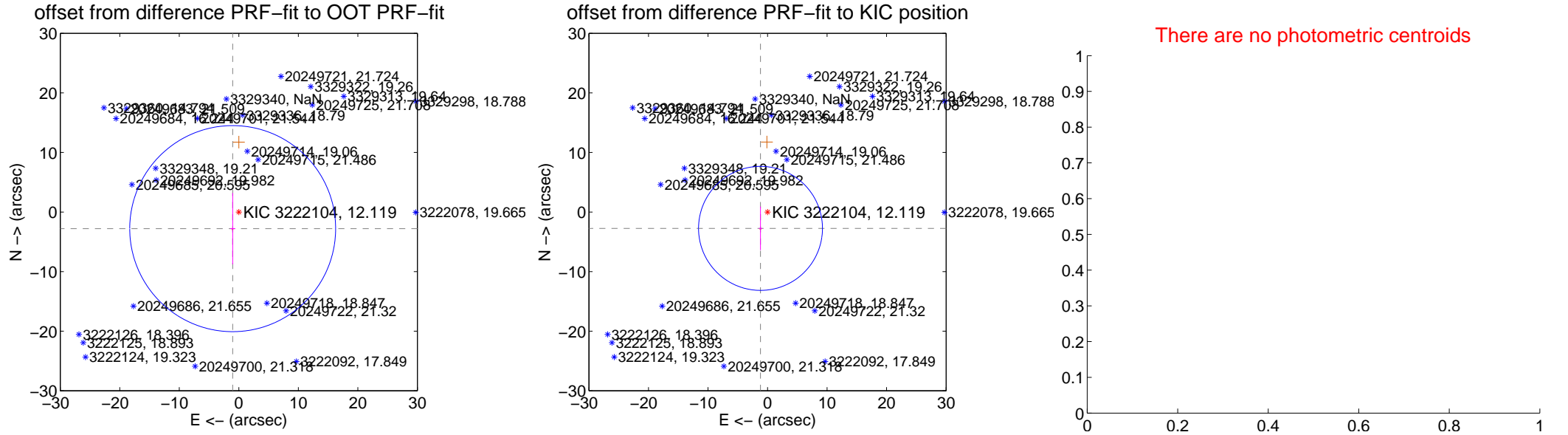
DV Centroid Data

Supplemental centroid analysis for 003222104-01. Kepler magnitude: 12.12. Transit SNR 0.00

There are 0 quarters with good PRF difference image offsets

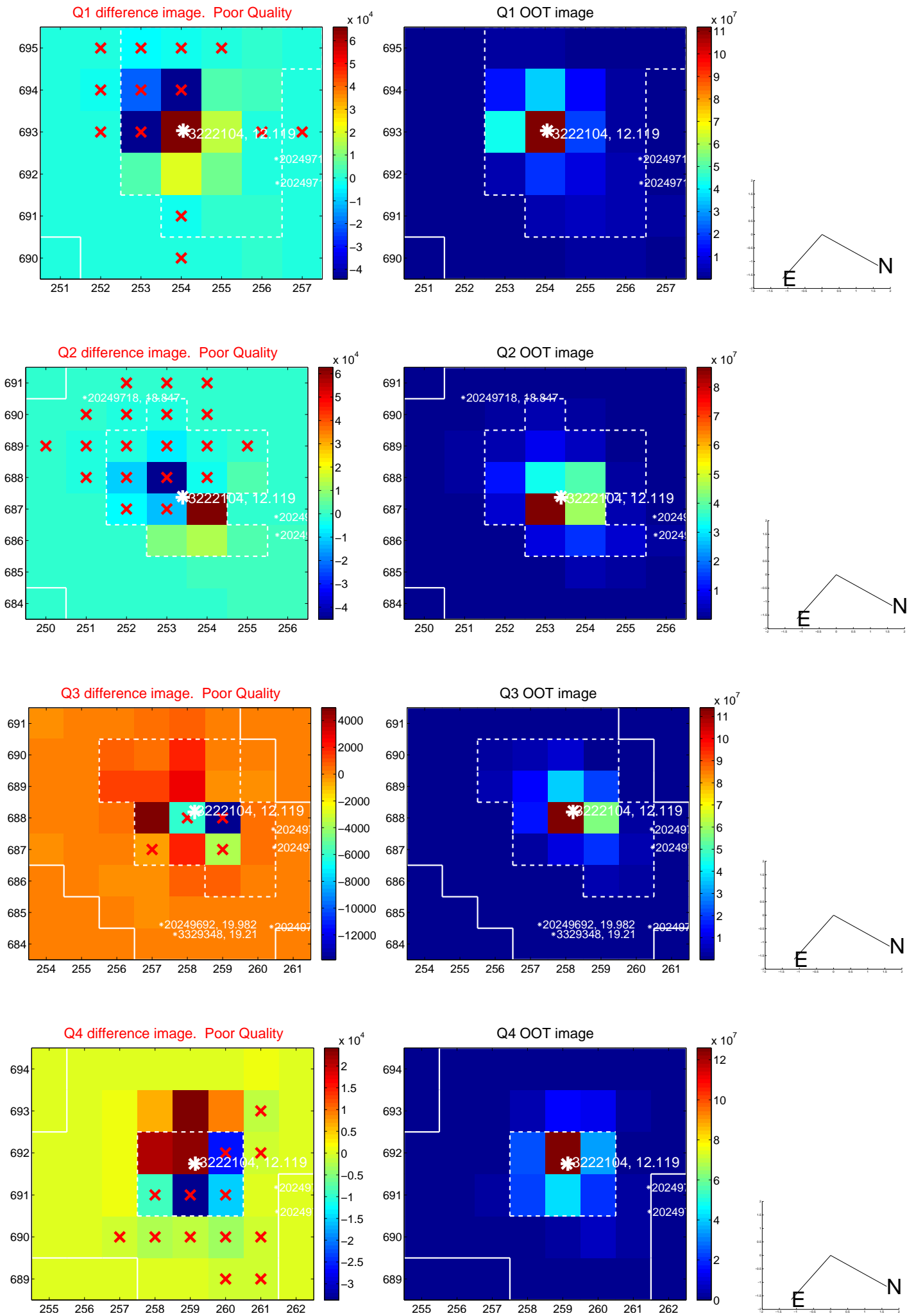
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.970 ± 5.765	0.52	1.030 ± 0.435	-2.786 ± 5.987
PRF-fit source offset from KIC position	2.985 ± 3.469	0.86	1.181 ± 0.280	-2.742 ± 3.660
photometric centroid source offset	—	—	—	—

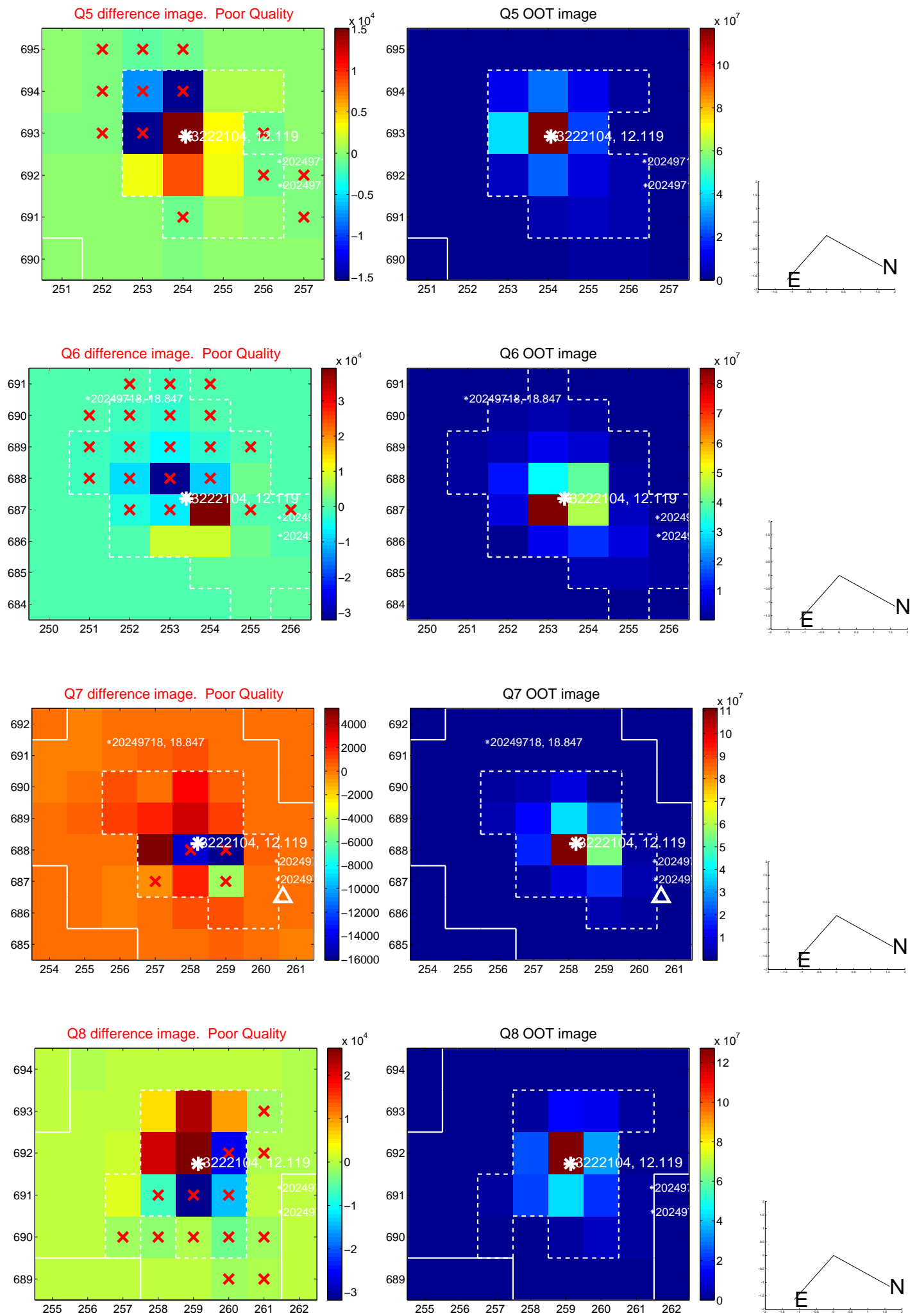


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

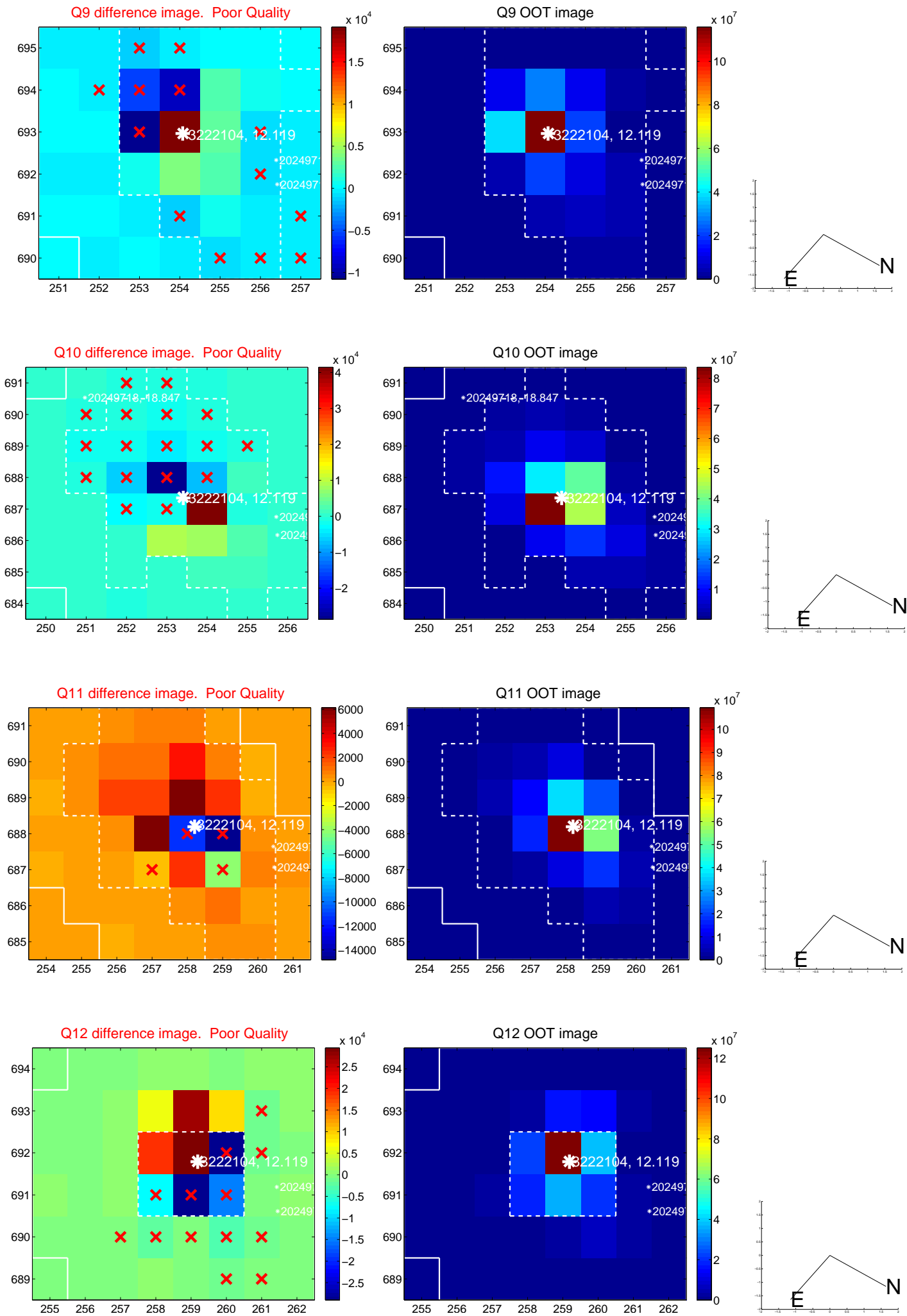
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



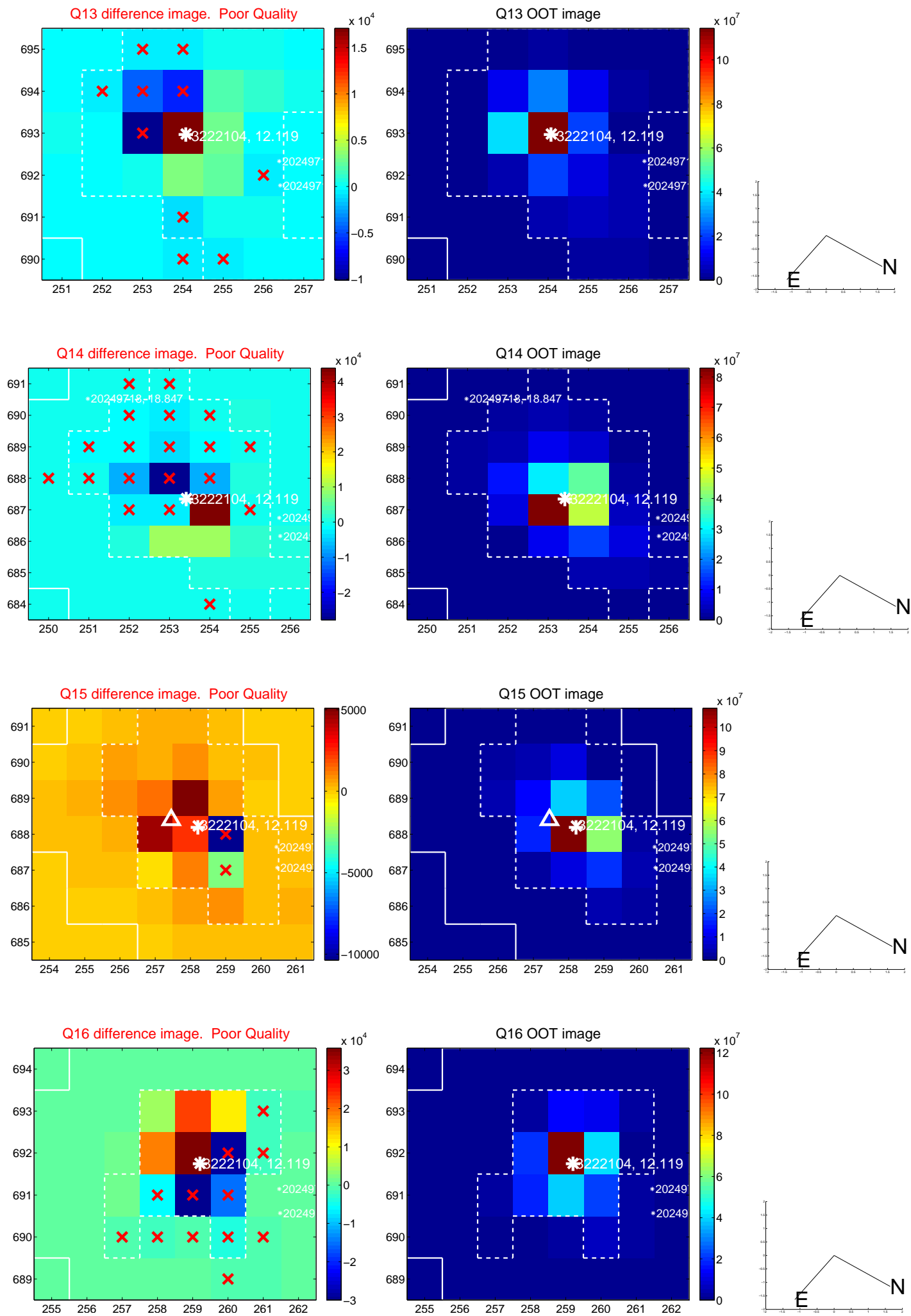
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



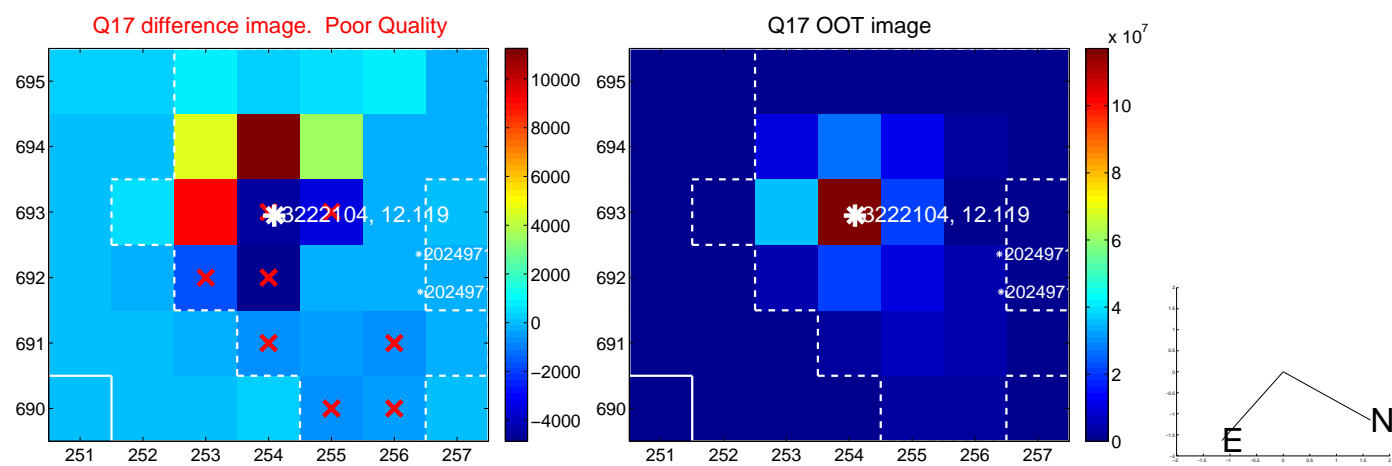
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



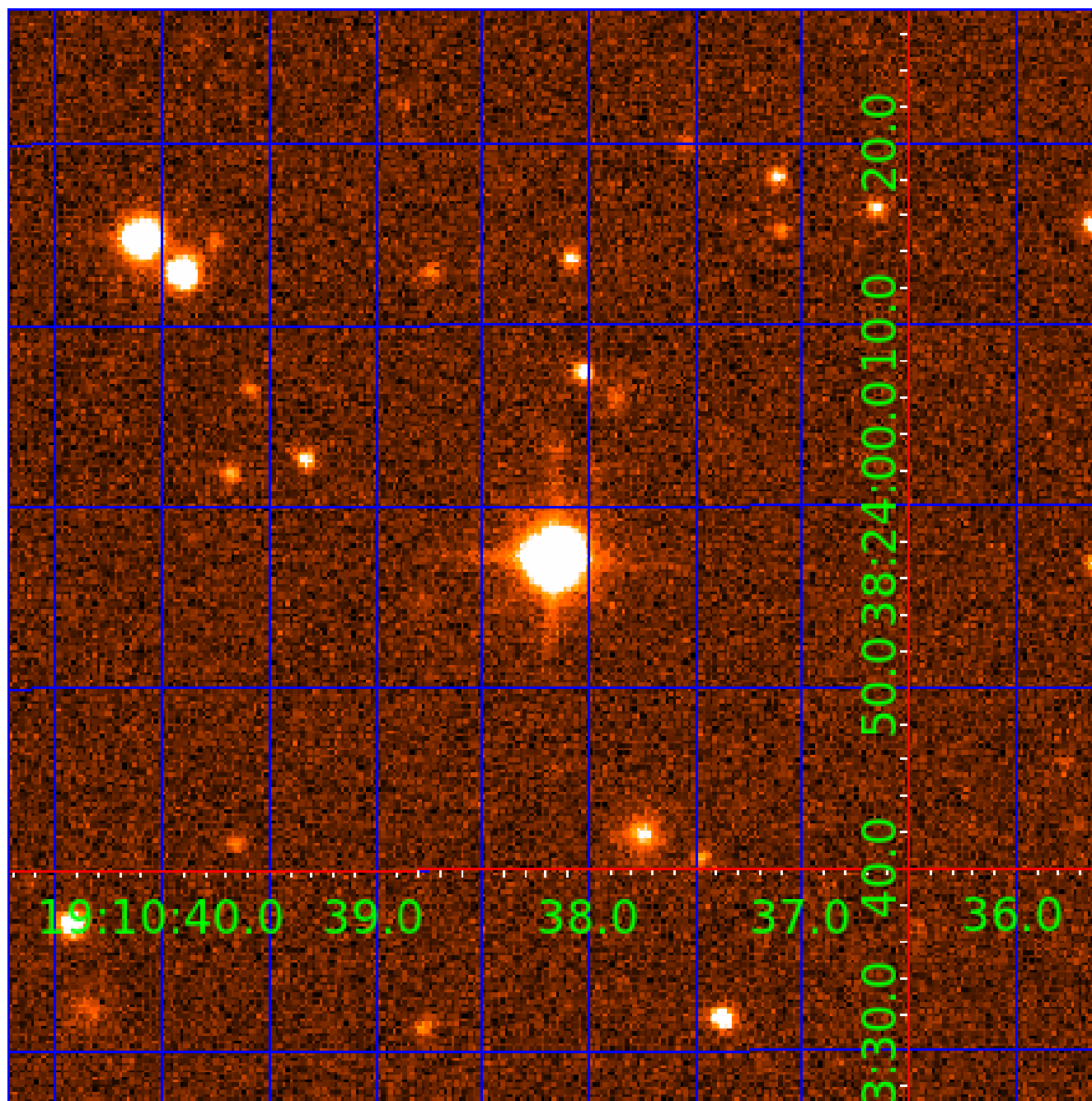
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 003222104

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})
003222104-01	OBS	No	0.788077	132.319195	0.0	5.966	8.6	0.0	2.03	8554	0.00	44810.72
003222104-02	OBS	No	5.311620	132.016898	130.5	0.954	13.7	15.6	2.03	8554	2.40	3519.69
003222104-03	OBS	No	33.959478	134.001969	202.0	0.839	13.0	15.7	2.03	8554	3.10	296.62
003222104-04	OBS	No	4.619142	133.770648	84.4	0.701	13.3	8.7	2.03	8554	1.96	4240.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003222104-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
003222104-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
003222104-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
003222104-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

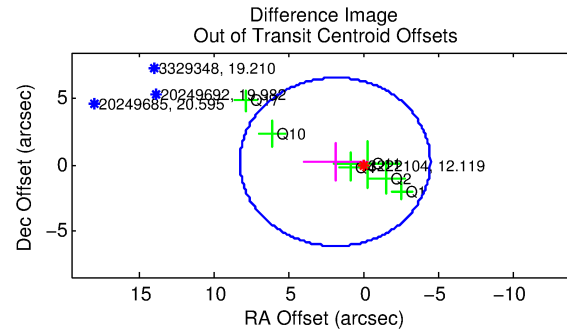
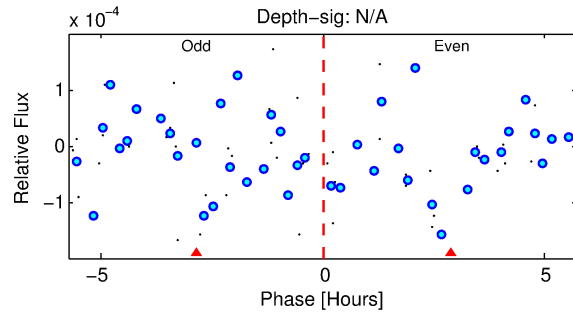
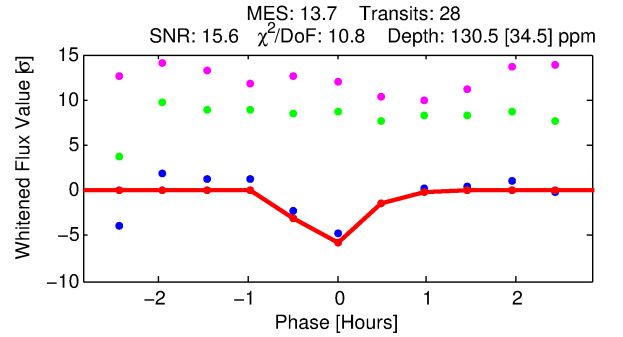
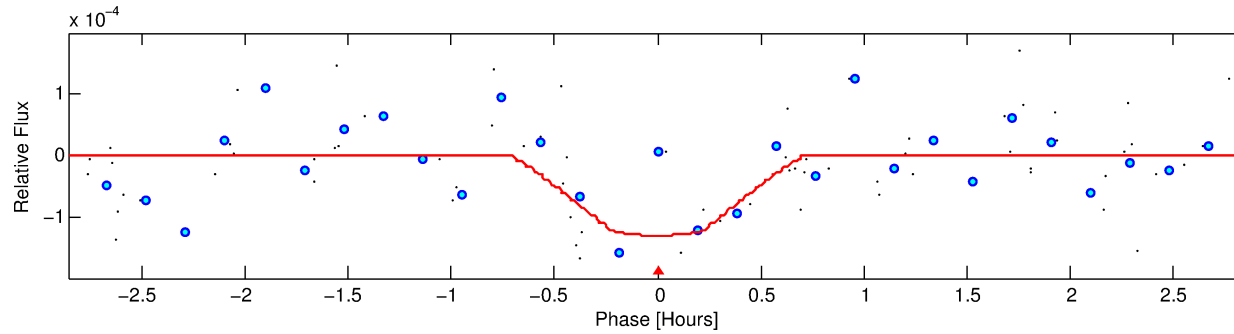
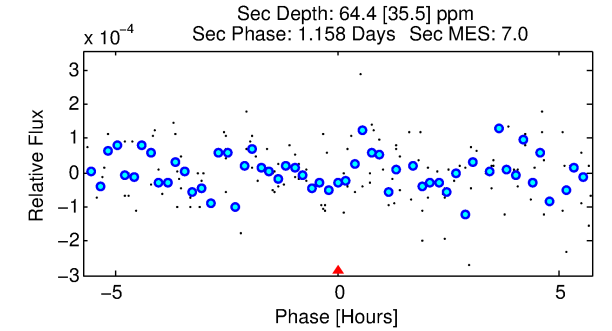
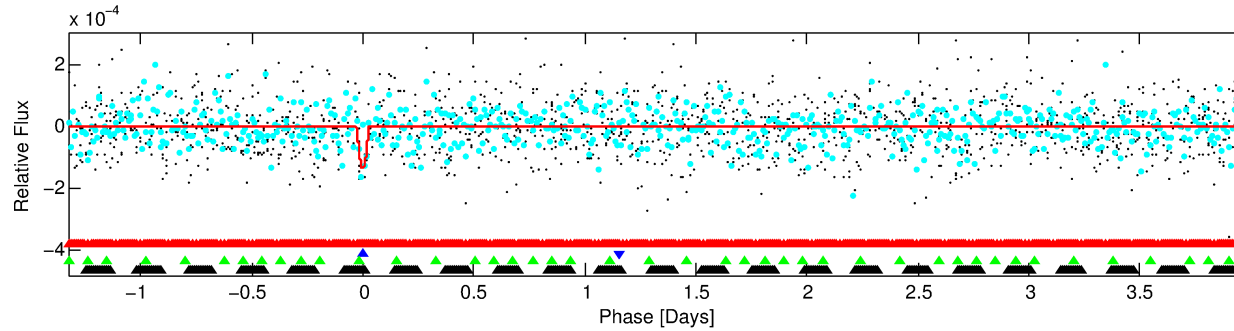
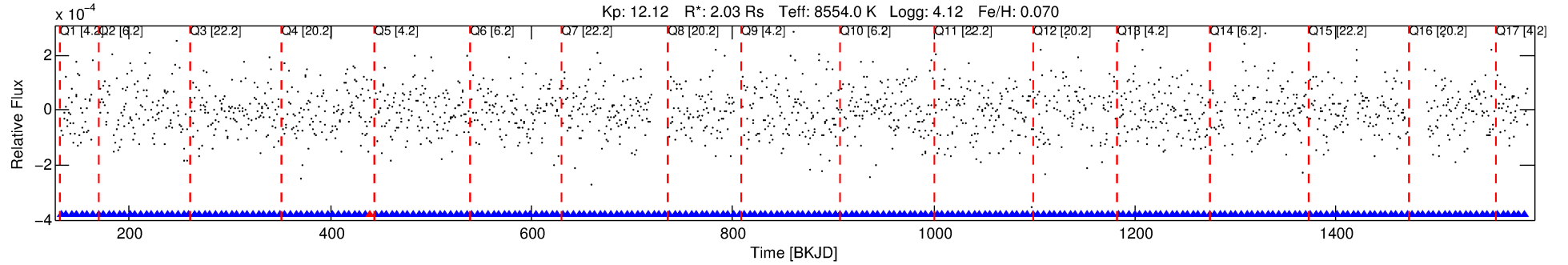
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003222104-02

No Significant Match Found

DV One-Page Summary

KIC: 3222104 Candidate: 2 of 4 Period: 5.312 d



DV Fit Results:

Period = 5.31162 [0.00004] d
Epoch = 132.0169 [0.0046] BKJD
Rp/R* = 0.0109 [0.0092]
a/R* = 39.52 [199.06]
b = 0.40 [10.58]
Seff = 3519.69 [1283.33]
Teq = 1964 [179] K
Rp = 2.40 [2.14] Re
a = 0.0748 [0.0169] AU
Ag = 34.43 [62.07] [0.54σ]
Teffp = 7356 [3283] K [1.64σ]

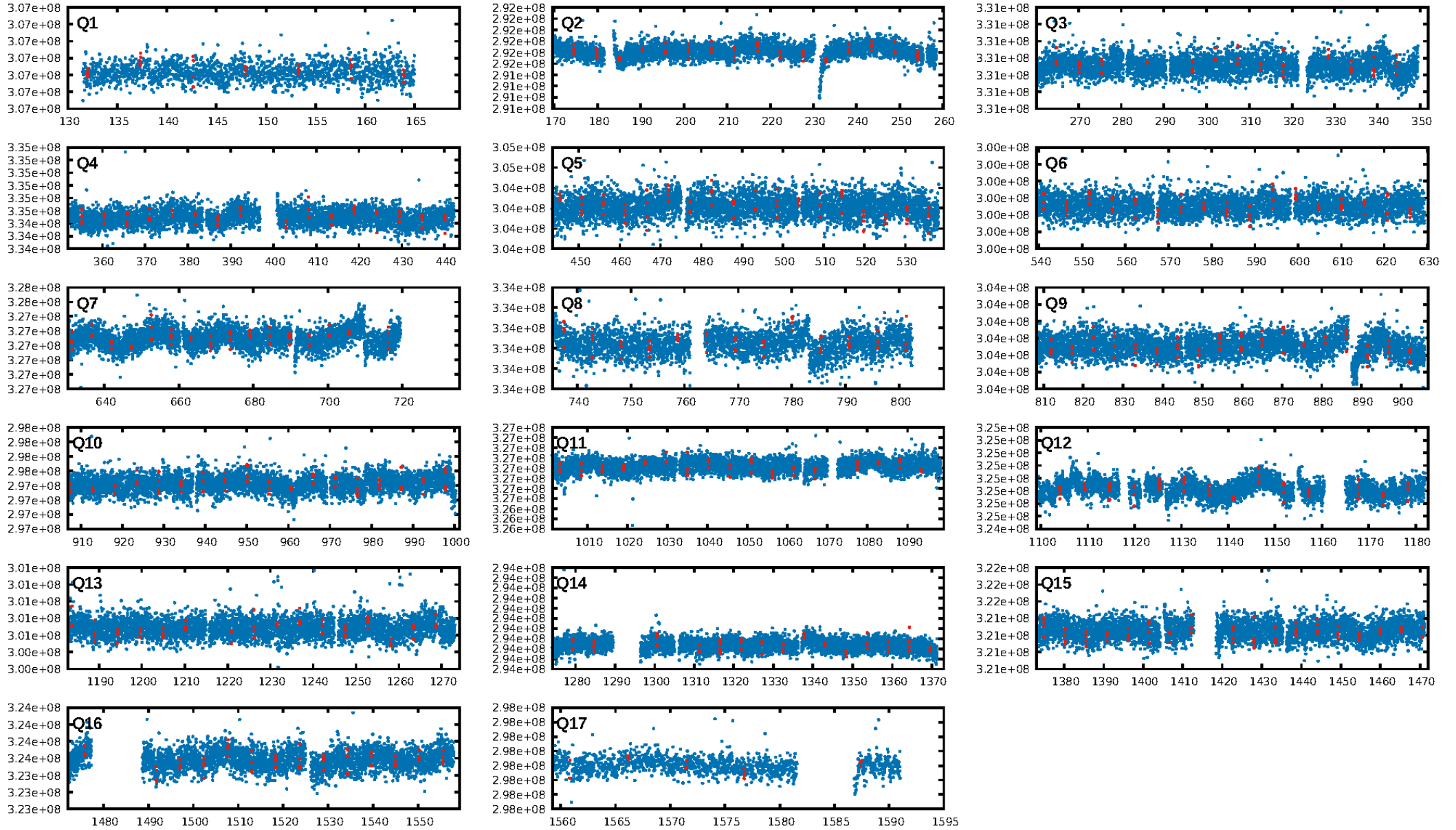
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.03σ]
LongPeriod-sig: 100.0% [541.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 1.21e-19
RollingBand-fgt: 0.96 [27/28]
GhostDiagnostic-chr: -0.7461
Centroid-sig: 1.4%
Centroid-so: 0.907 arcsec [2.24σ]
OotOffset-rm: 1.873 arcsec [0.88σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-rm: 1.950 arcsec [0.92σ]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.76 [13/17]

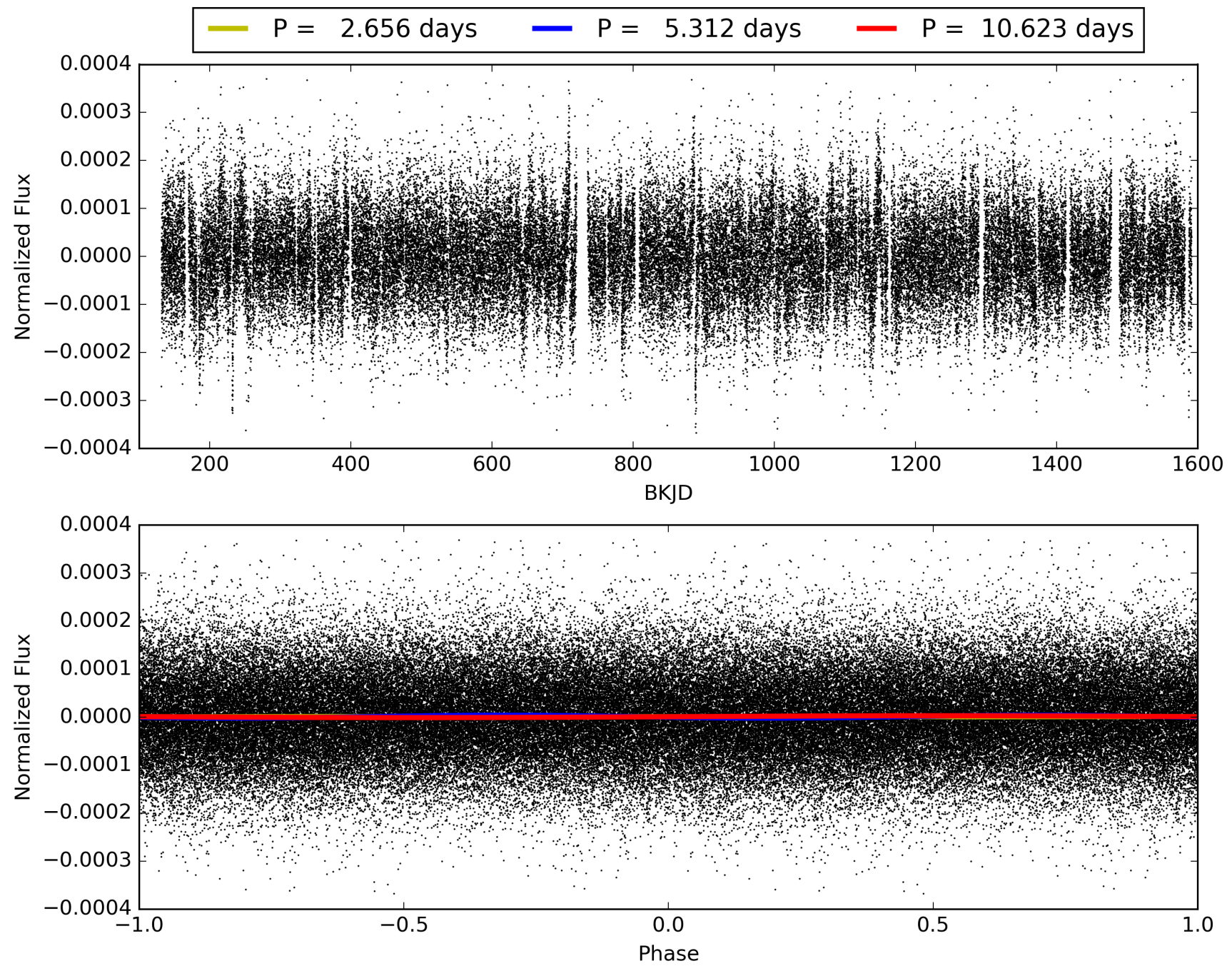
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:15:18 Z

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

TCE 003222104-02, PDC Light Curves

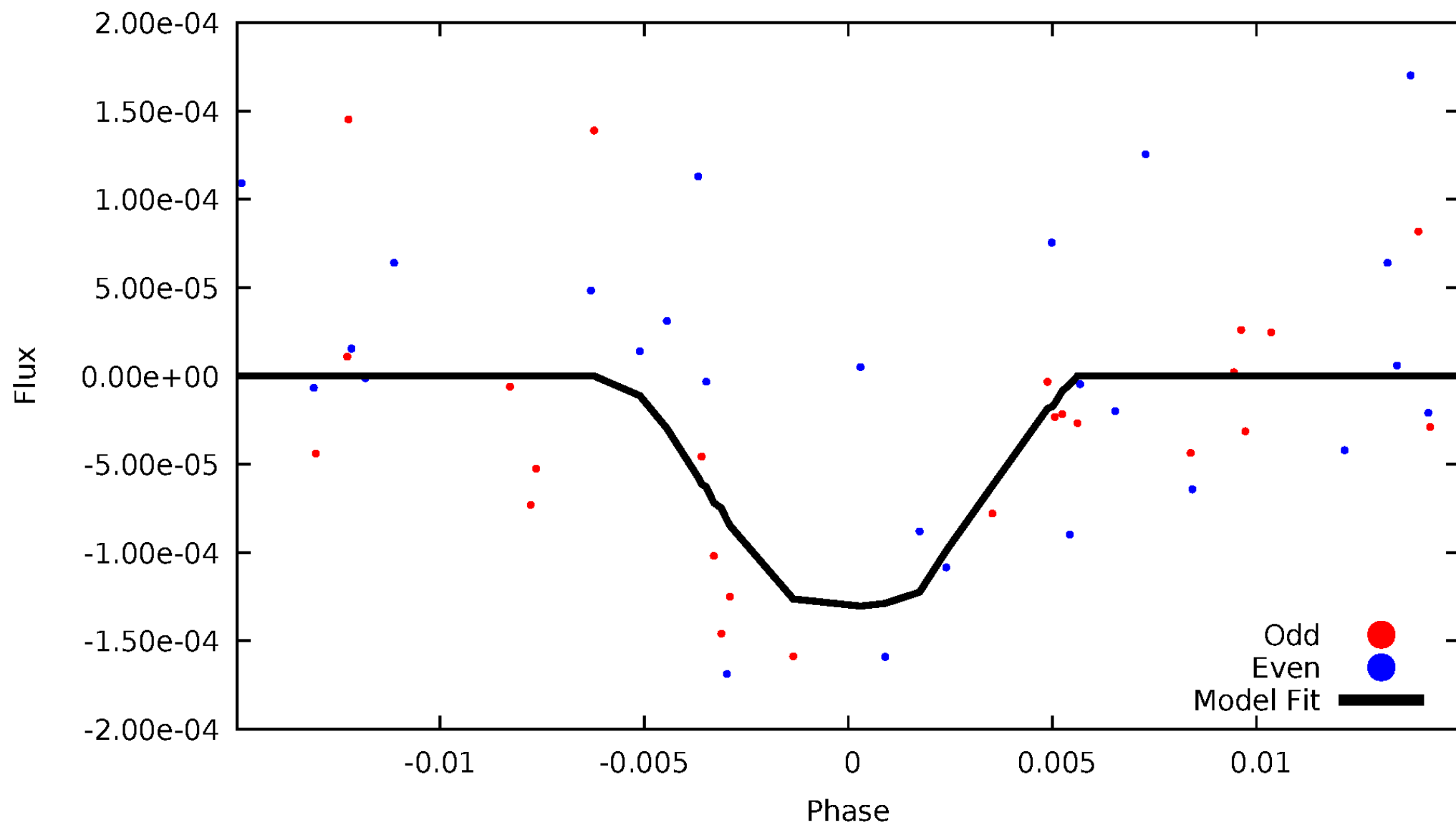


TCE 003222104-02



DV Odd/Even

TCE 003222104-02

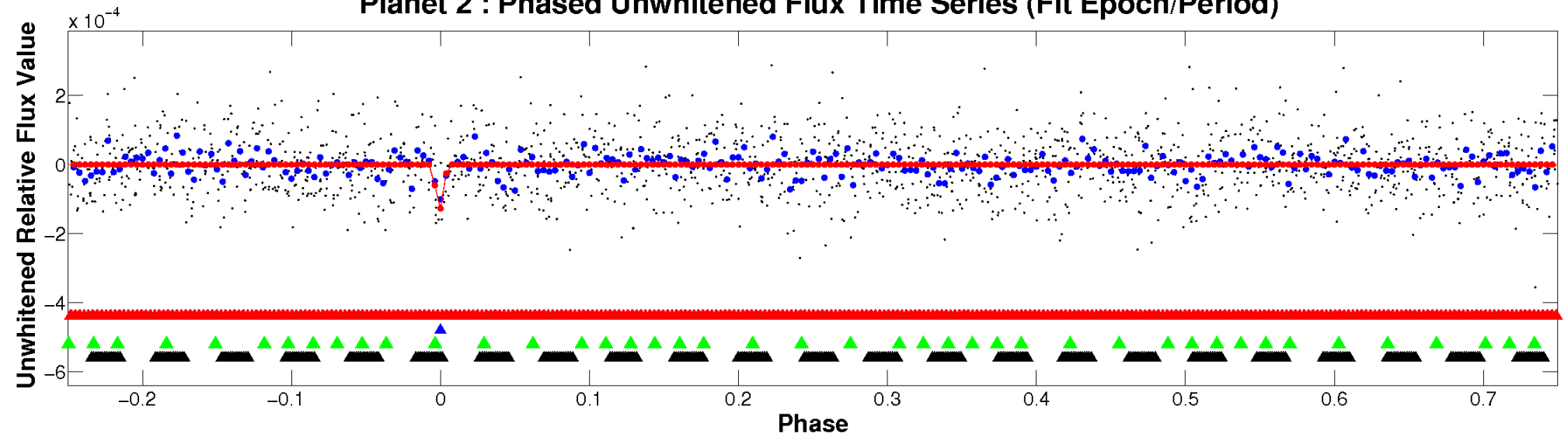


ALT Odd/Even

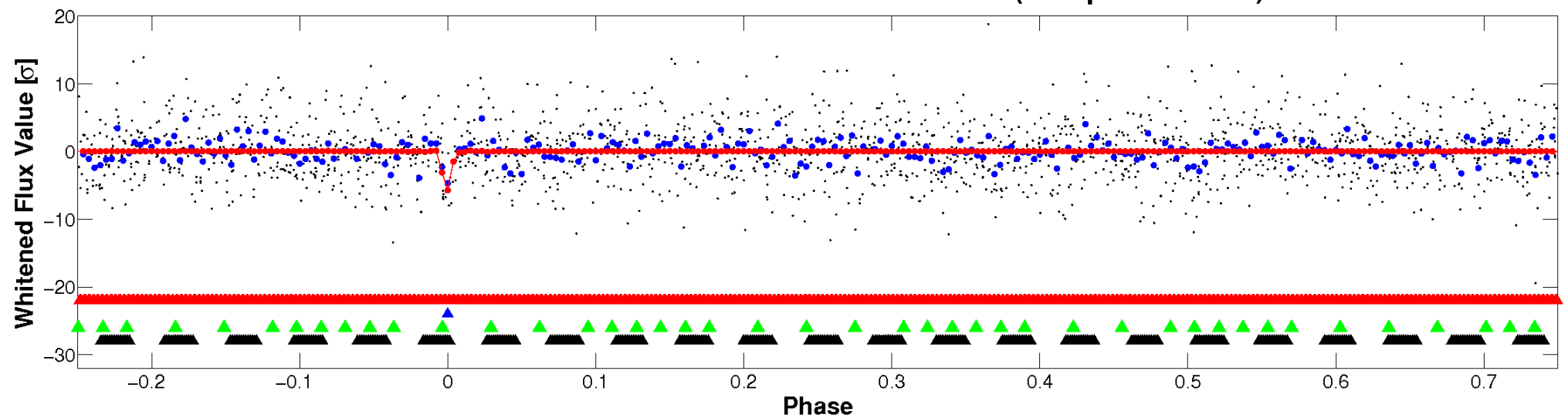
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

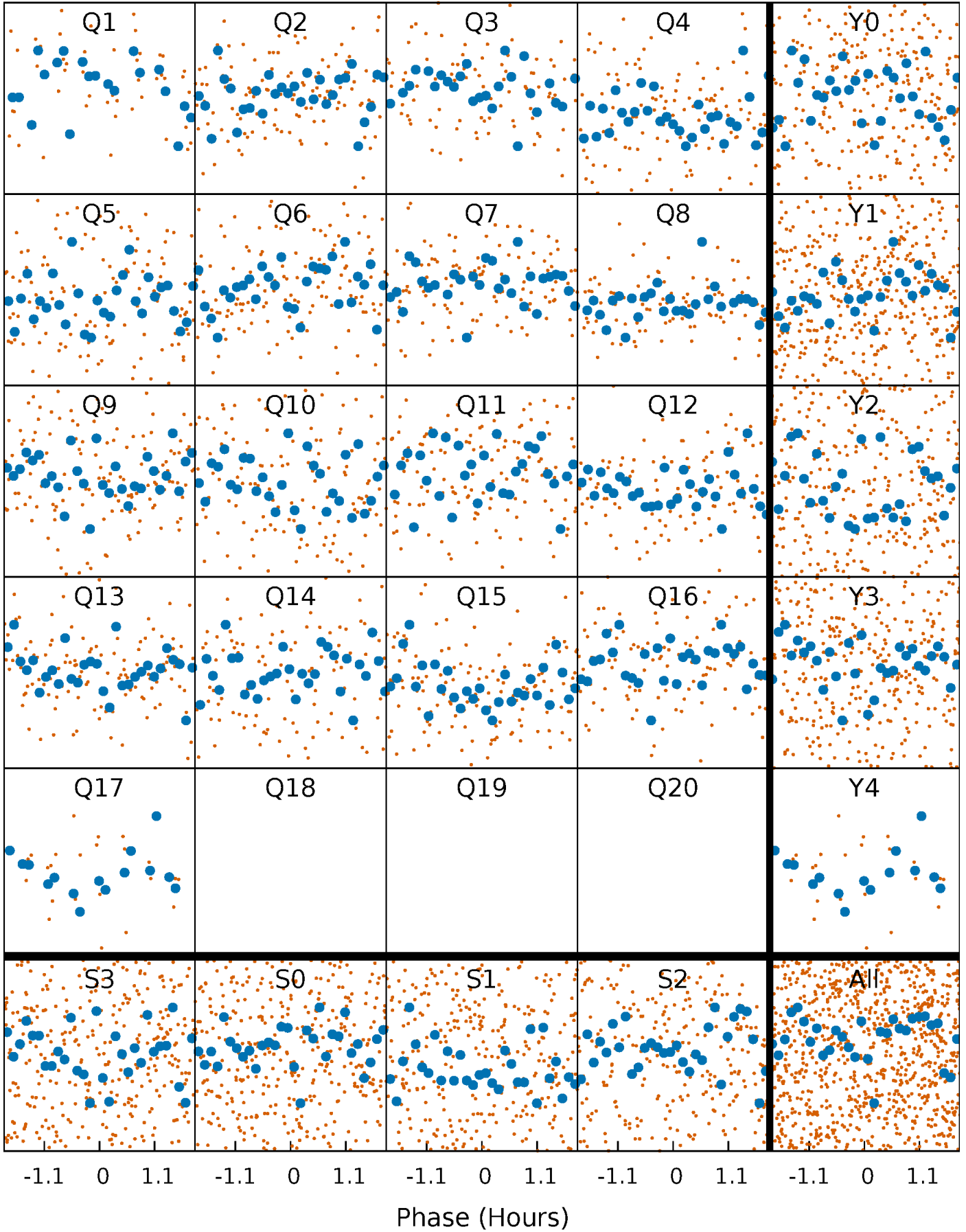


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



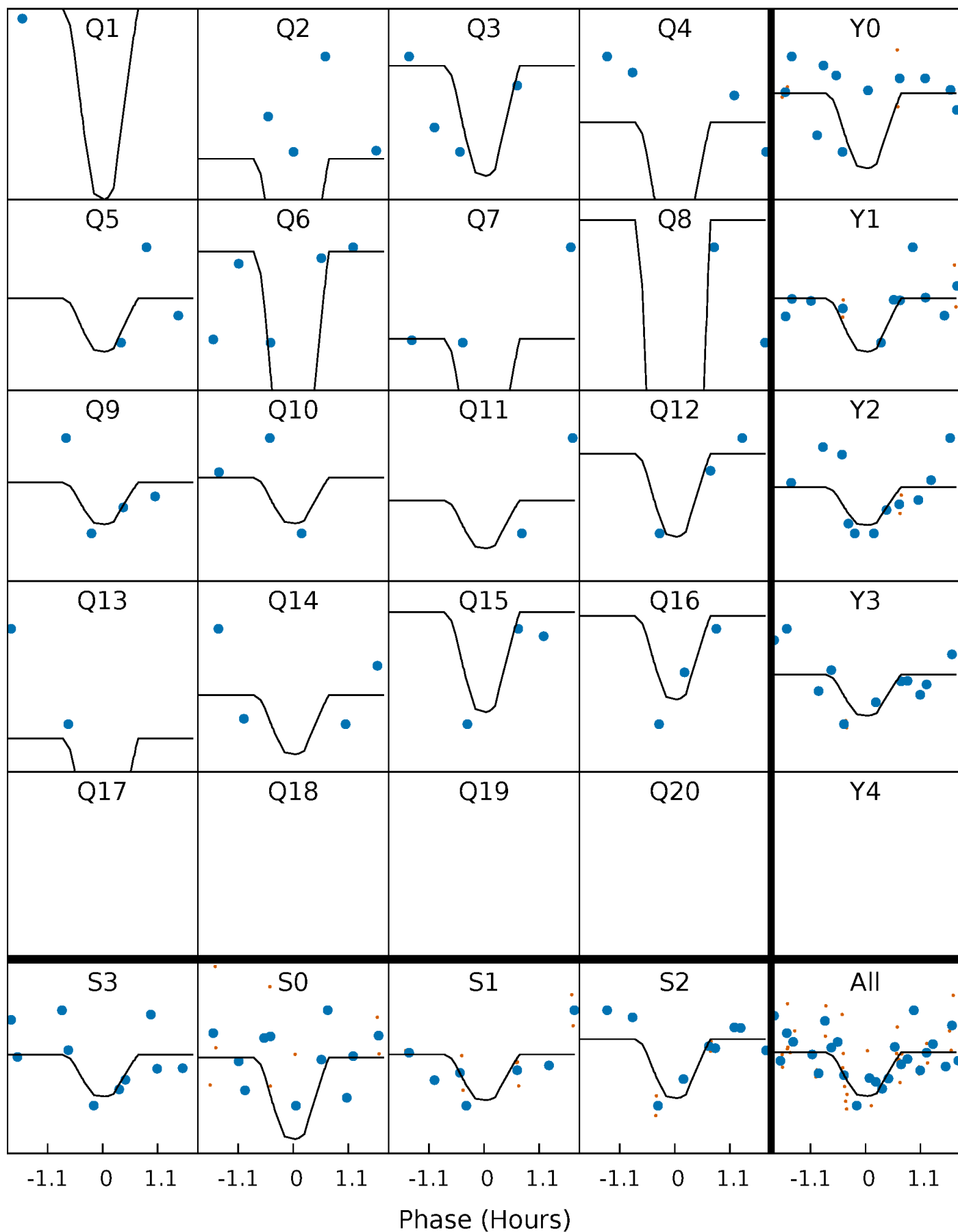
PDC Quarter-Phased Transit Curves

TCE 003222104-02 P= 5.311620 Days $T_0=132.016898$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003222104-02 P= 5.311620 Days $T_0=132.016898$ (BKJD)

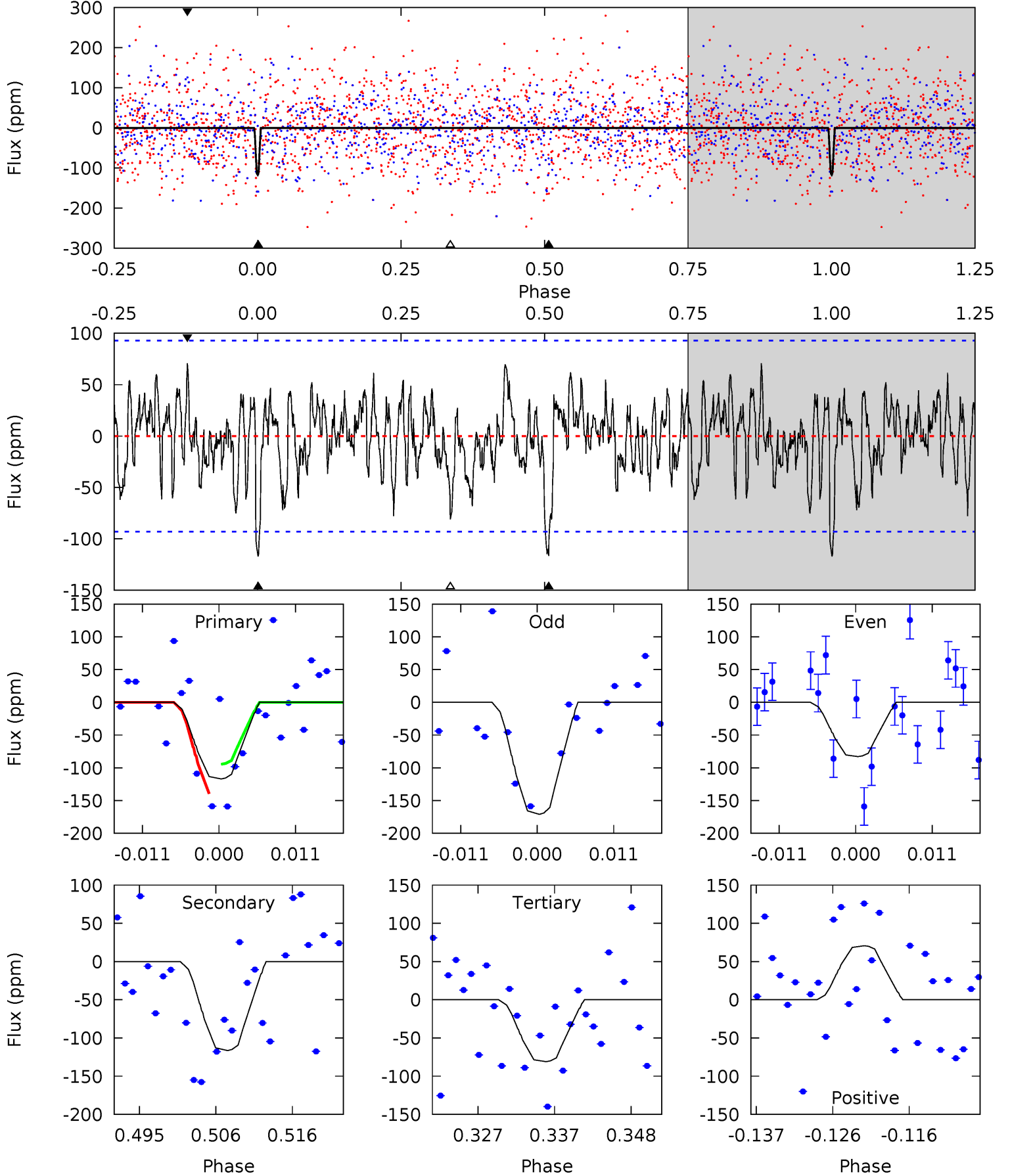


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

003222104-02, P = 5.311620 Days, E = 126.705278 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.32	6.28	4.37	3.82	5.02	2.56	1.53	1.95	2.50	1.91	2.47	2.38	0	0.38	1.22



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 003222104

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8554^{+234}_{-402}	$4.121^{+0.121}_{-0.162}$	$0.070^{+0.300}_{-0.500}$	$2.027^{+0.575}_{-0.383}$	$1.979^{+0.343}_{-0.419}$	$0.335^{+0.206}_{-0.147}$
	+3%/-5%	+3%/-4%	+429%/-714%	+28%/-19%	+17%/-21%	+61%/-44%
Source	KIC0	KIC0	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 003222104-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-116 ± 19	$2.64^{+2.10}_{-1.56}$	2738^{+183}_{-164}	7939^{+7448}_{-2099}	49^{+250}_{-33}
Alt.	N/A	N/A	N/A	N/A	N/A

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

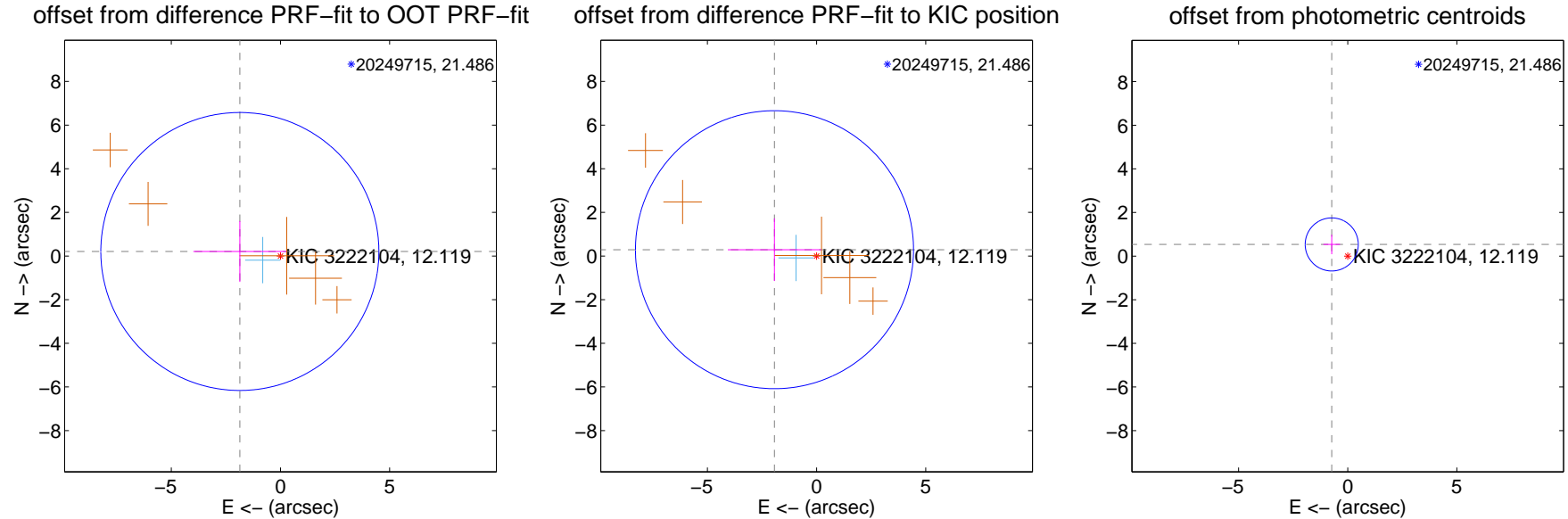
DV Centroid Data

Supplemental centroid analysis for 003222104-02. Kepler magnitude: 12.12. Transit SNR 15.62

There are 1 quarters with good PRF difference image offsets

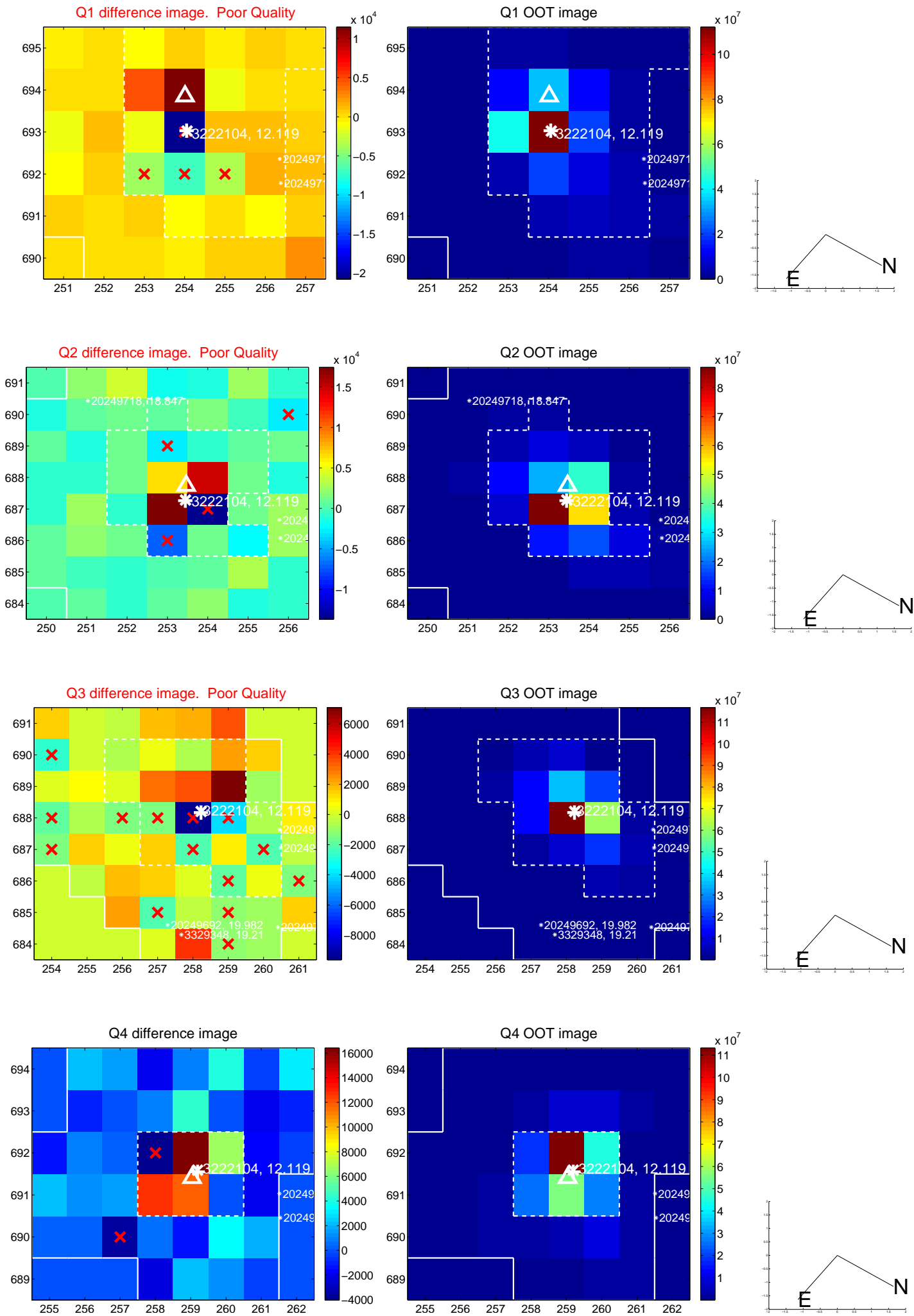
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.873 ± 2.123	0.88	1.861 ± 2.131	0.208 ± 1.393
PRF-fit source offset from KIC position	1.950 ± 2.123	0.92	1.929 ± 2.136	0.290 ± 1.433
photometric centroid source offset	0.91 ± 0.41	2.24	0.73 ± 0.38	0.53 ± 0.45

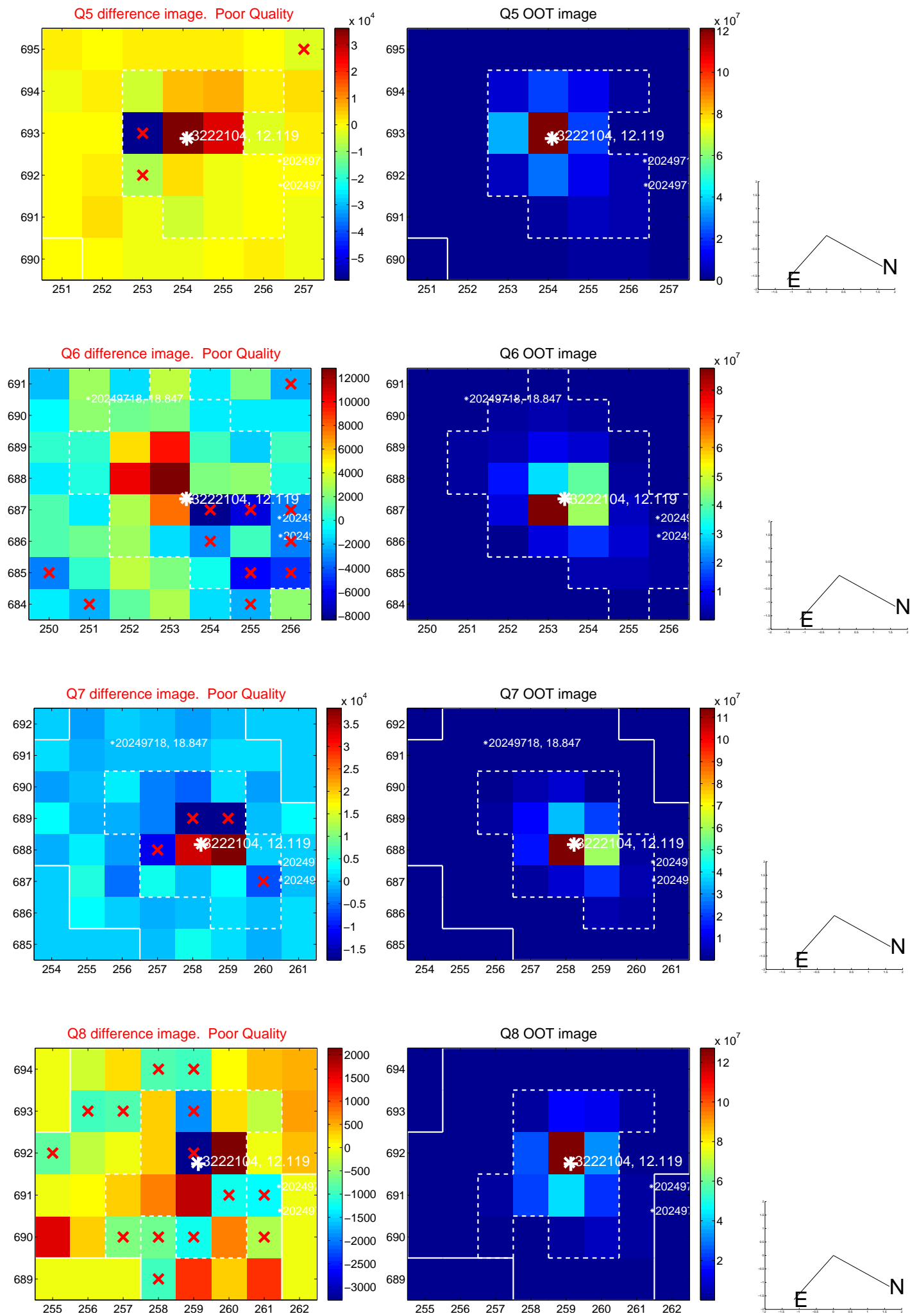


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

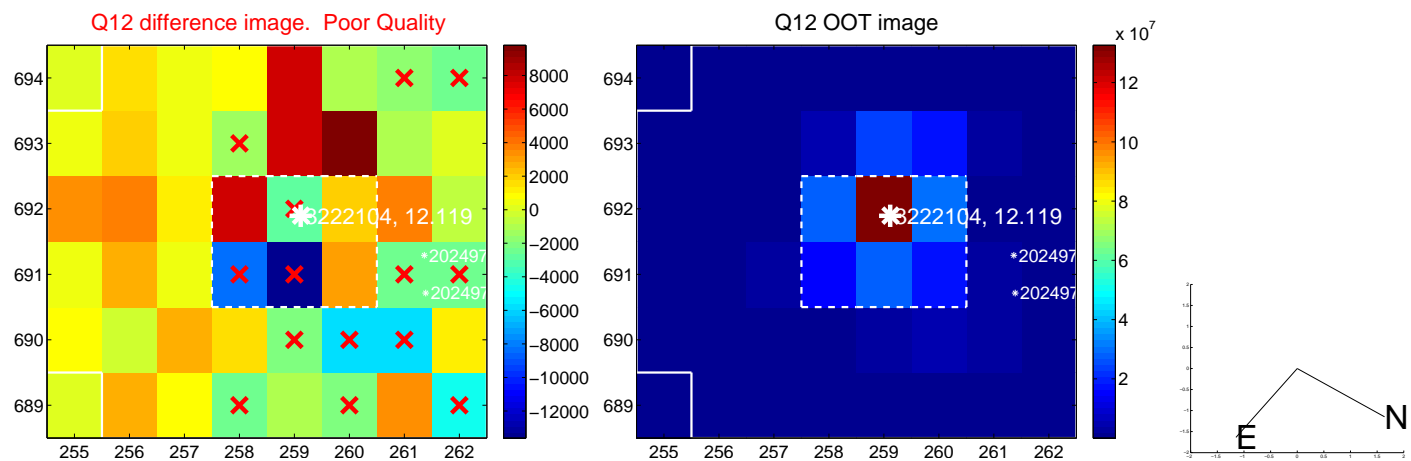
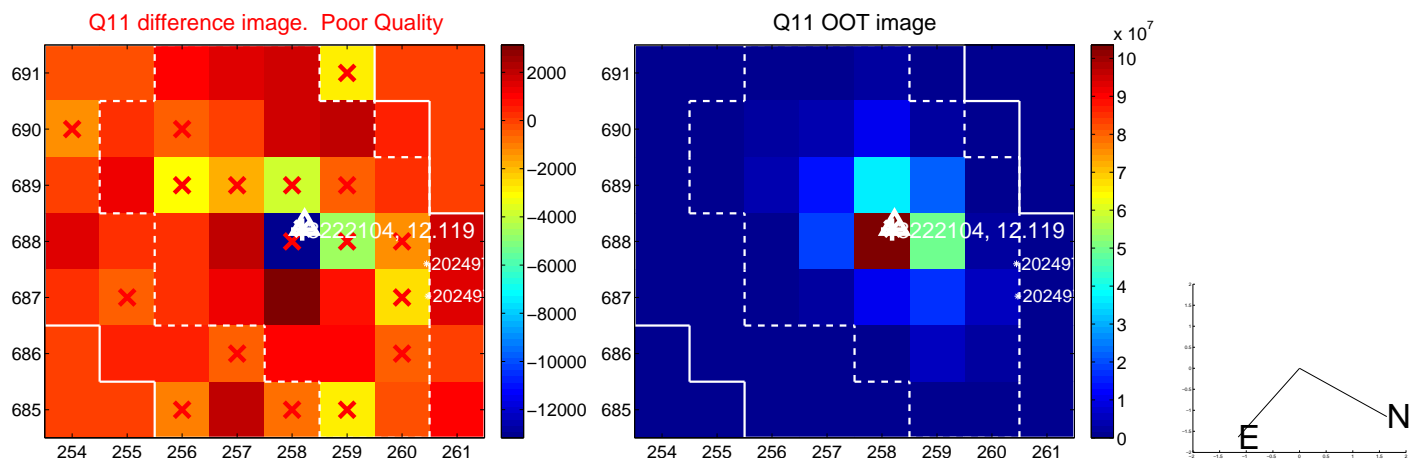
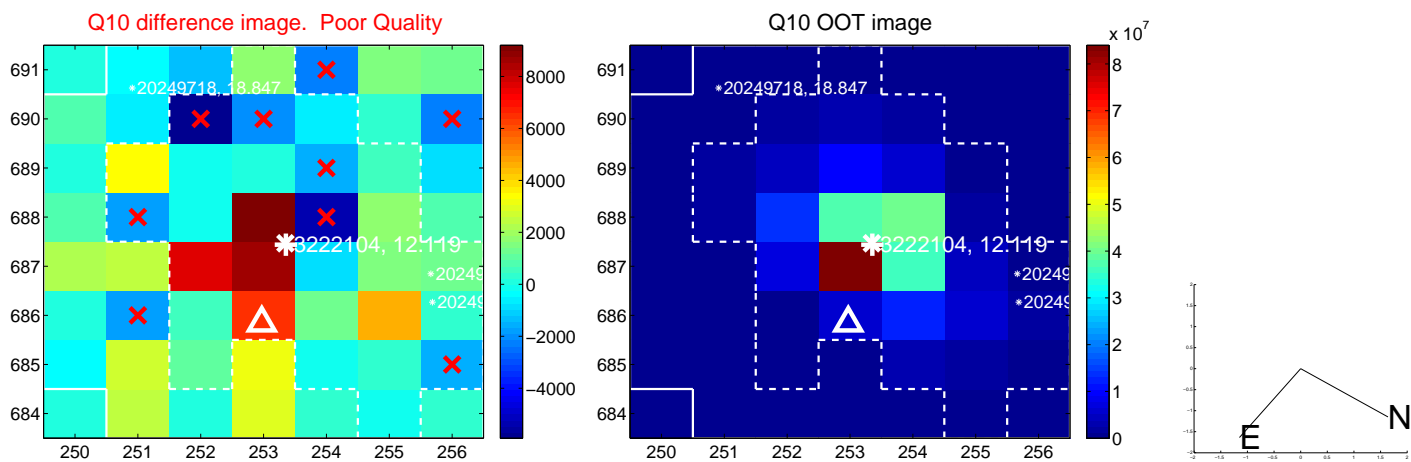
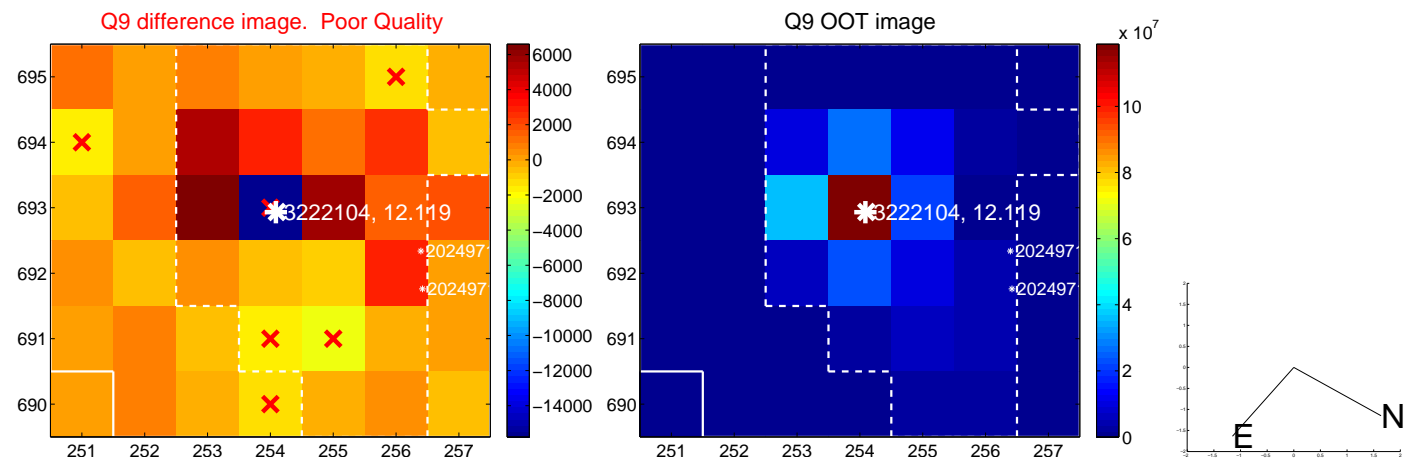
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



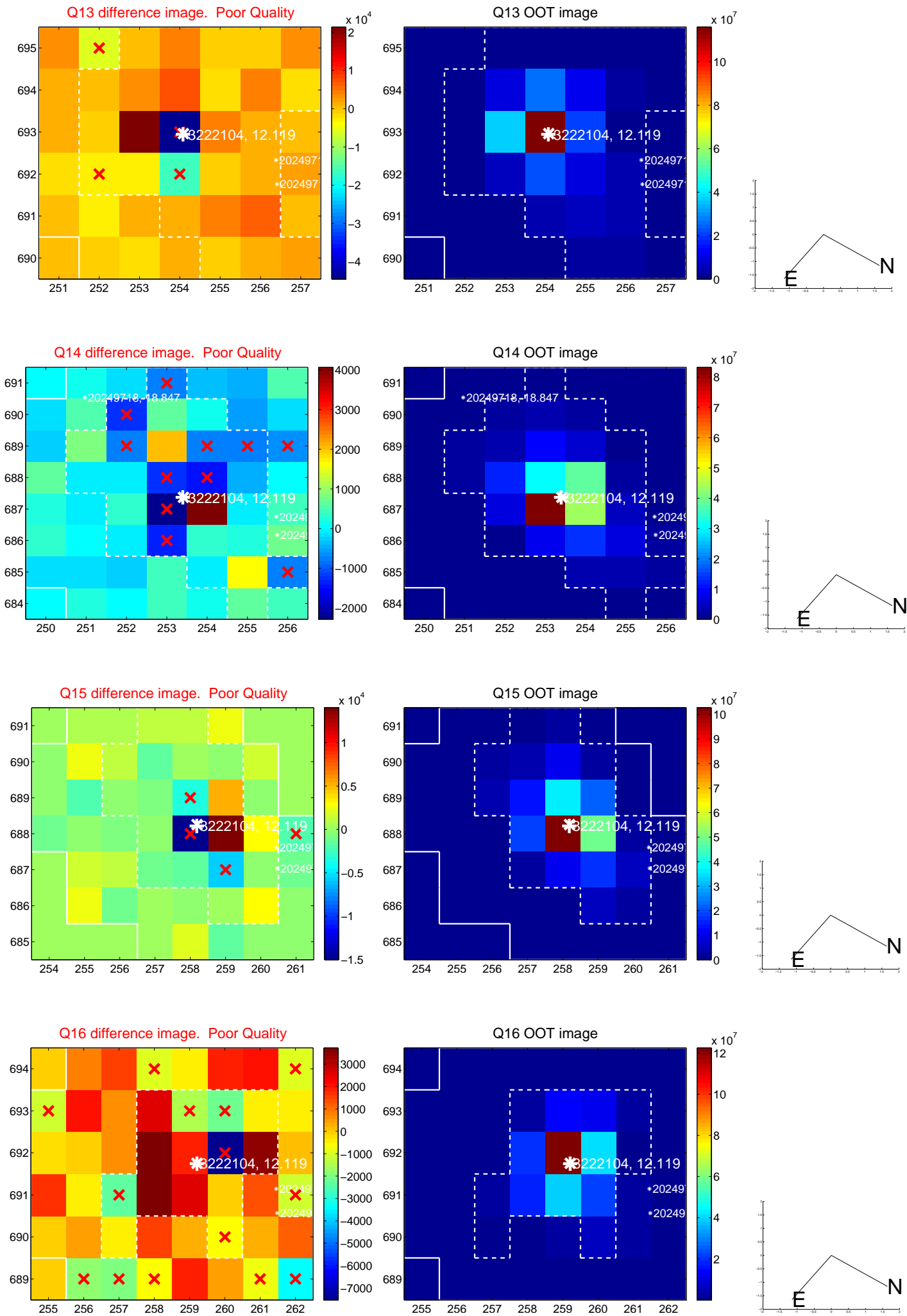
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



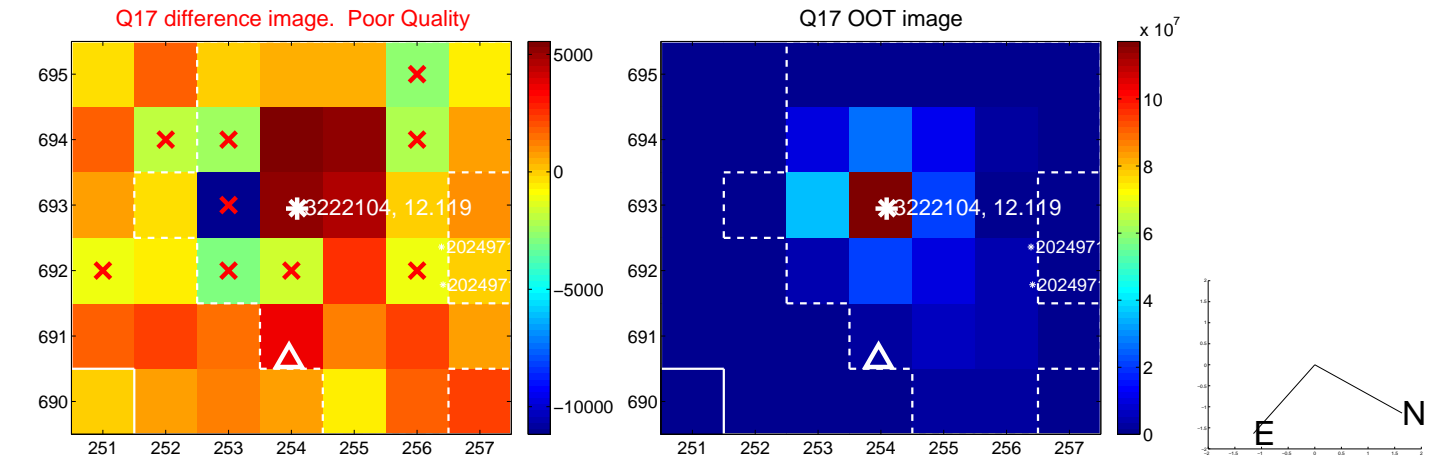
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



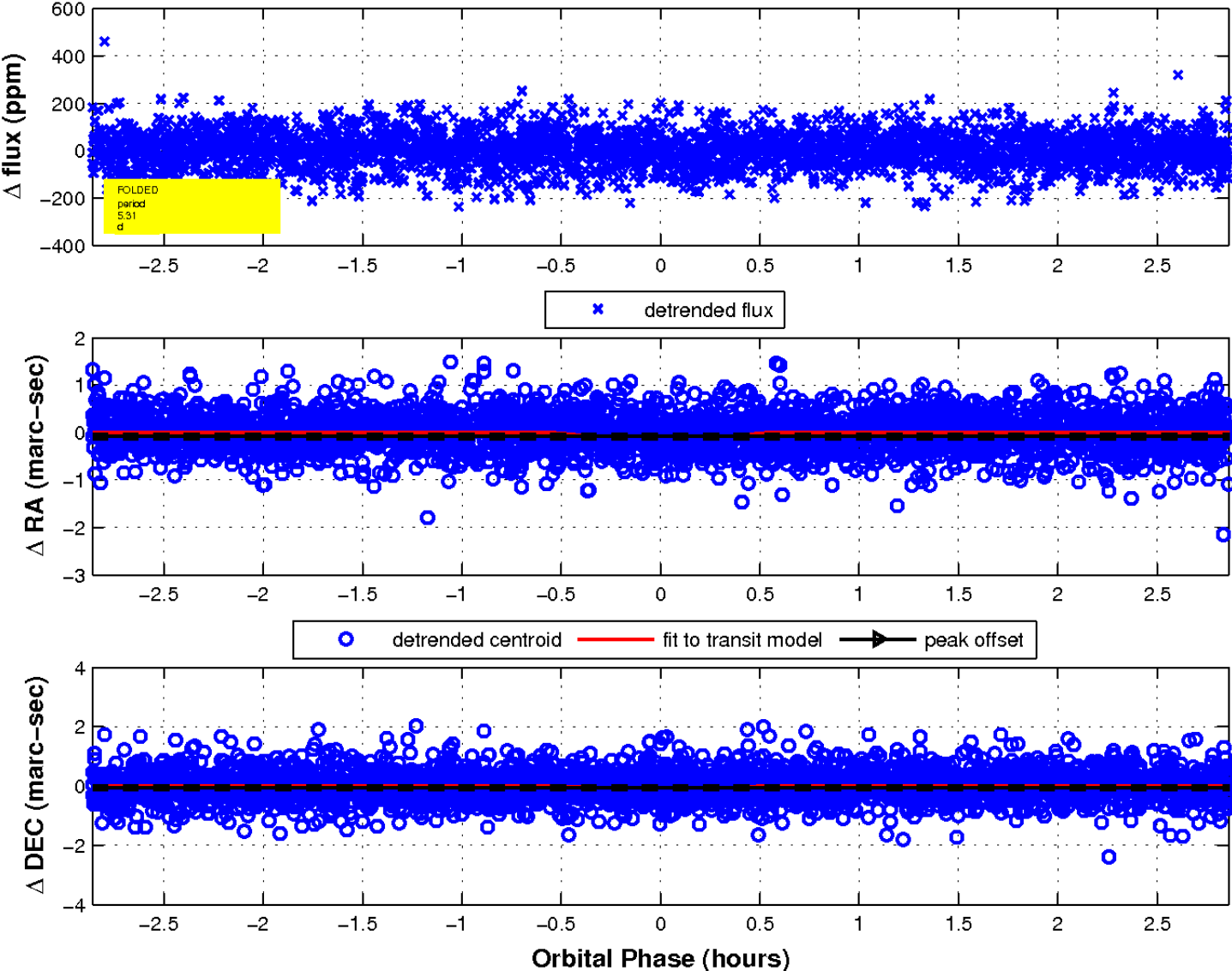
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

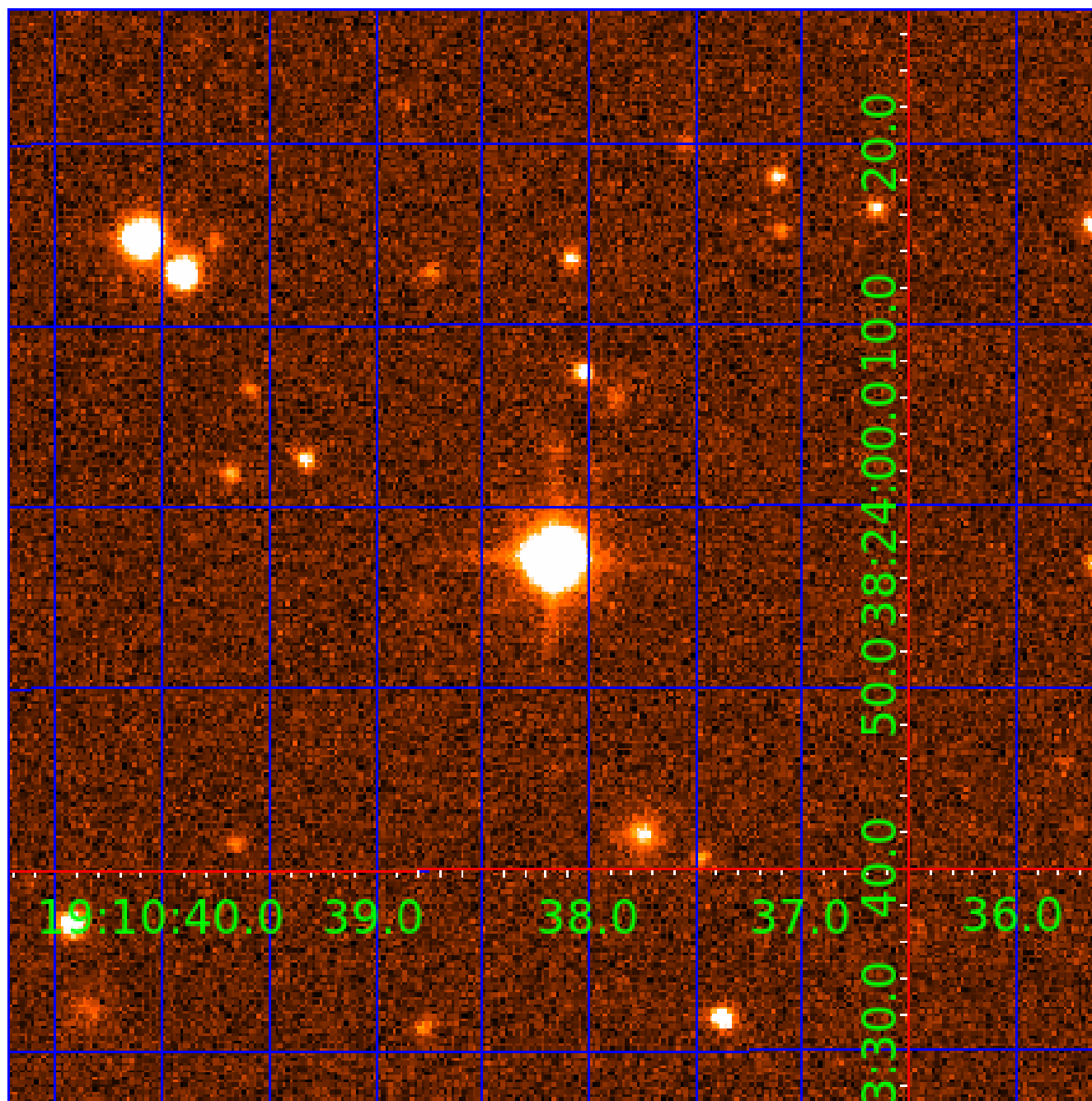


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 003222104

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})
003222104-01	OBS	No	0.788077	132.319195	0.0	5.966	8.6	0.0	2.03	8554	0.00	44810.72
003222104-02	OBS	No	5.311620	132.016898	130.5	0.954	13.7	15.6	2.03	8554	2.40	3519.69
003222104-03	OBS	No	33.959478	134.001969	202.0	0.839	13.0	15.7	2.03	8554	3.10	296.62
003222104-04	OBS	No	4.619142	133.770648	84.4	0.701	13.3	8.7	2.03	8554	1.96	4240.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003222104-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
003222104-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
003222104-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
003222104-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

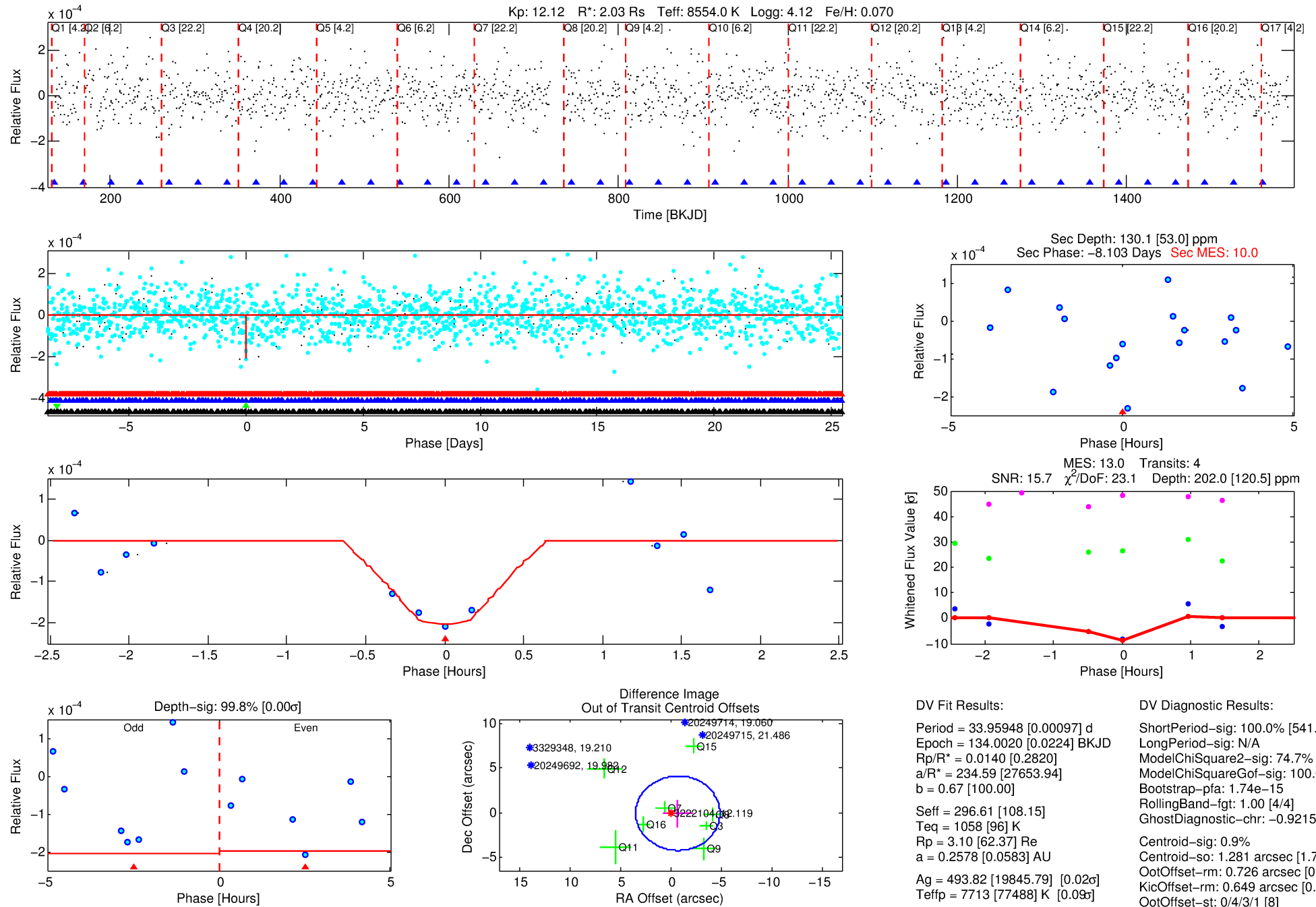
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003222104-03

No Significant Match Found

DV One-Page Summary

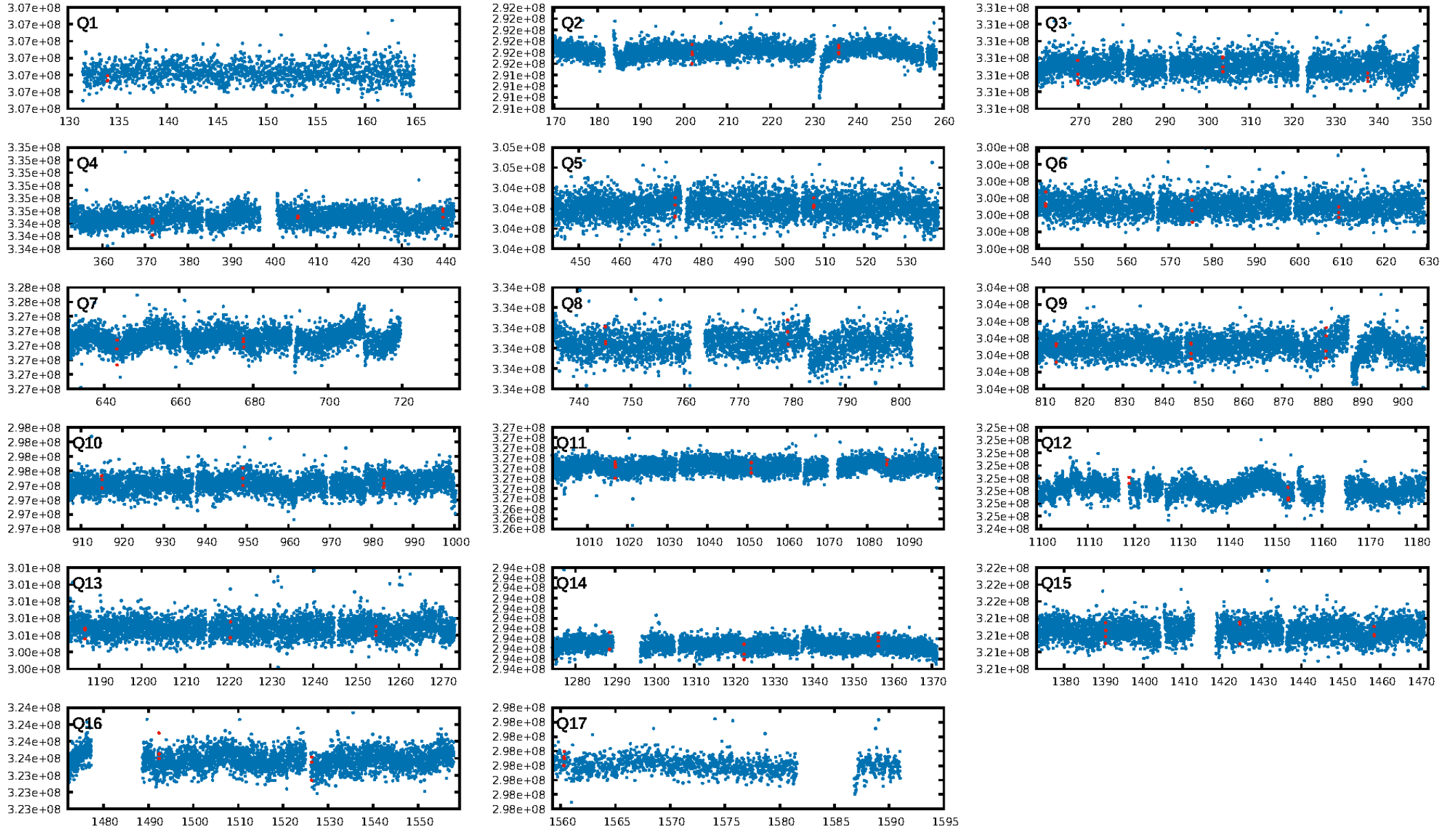
KIC: 3222104 Candidate: 3 of 4 Period: 33.959 d



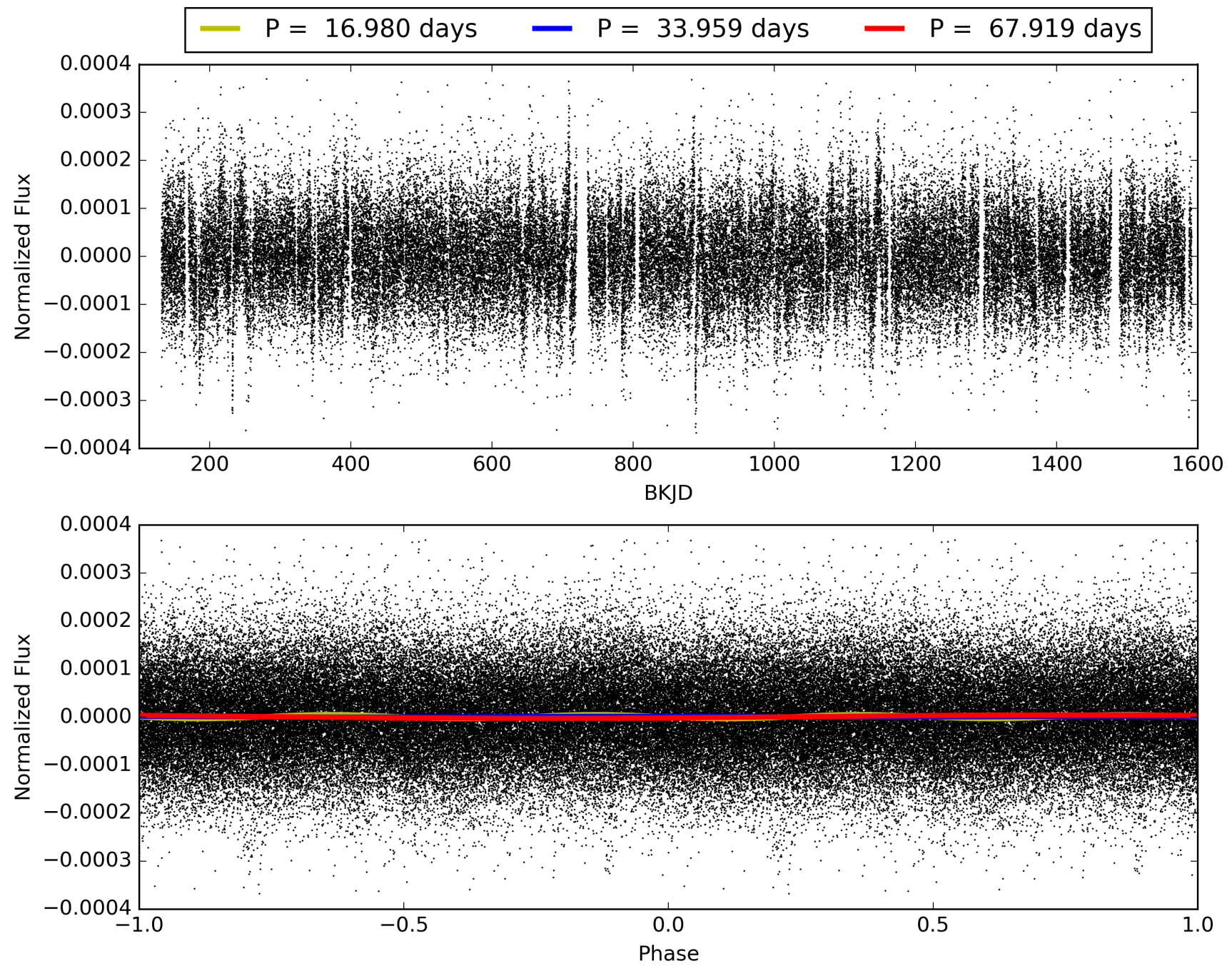
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:15:21 Z

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

TCE 003222104-03, PDC Light Curves

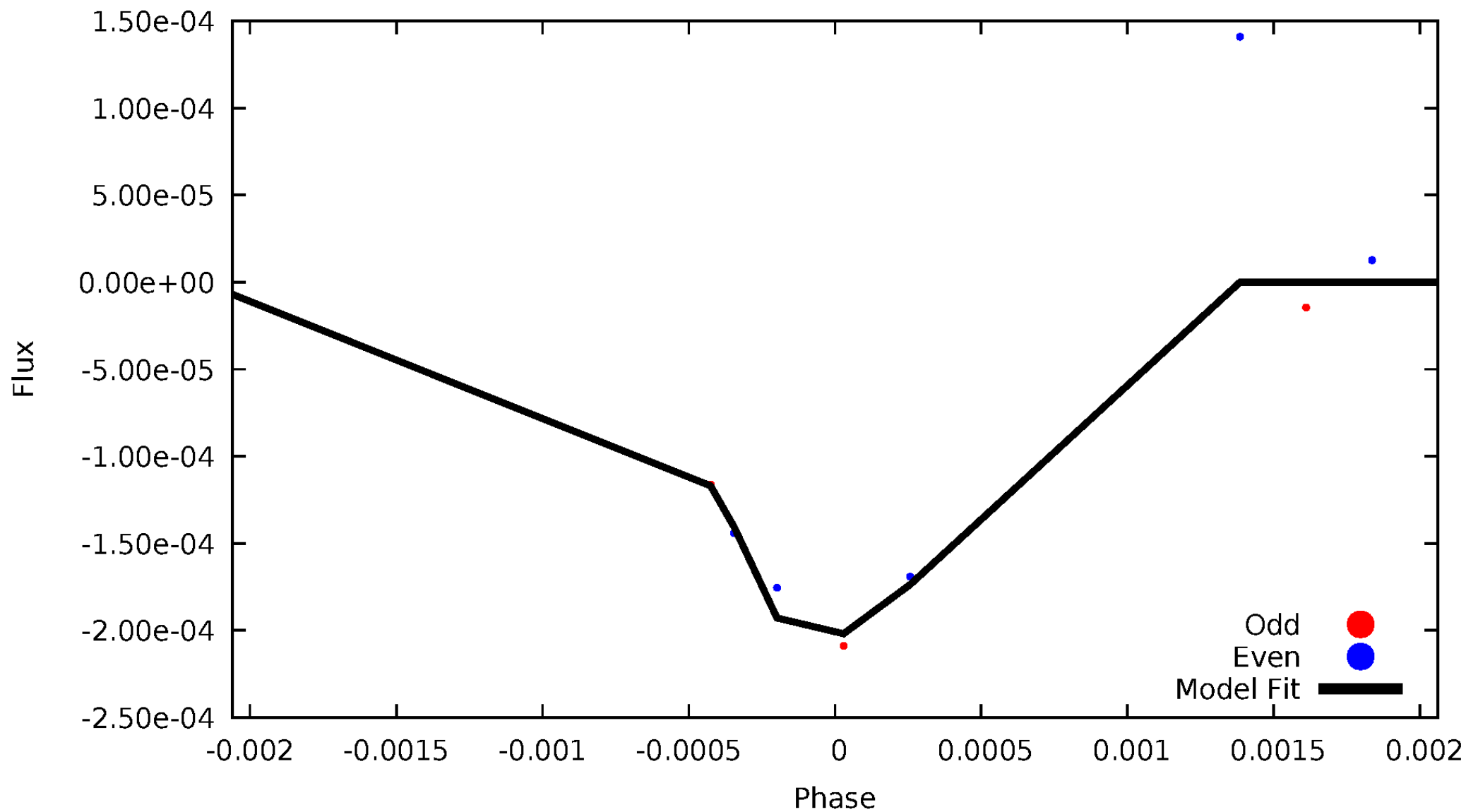


TCE 003222104-03



DV Odd/Even

TCE 003222104-03

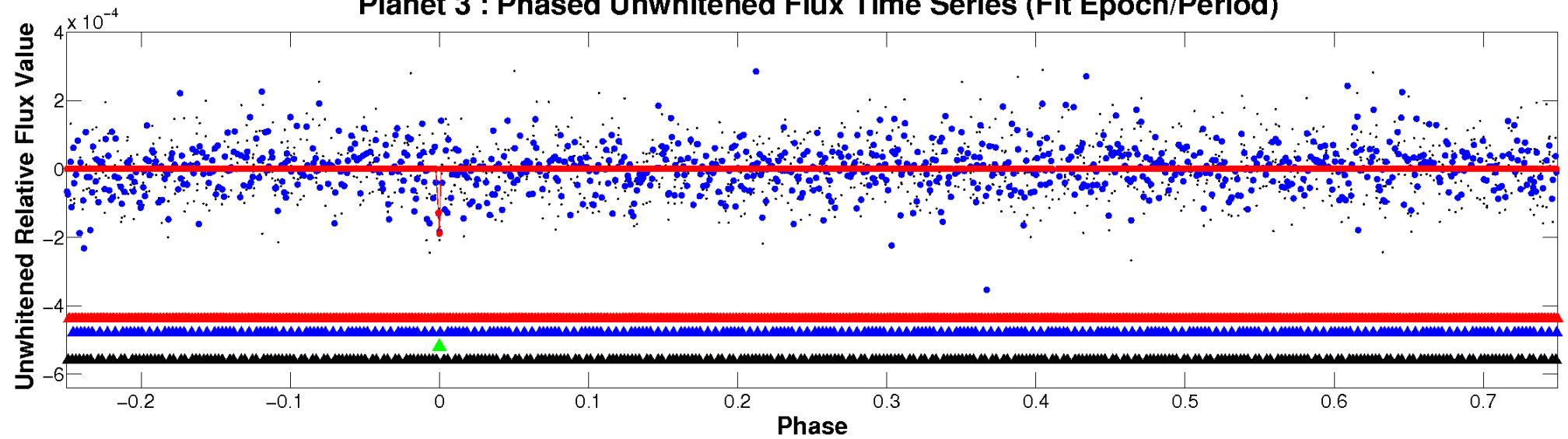


ALT Odd/Even

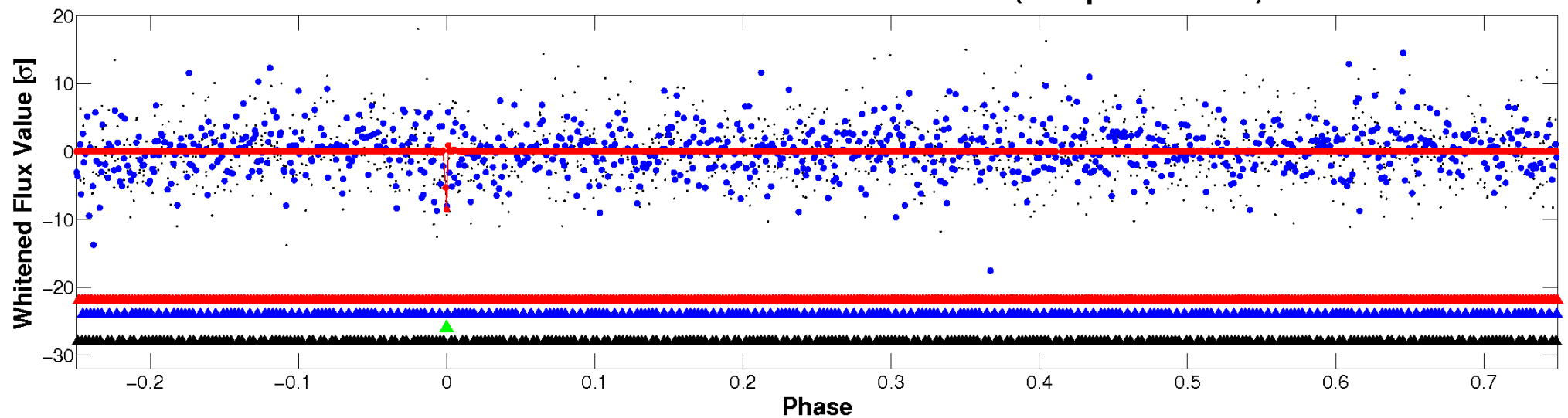
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

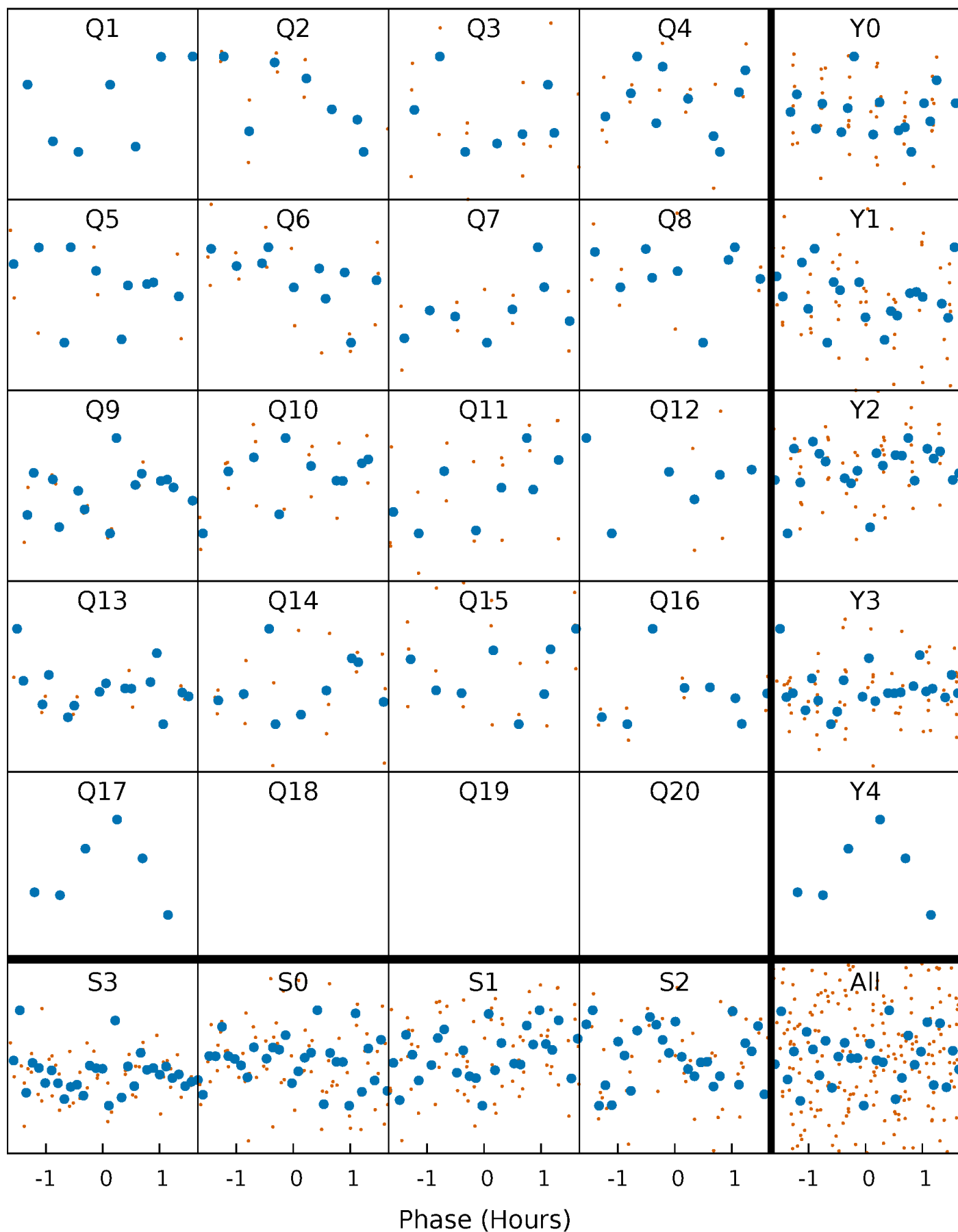


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



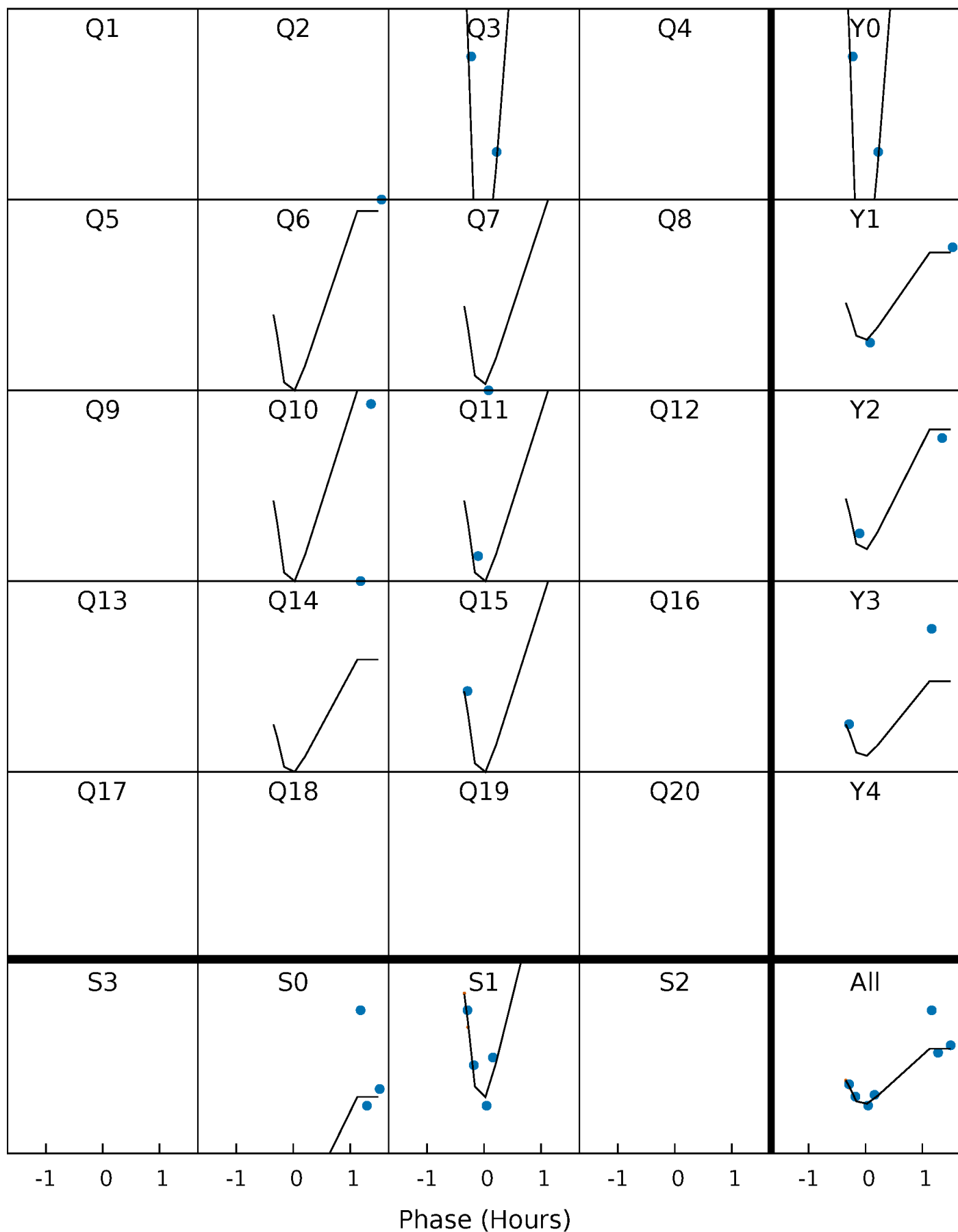
PDC Quarter-Phased Transit Curves

TCE 003222104-03 P= 33.959478 Days $T_0=134.001969$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003222104-03 P= 33.959478 Days $T_0=134.001969$ (BKJD)

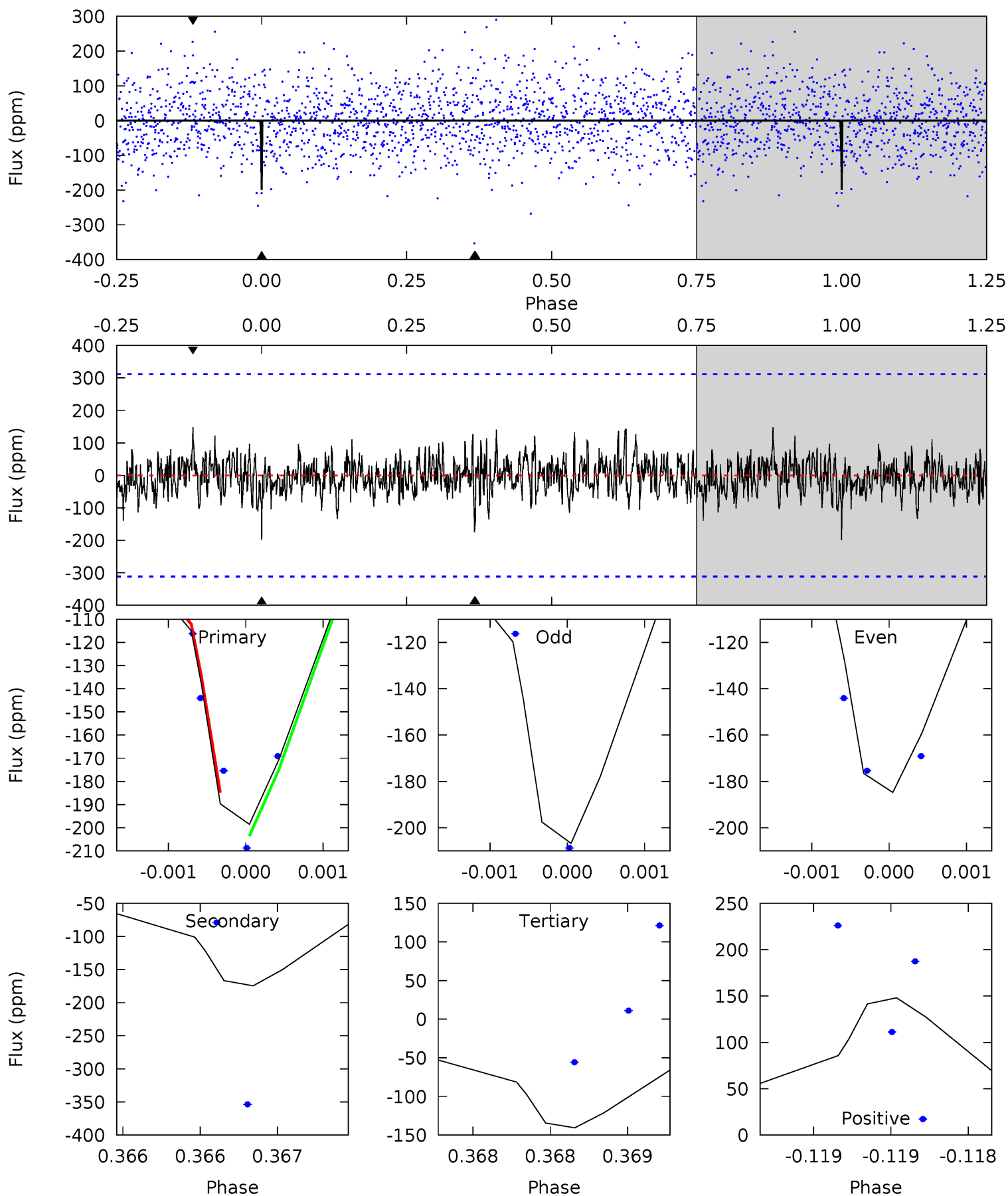


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

003222104-03, P = 33.959478 Days, E = 100.042491 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.53	3.11	2.50	2.63	5.54	3.43	0.80	1.03	0.90	0.60	0.47	0.22	1.00	0.43	0.17



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 003222104

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8554^{+234}_{-402}	$4.121^{+0.121}_{-0.162}$	$0.070^{+0.300}_{-0.500}$	$2.027^{+0.575}_{-0.383}$	$1.979^{+0.343}_{-0.419}$	$0.335^{+0.206}_{-0.147}$
	+3%/-5%	+3%/-4%	+429%/-714%	+28%/-19%	+17%/-21%	+61%/-44%
Source	KIC0	KIC0	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 003222104-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-175 ± 56	$43.78^{+49.01}_{-30.39}$	1476^{+105}_{-94}	2782^{+1281}_{-601}	$3.179^{+27.214}_{-2.520}$
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

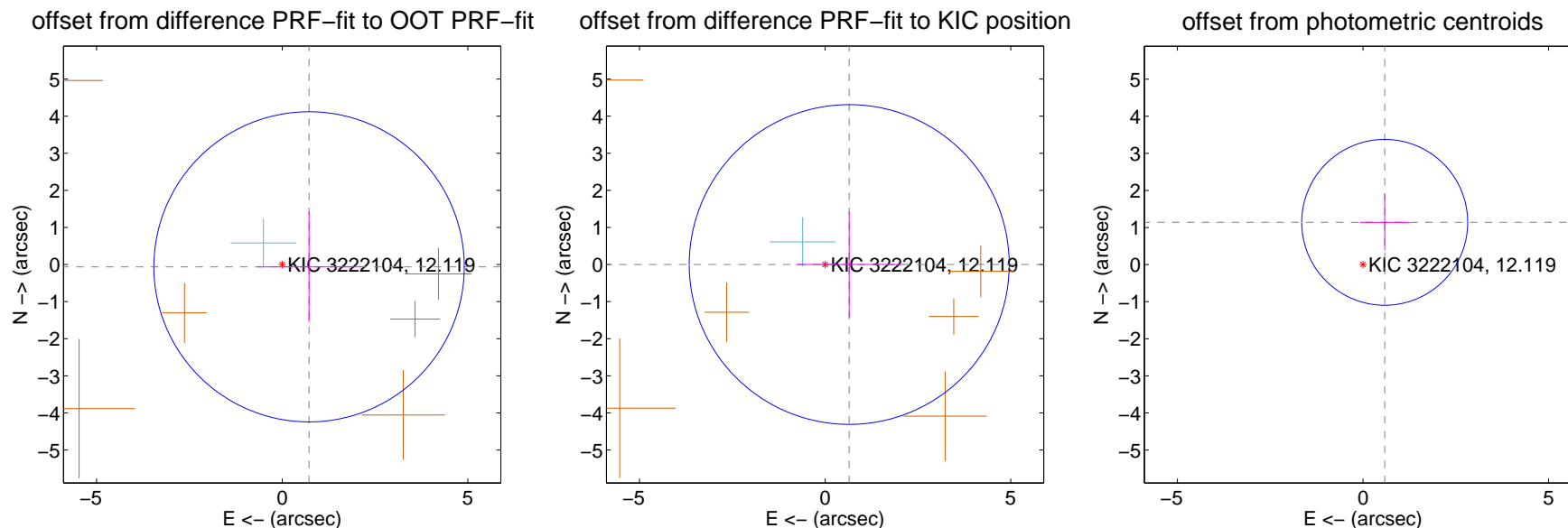
DV Centroid Data

Supplemental centroid analysis for 003222104-03. Kepler magnitude: 12.12. Transit SNR 15.70

There are 1 quarters with good PRF difference image offsets

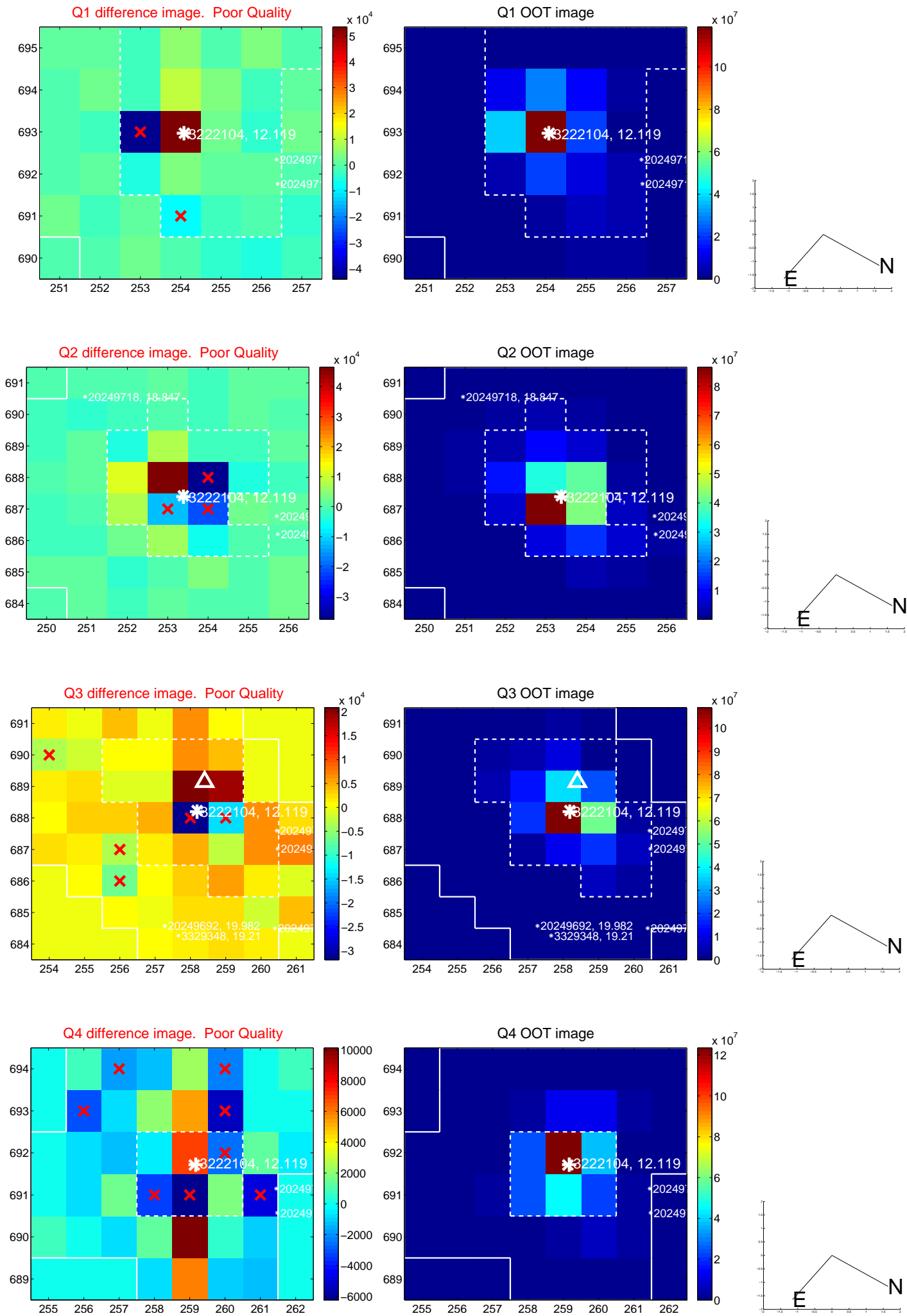
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.726 ± 1.393	0.52	-0.724 ± 1.409	-0.061 ± 1.485
PRF-fit source offset from KIC position	0.649 ± 1.436	0.45	-0.649 ± 1.436	0.001 ± 1.423
photometric centroid source offset	1.28 ± 0.75	1.72	-0.59 ± 0.67	1.14 ± 0.76

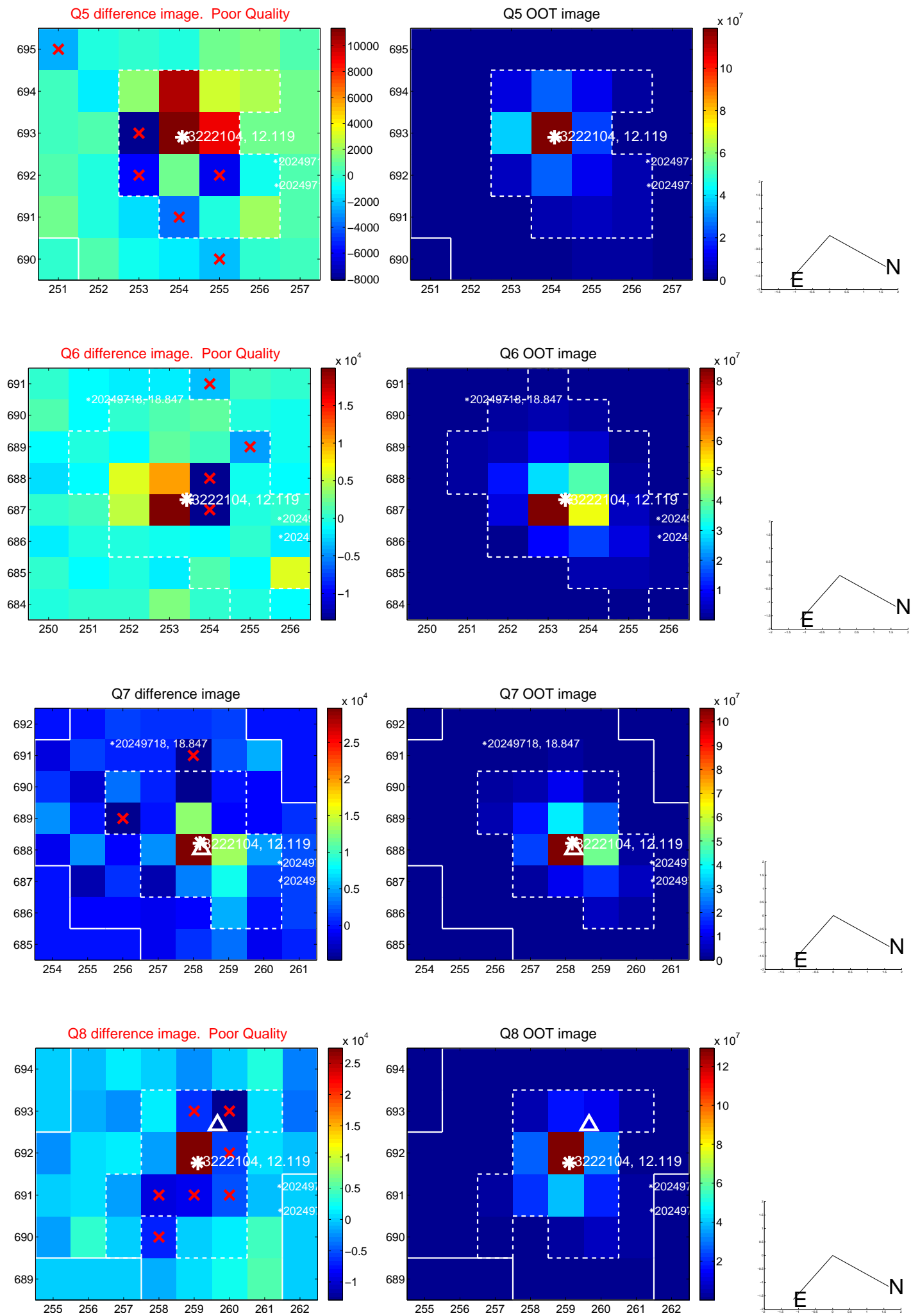


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

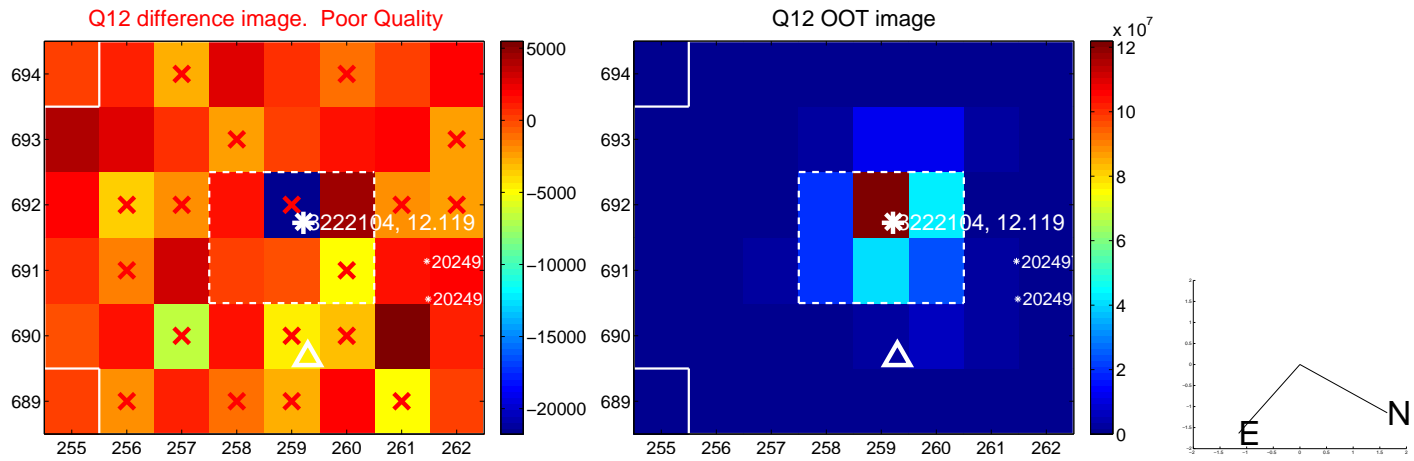
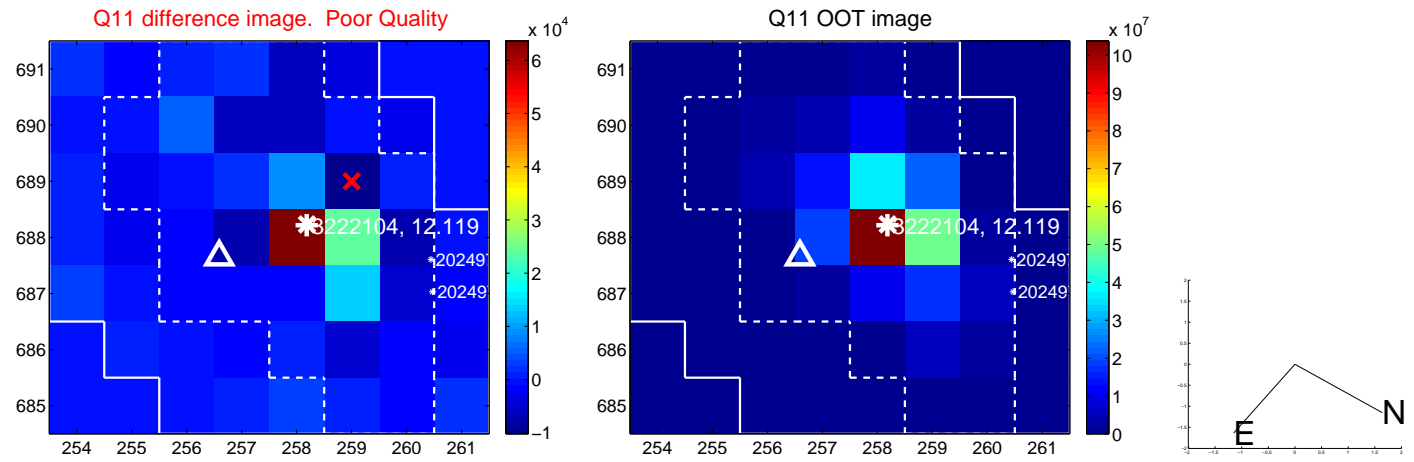
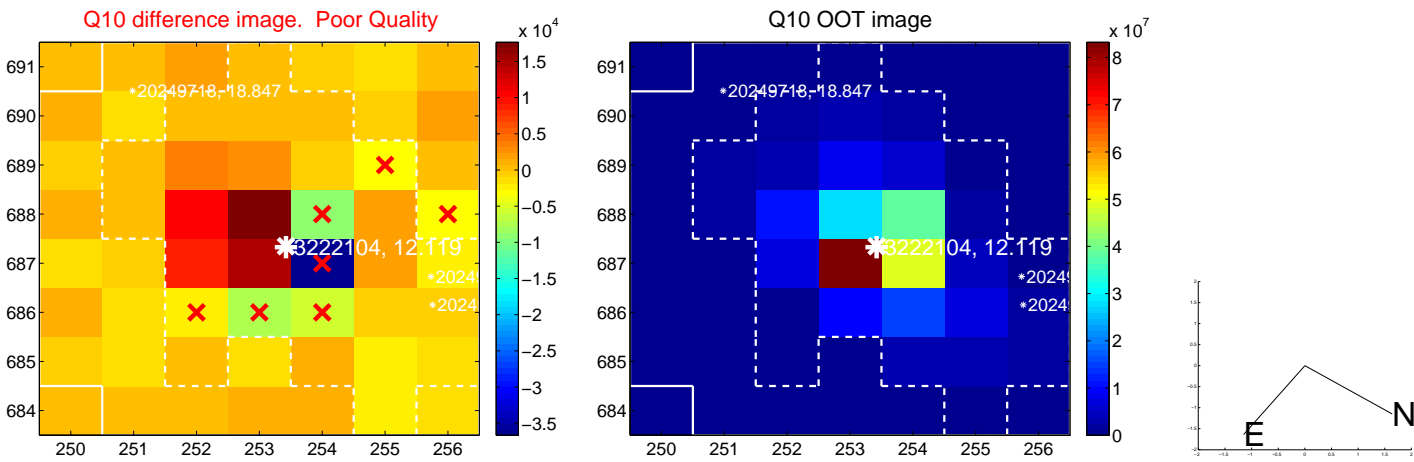
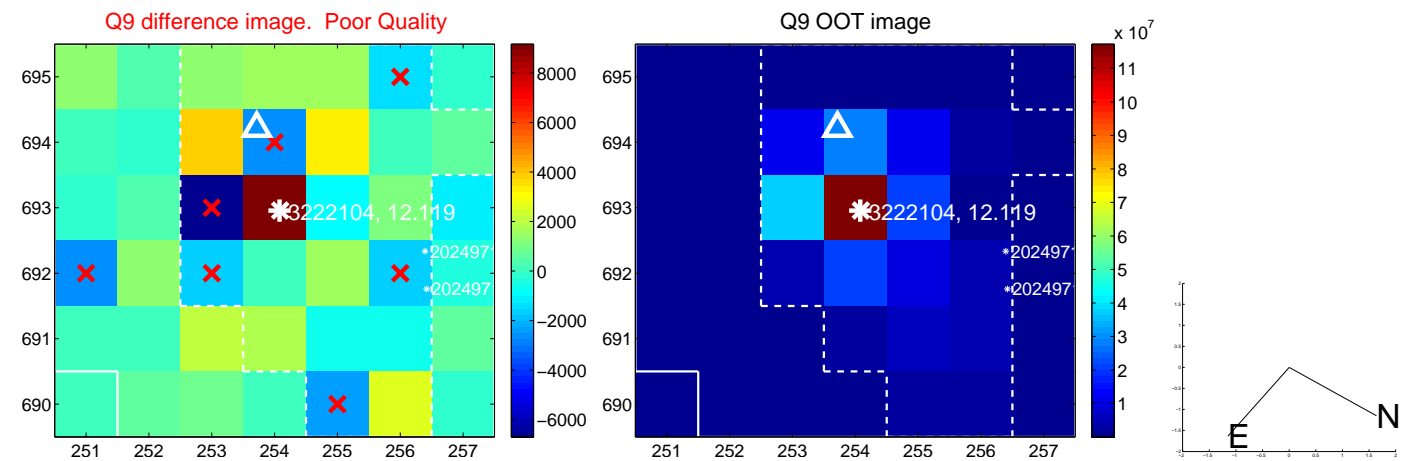
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



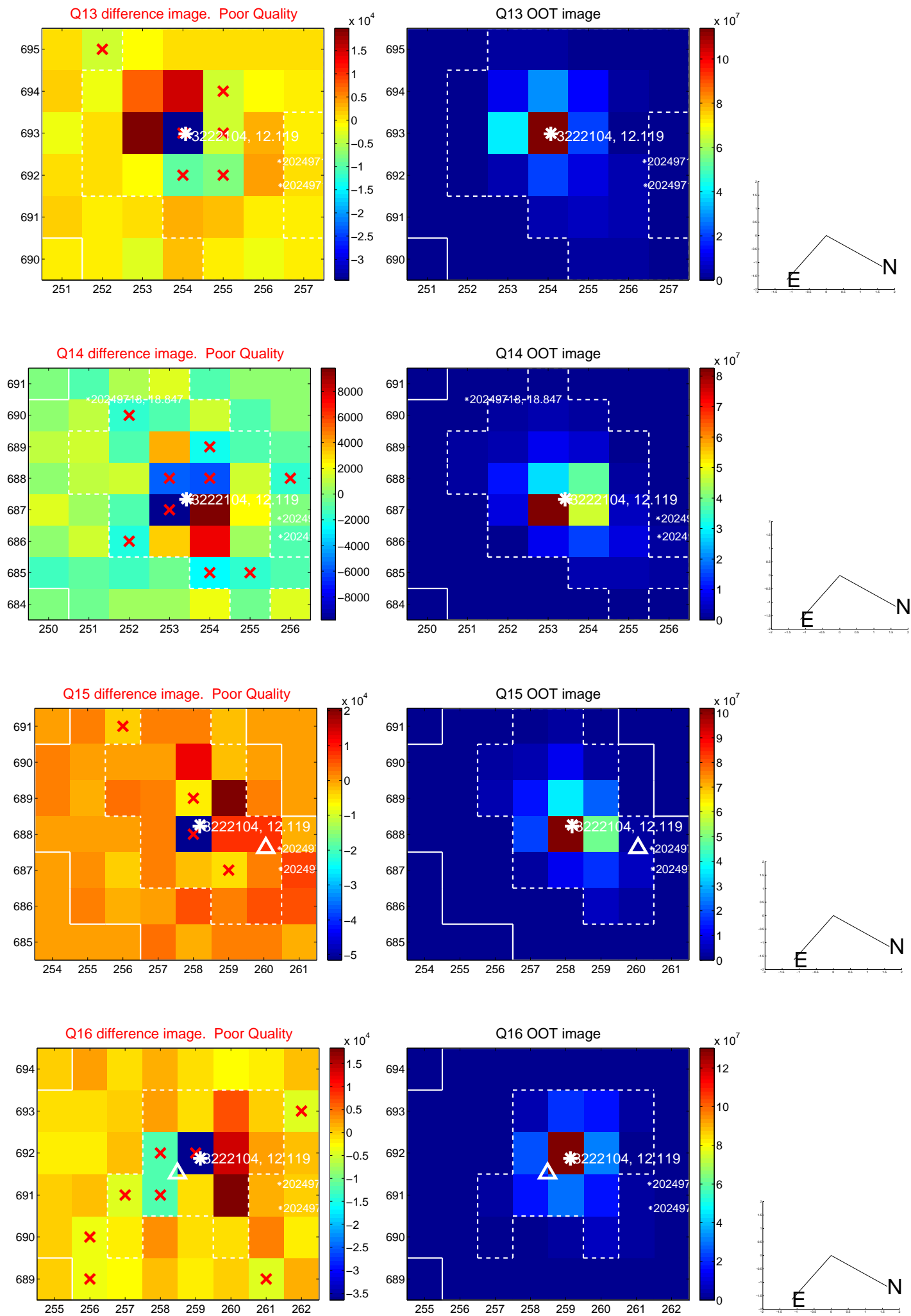
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



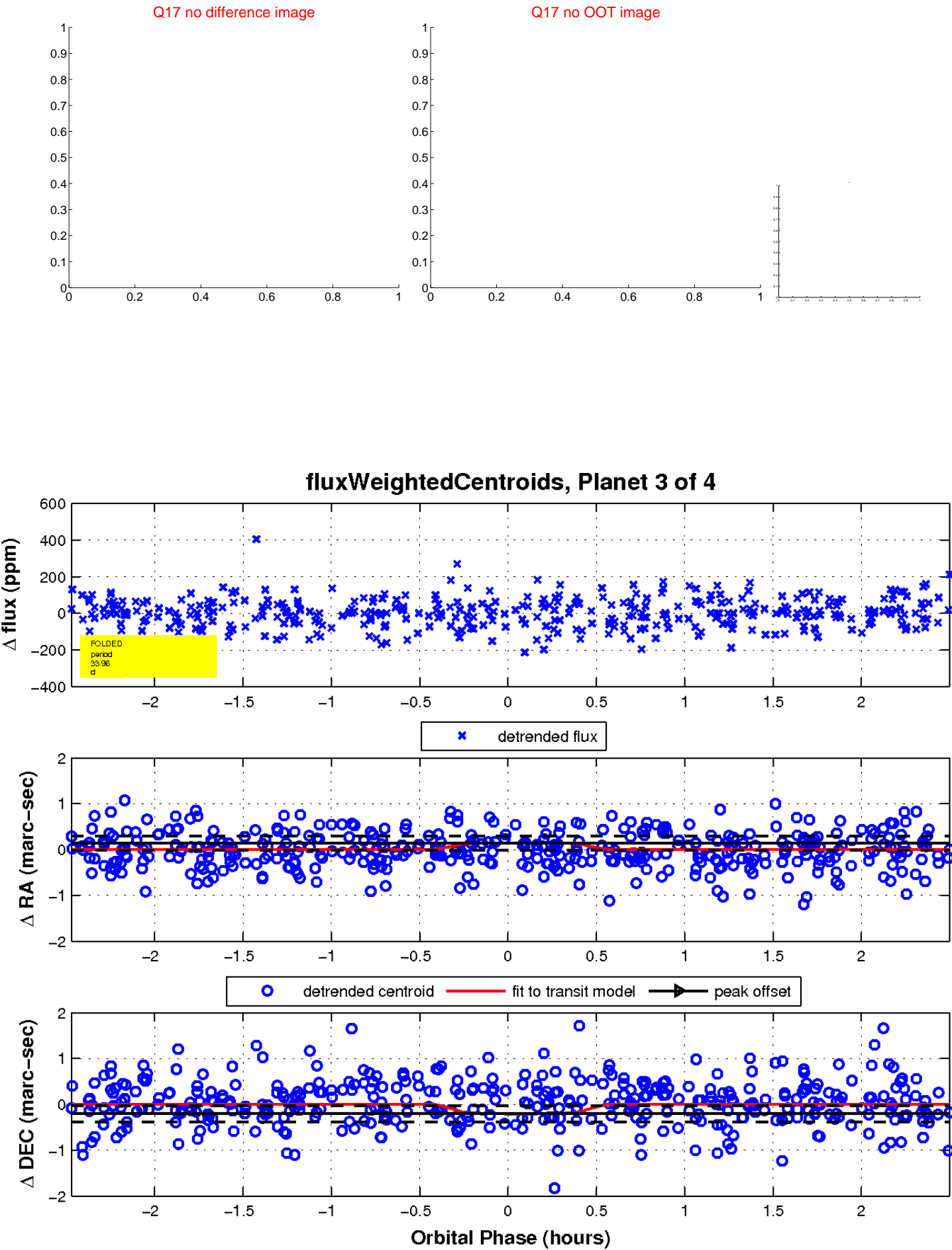
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

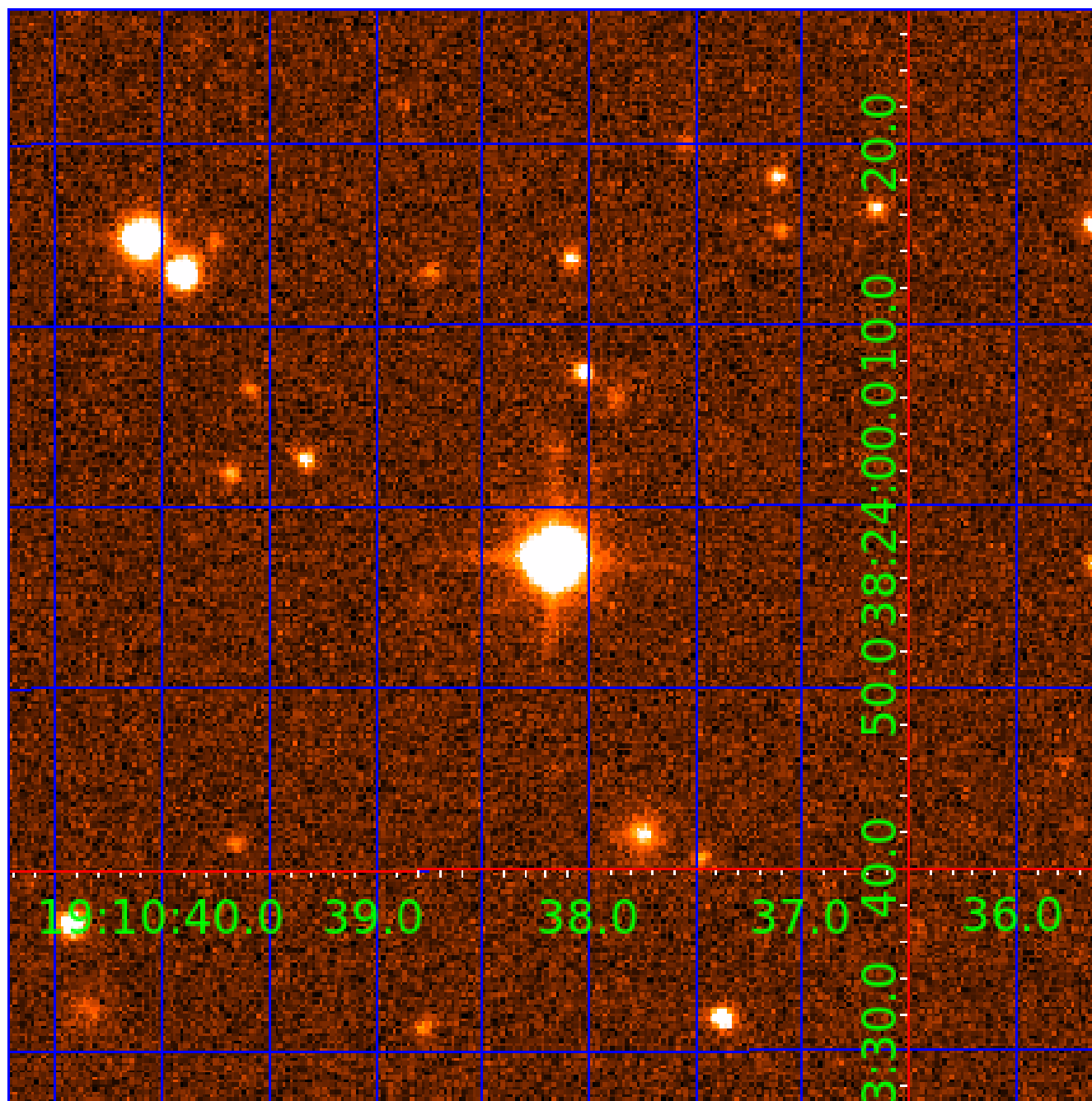


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003222104

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})
003222104-01	OBS	No	0.788077	132.319195	0.0	5.966	8.6	0.0	2.03	8554	0.00	44810.72
003222104-02	OBS	No	5.311620	132.016898	130.5	0.954	13.7	15.6	2.03	8554	2.40	3519.69
003222104-03	OBS	No	33.959478	134.001969	202.0	0.839	13.0	15.7	2.03	8554	3.10	296.62
003222104-04	OBS	No	4.619142	133.770648	84.4	0.701	13.3	8.7	2.03	8554	1.96	4240.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003222104-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
003222104-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
003222104-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
003222104-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

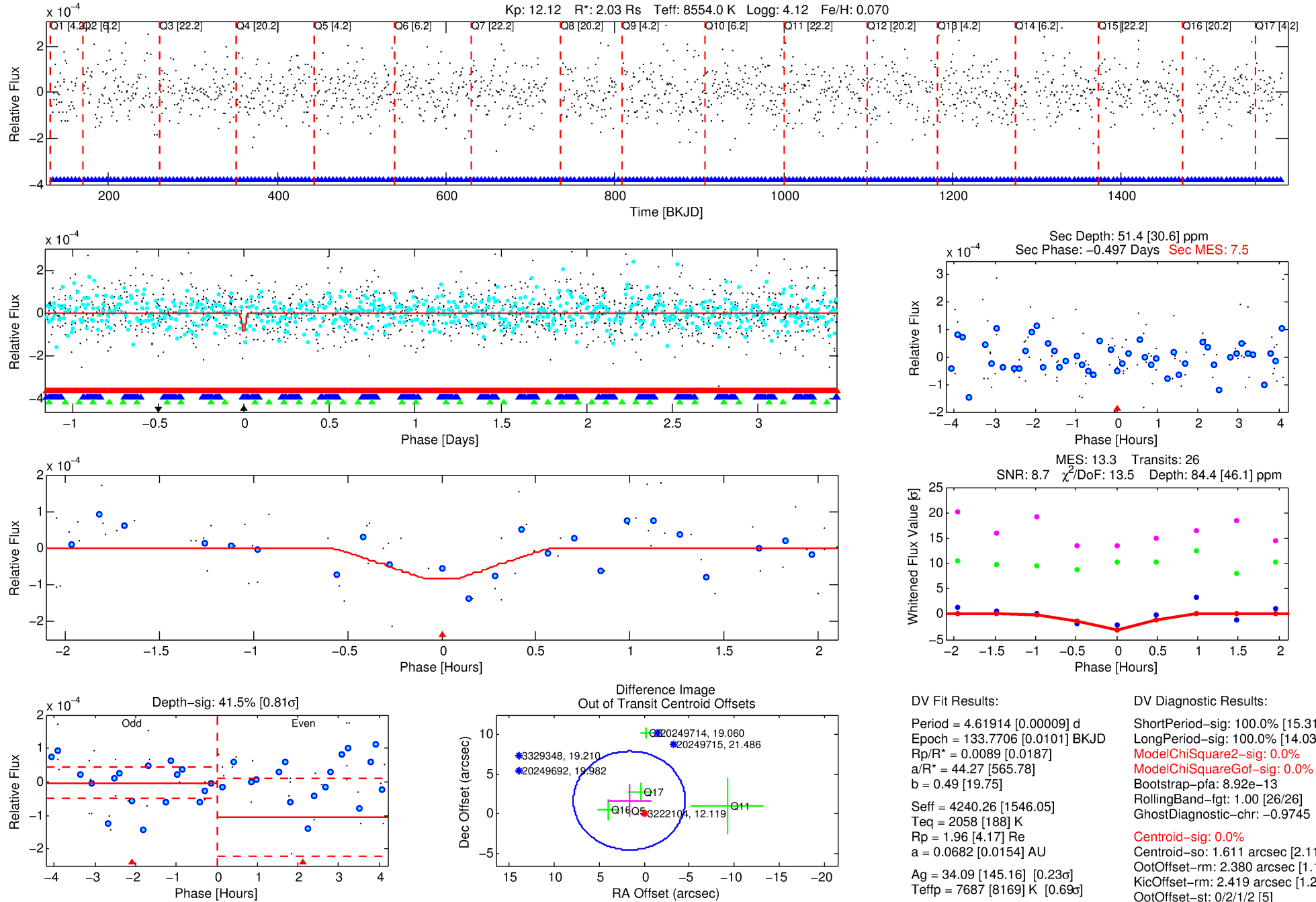
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003222104-04

No Significant Match Found

DV One-Page Summary

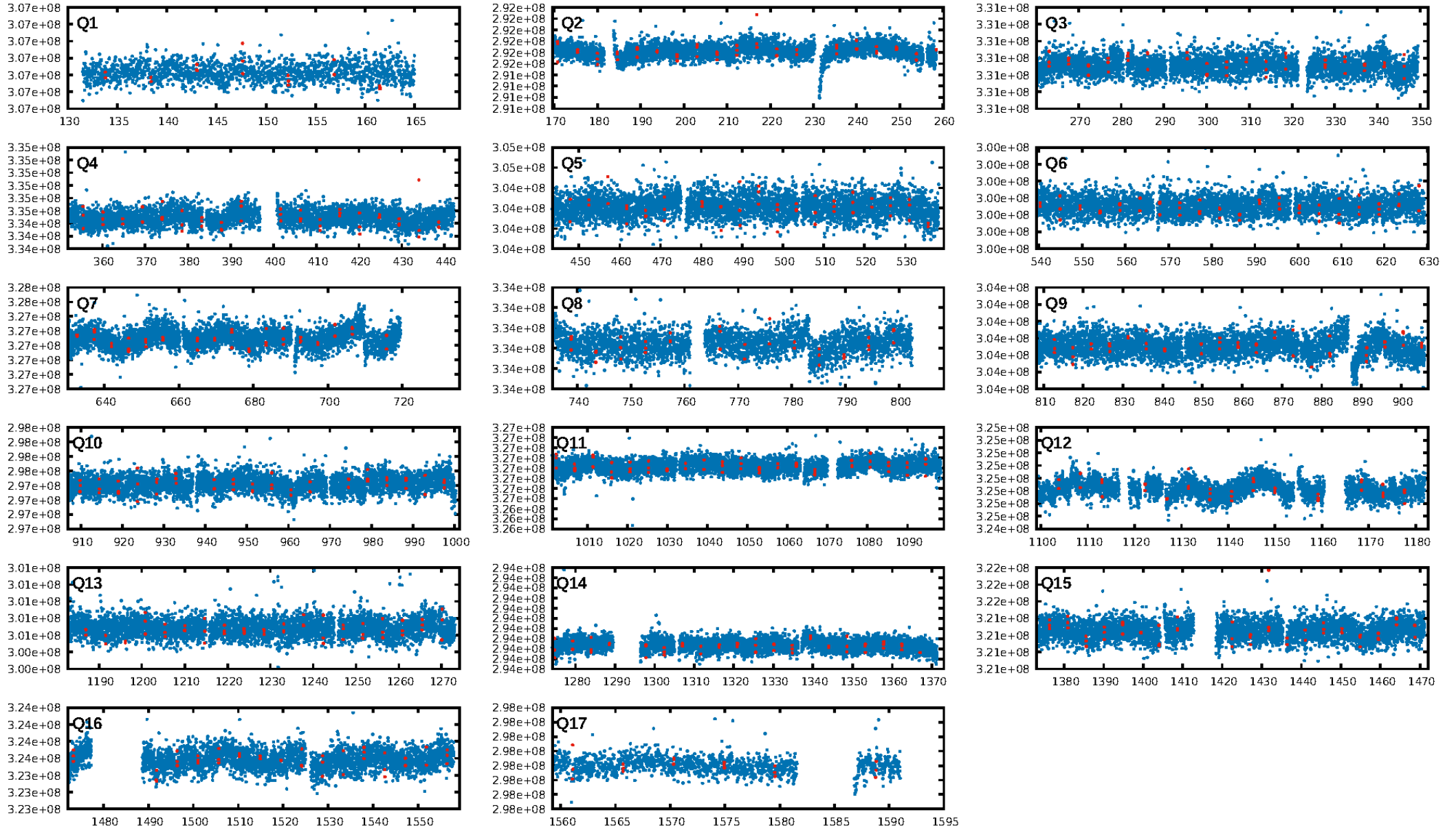
KIC: 3222104 Candidate: 4 of 4 Period: 4.619 d



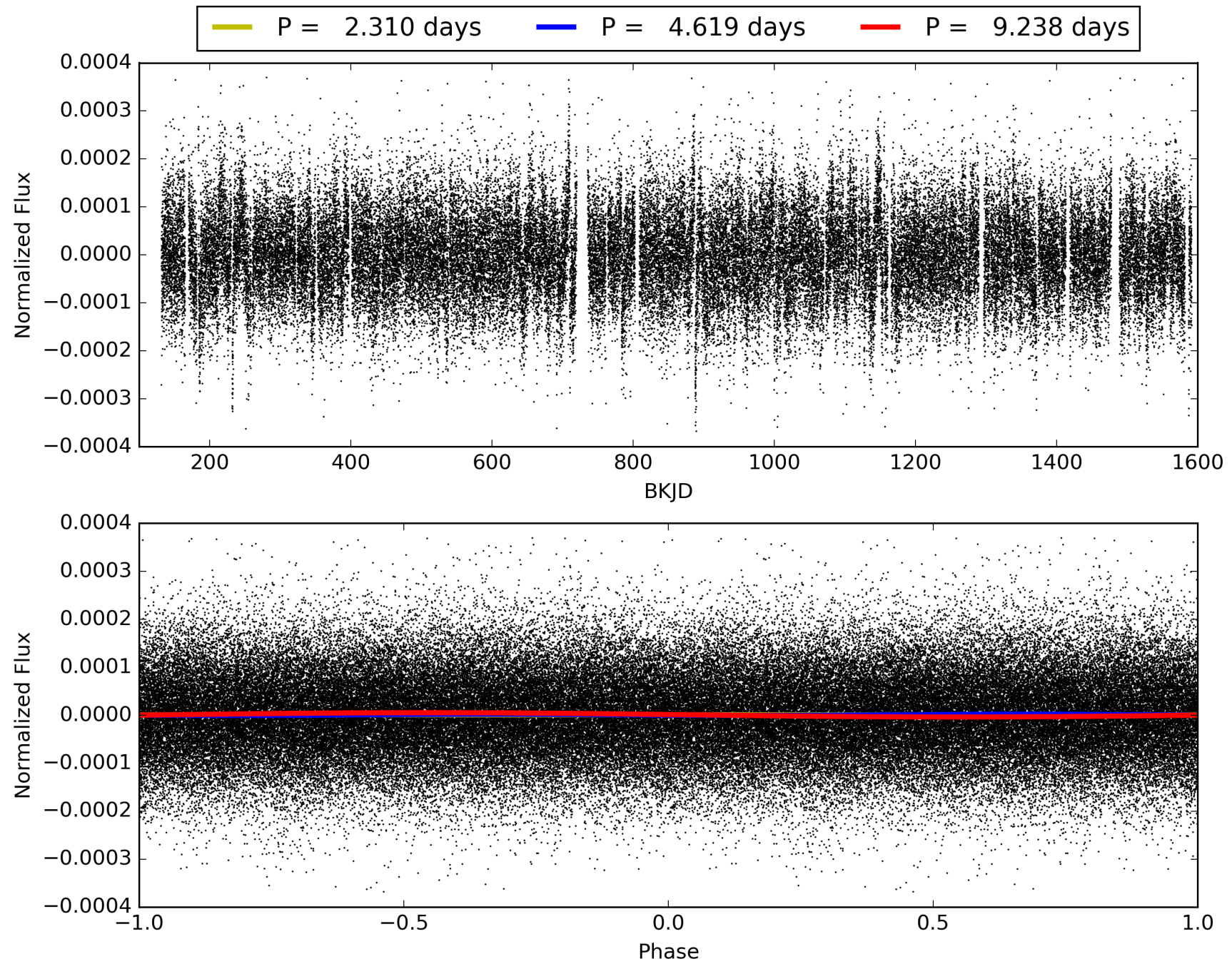
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:15:24 Z

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

TCE 003222104-04, PDC Light Curves

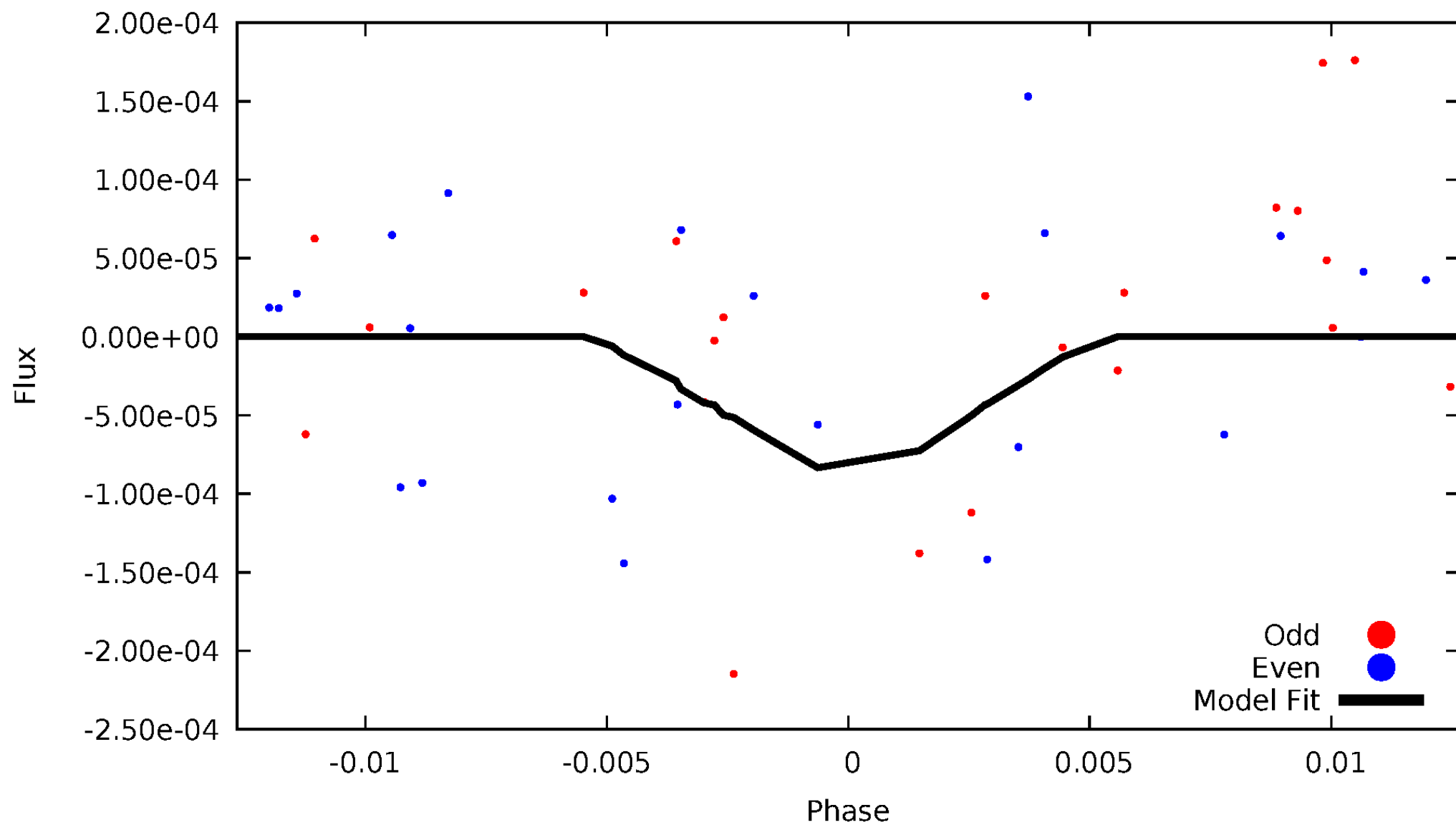


TCE 003222104-04



DV Odd/Even

TCE 003222104-04

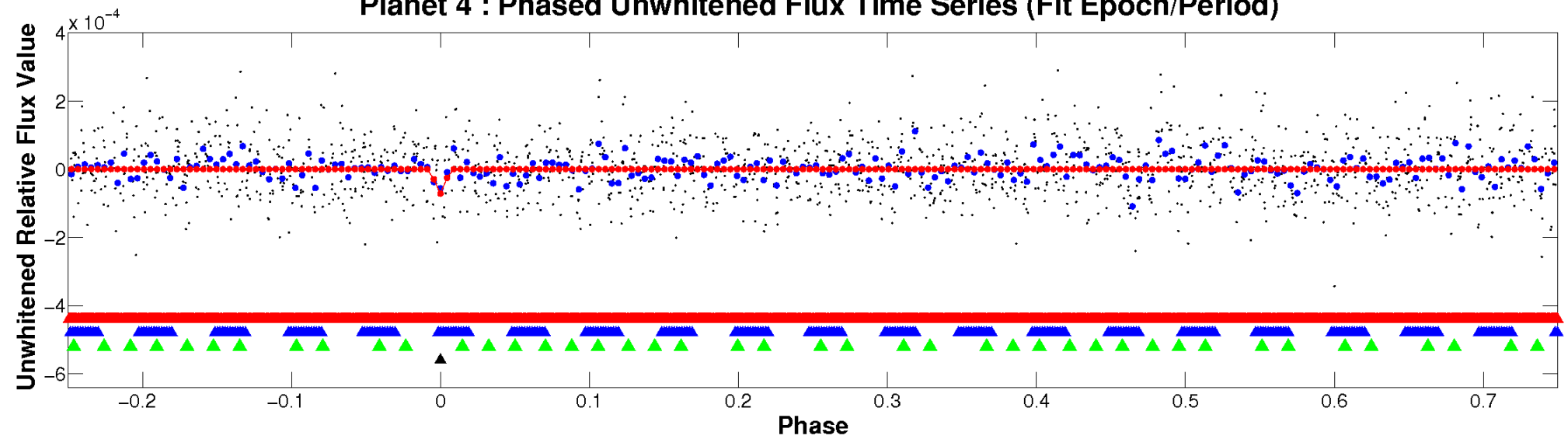


ALT Odd/Even

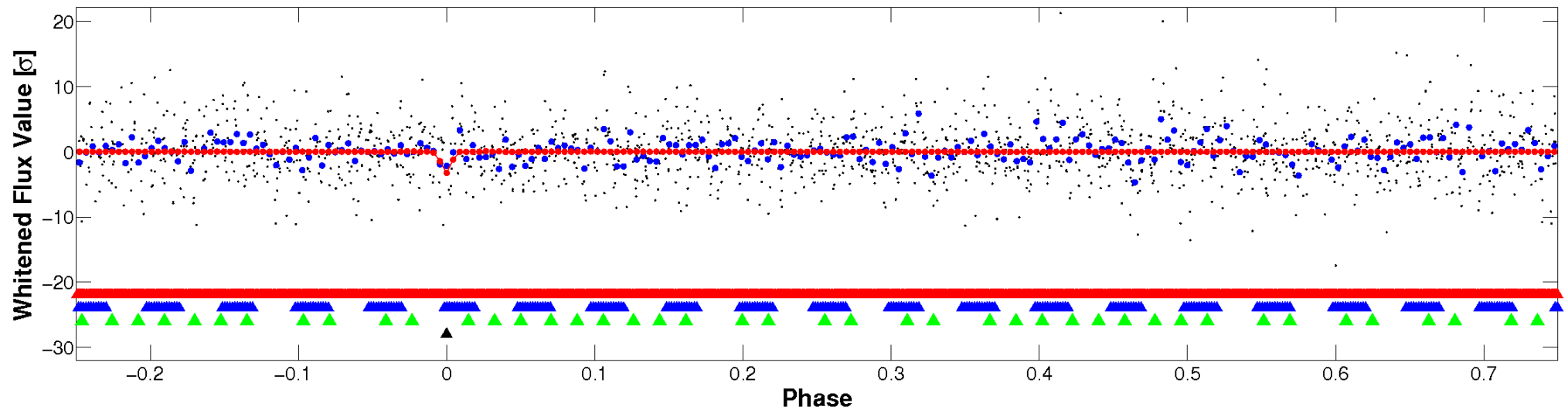
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

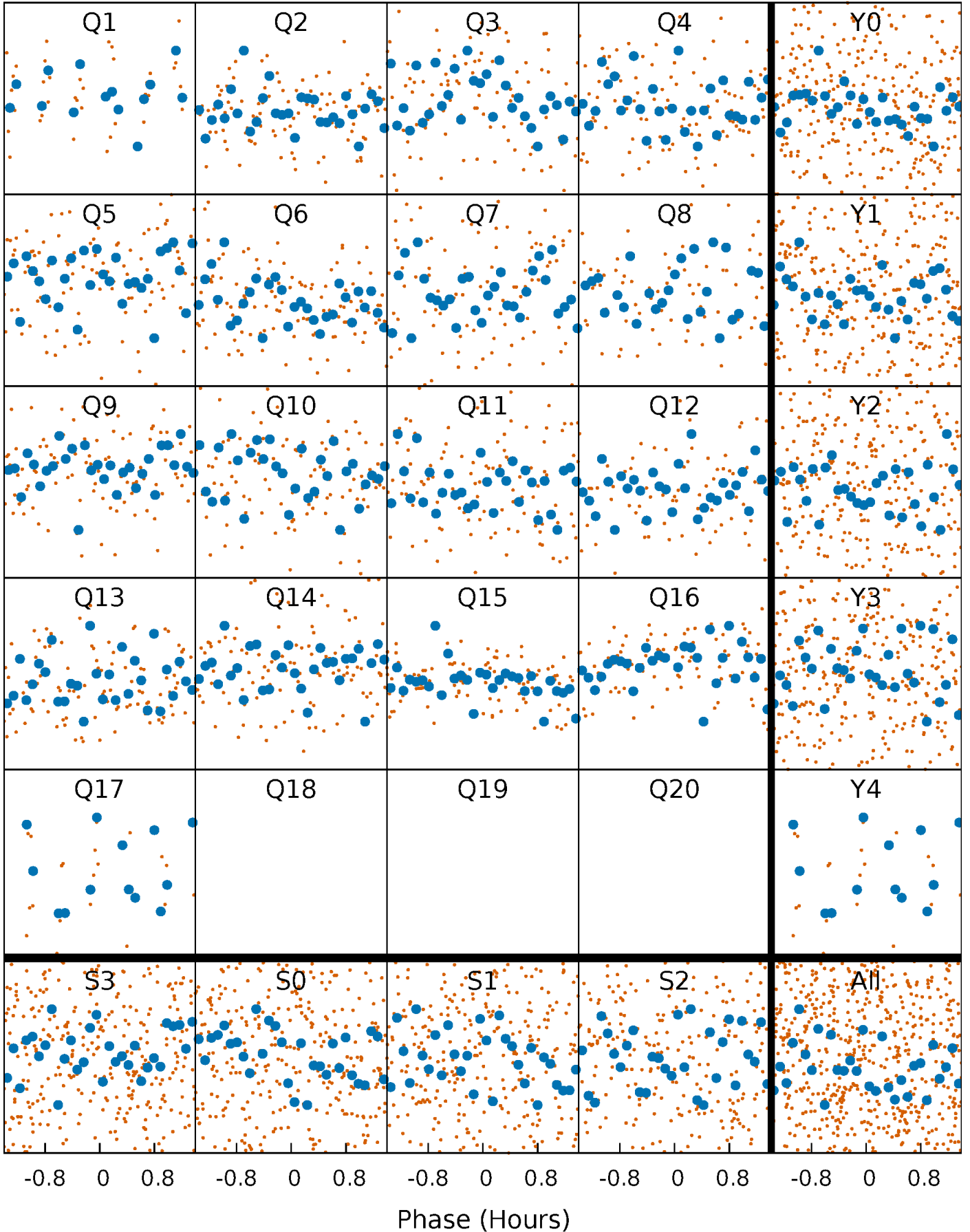


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



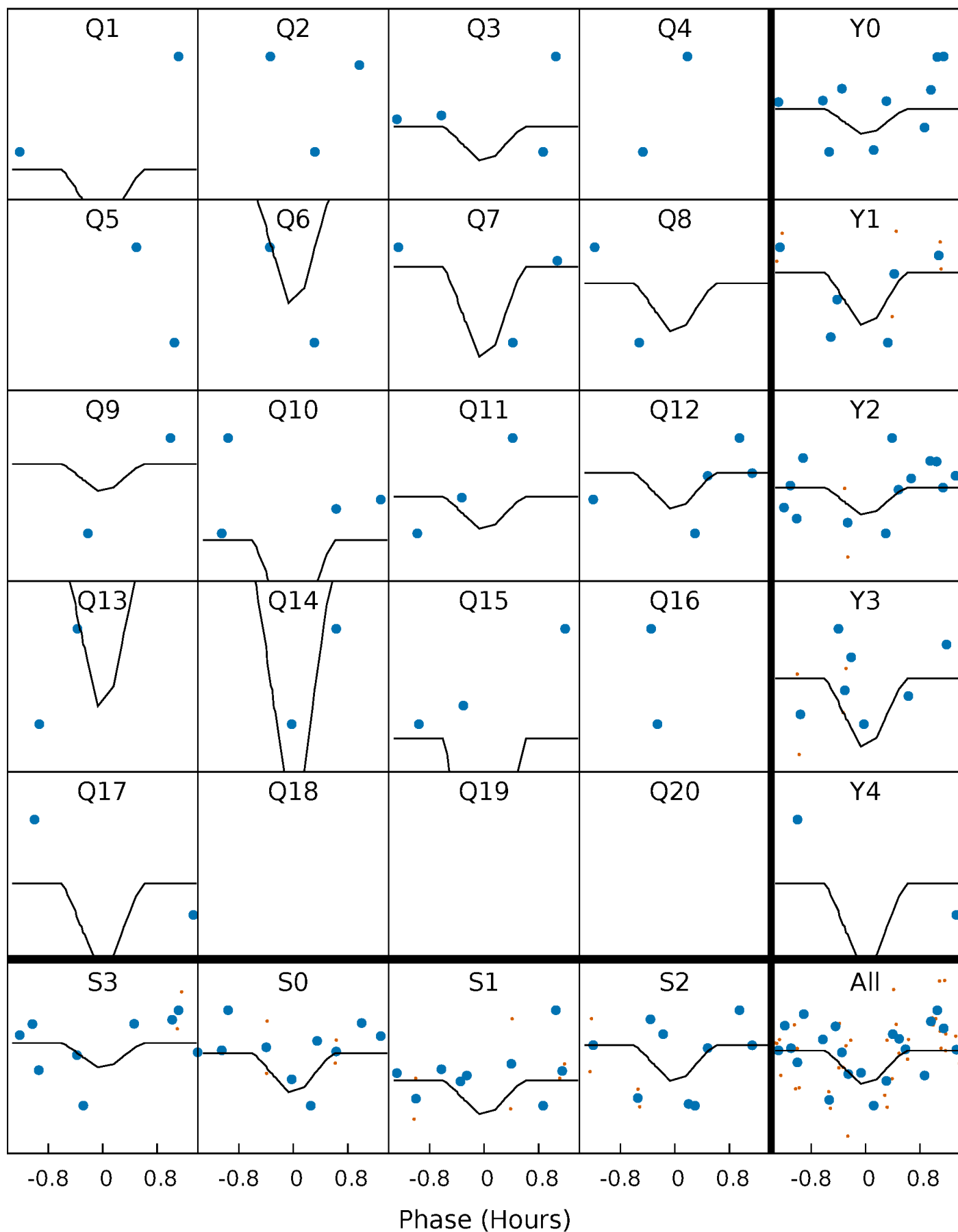
PDC Quarter-Phased Transit Curves

TCE 003222104-04 P= 4.619142 Days $T_0=133.770648$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003222104-04 P= 4.619142 Days $T_0=133.770648$ (BKJD)

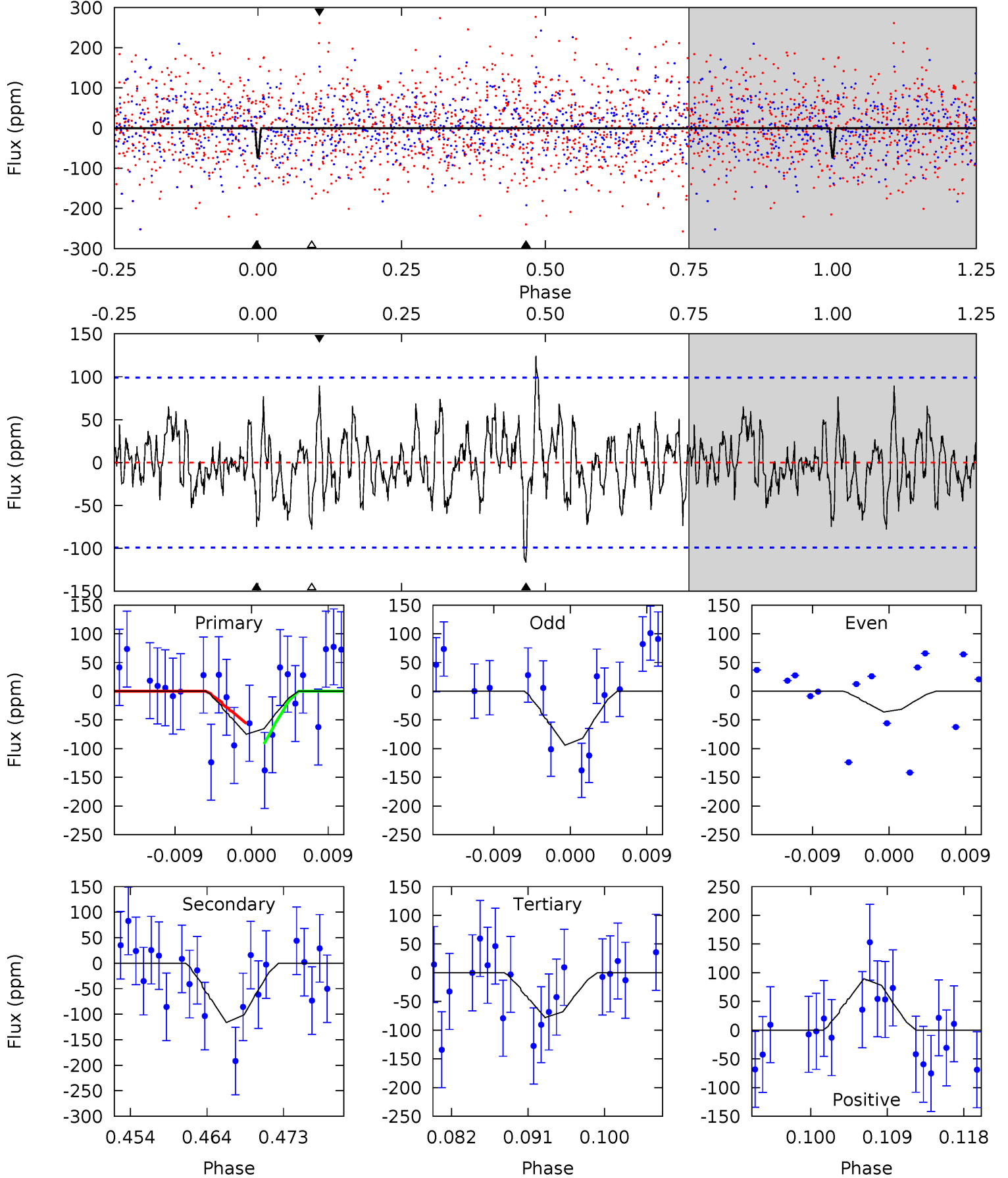


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

003222104-04, P = 4.619142 Days, E = 129.151506 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.82	5.92	3.97	4.56	5.04	2.61	1.55	-0.16	-0.74	1.95	1.37	1.49	0	0.52	0.92



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 003222104

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8554^{+234}_{-402}	$4.121^{+0.121}_{-0.162}$	$0.070^{+0.300}_{-0.500}$	$2.027^{+0.575}_{-0.383}$	$1.979^{+0.343}_{-0.419}$	$0.335^{+0.206}_{-0.147}$
	+3%/-5%	+3%/-4%	+429%/-714%	+28%/-19%	+17%/-21%	+61%/-44%
Source	KIC0	KIC0	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 003222104-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-116 ± 20	$3.67^{+3.36}_{-2.47}$	2876^{+206}_{-182}	6598^{+7917}_{-1791}	21^{+191}_{-15}
Alt.	N/A	N/A	N/A	N/A	N/A

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

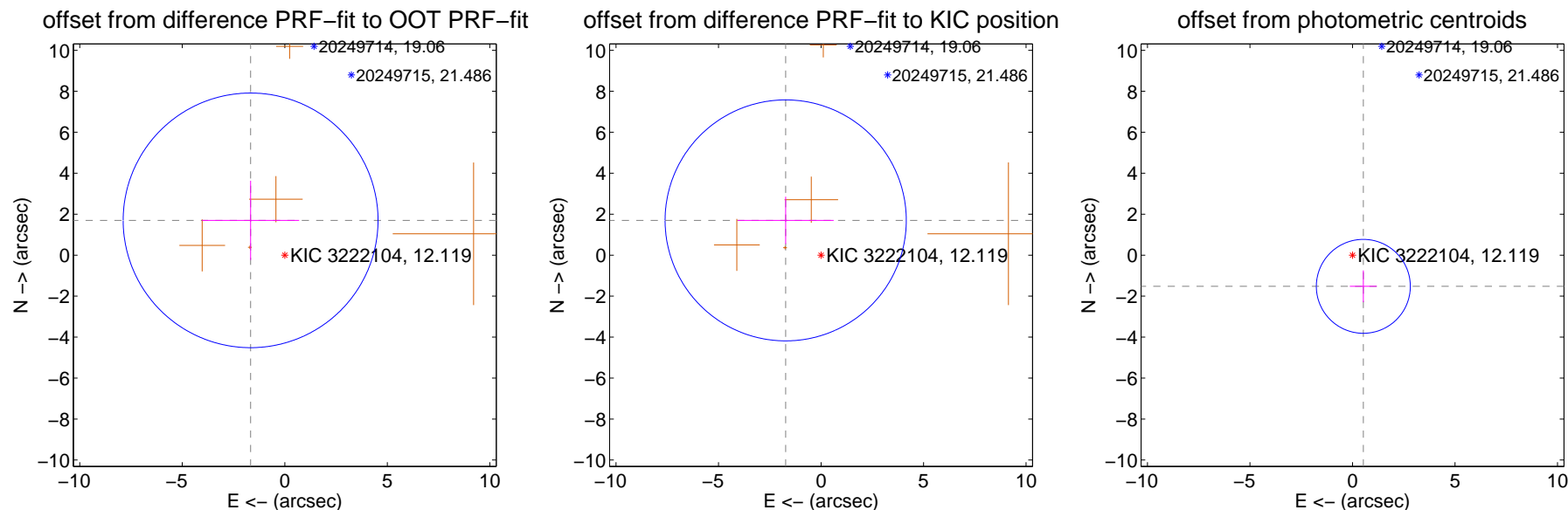
DV Centroid Data

Supplemental centroid analysis for 003222104-04. Kepler magnitude: 12.12. Transit SNR 8.70

There are 0 quarters with good PRF difference image offsets

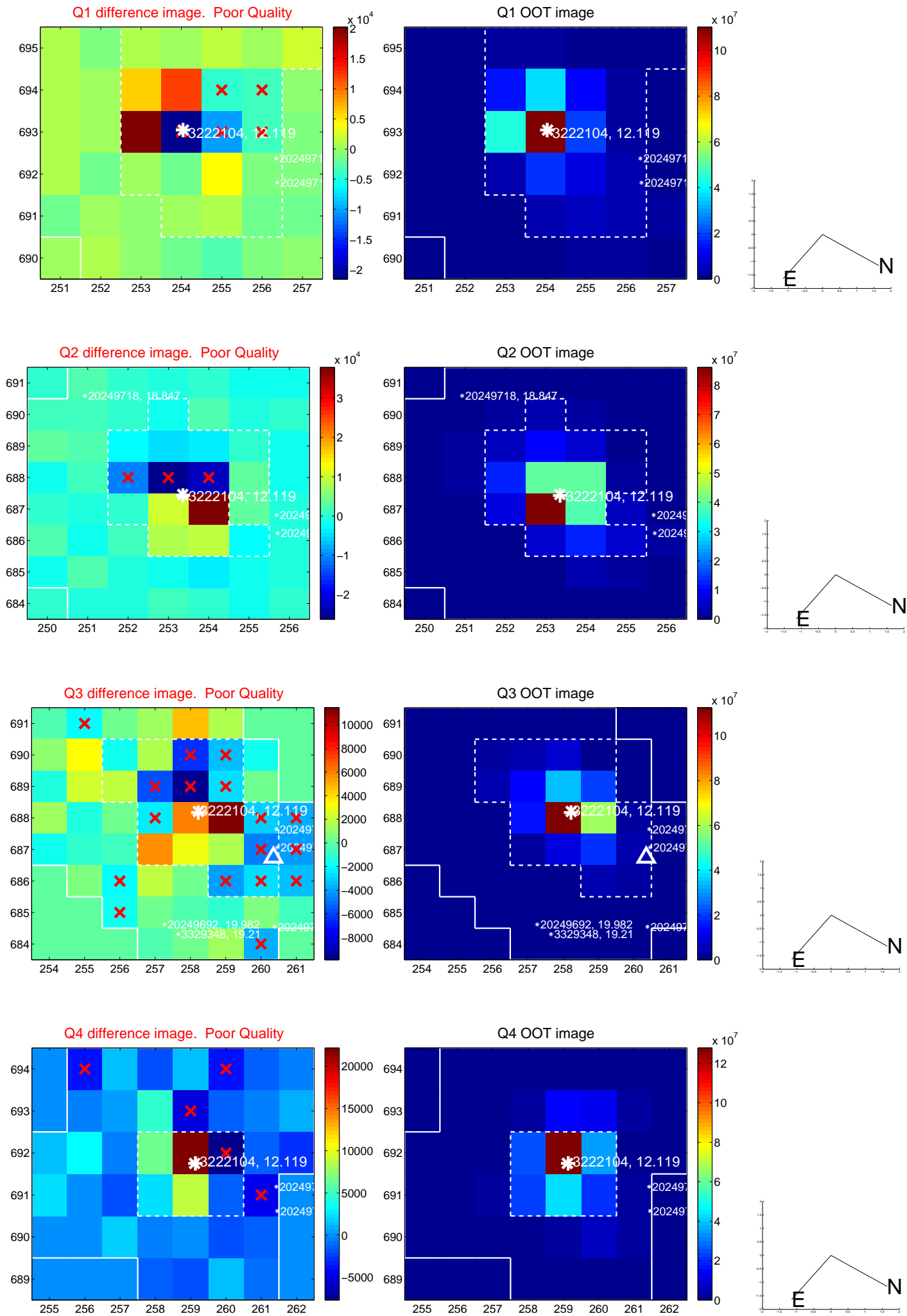
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.380 ± 2.071	1.15	1.667 ± 2.369	1.698 ± 1.935
PRF-fit source offset from KIC position	2.419 ± 1.960	1.23	1.724 ± 2.343	1.697 ± 1.154
photometric centroid source offset	1.61 ± 0.76	2.11	-0.53 ± 0.66	-1.52 ± 0.78

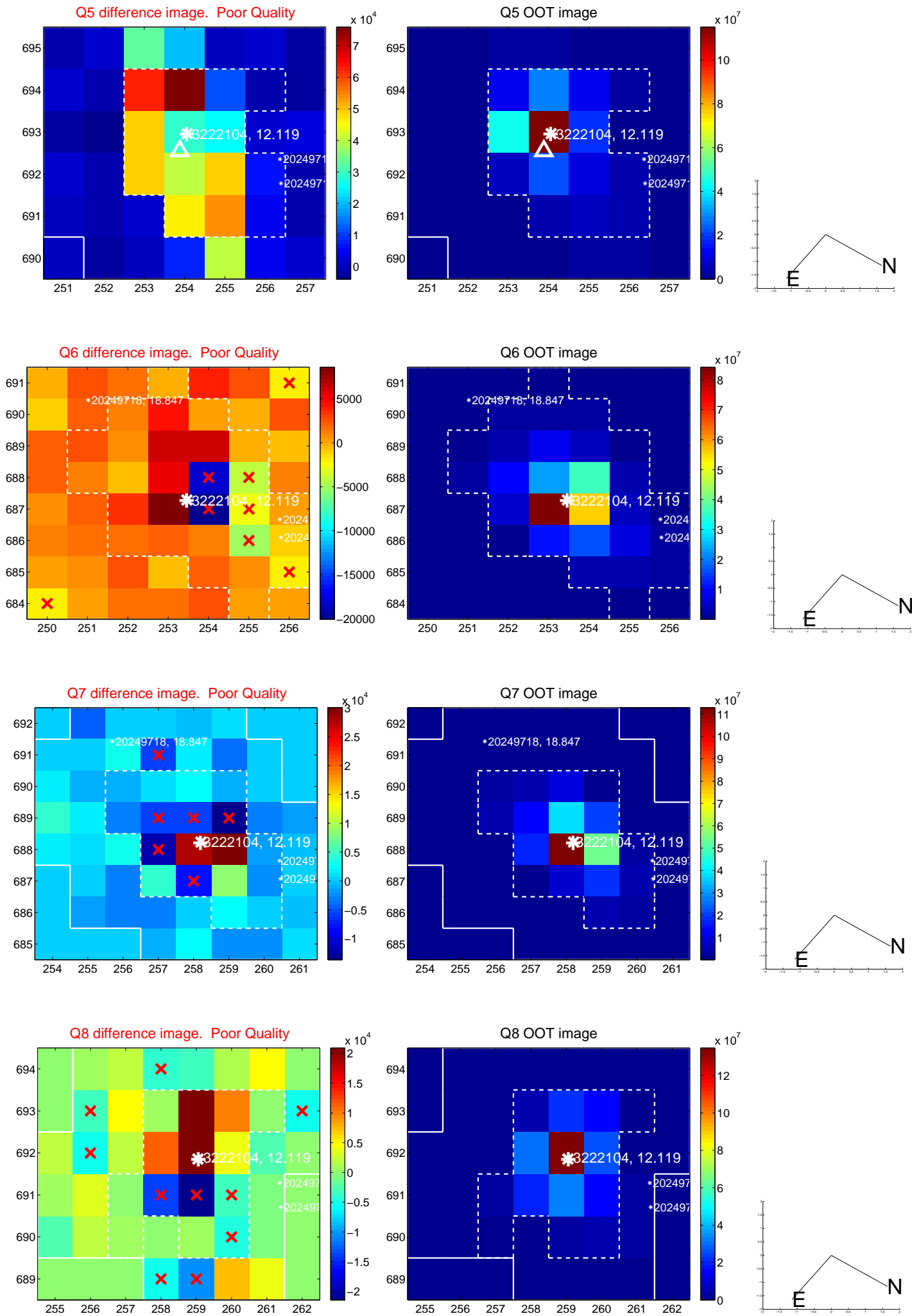


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

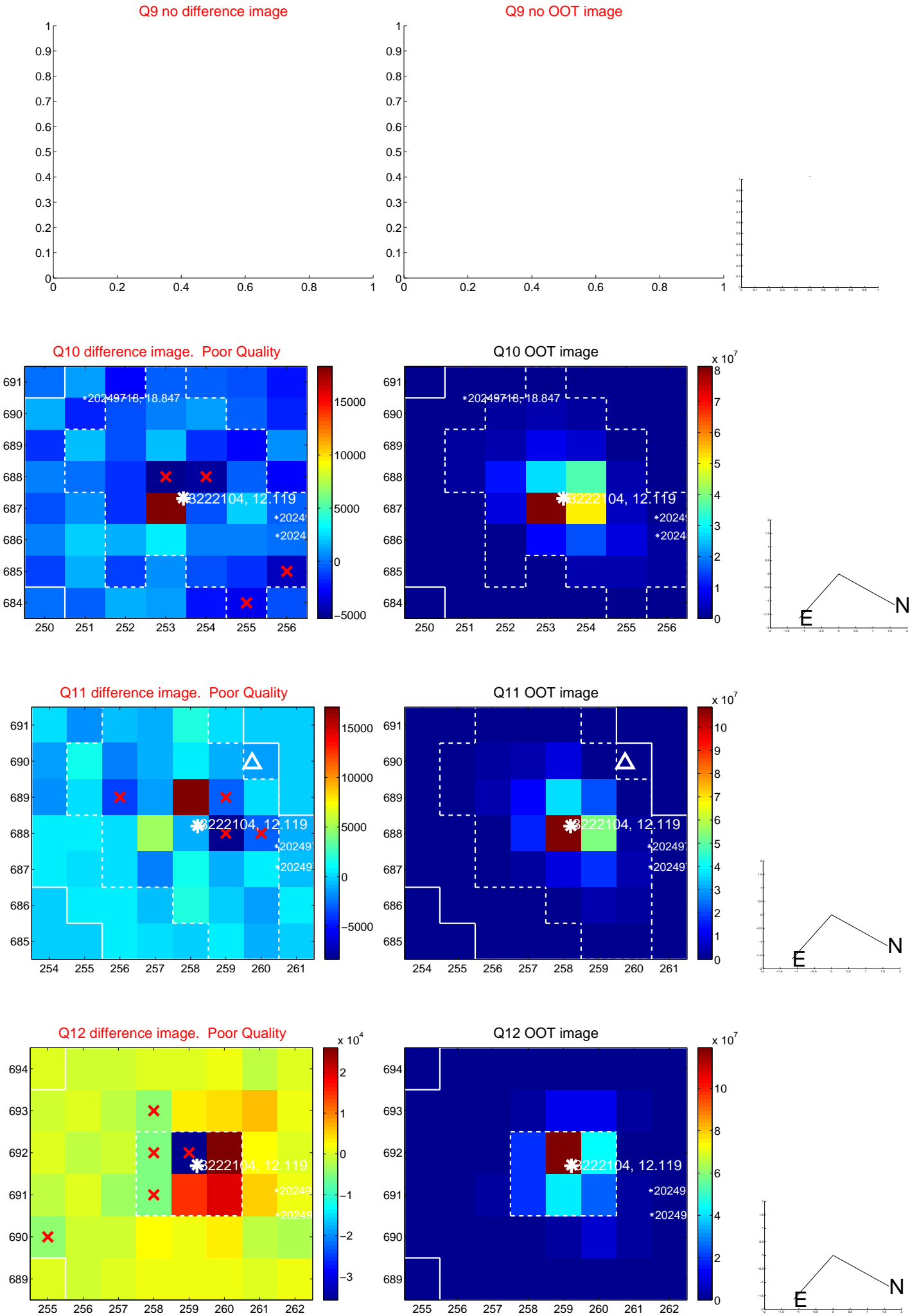
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



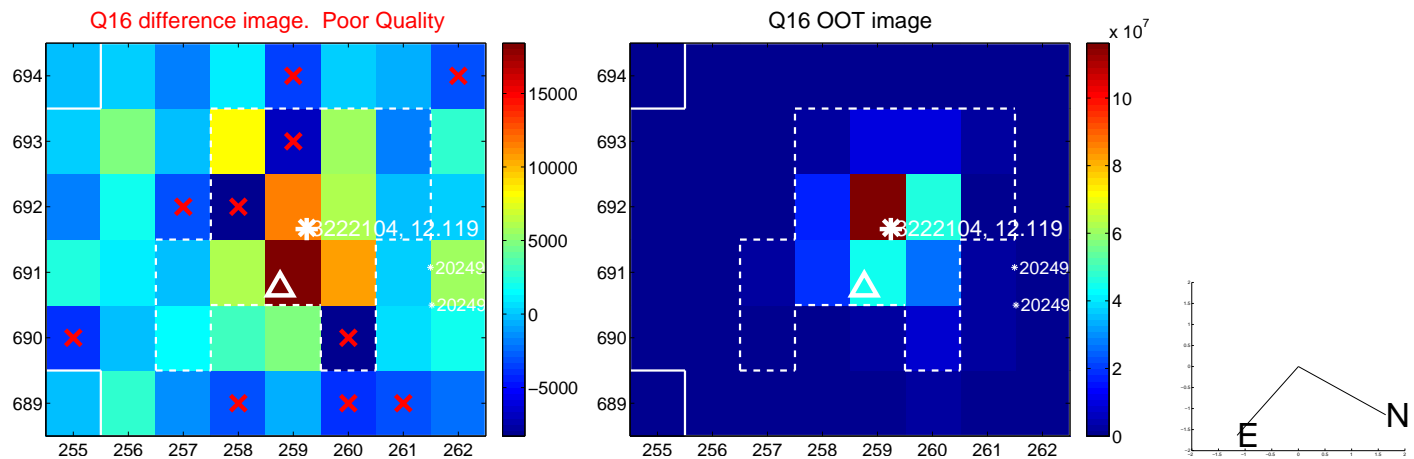
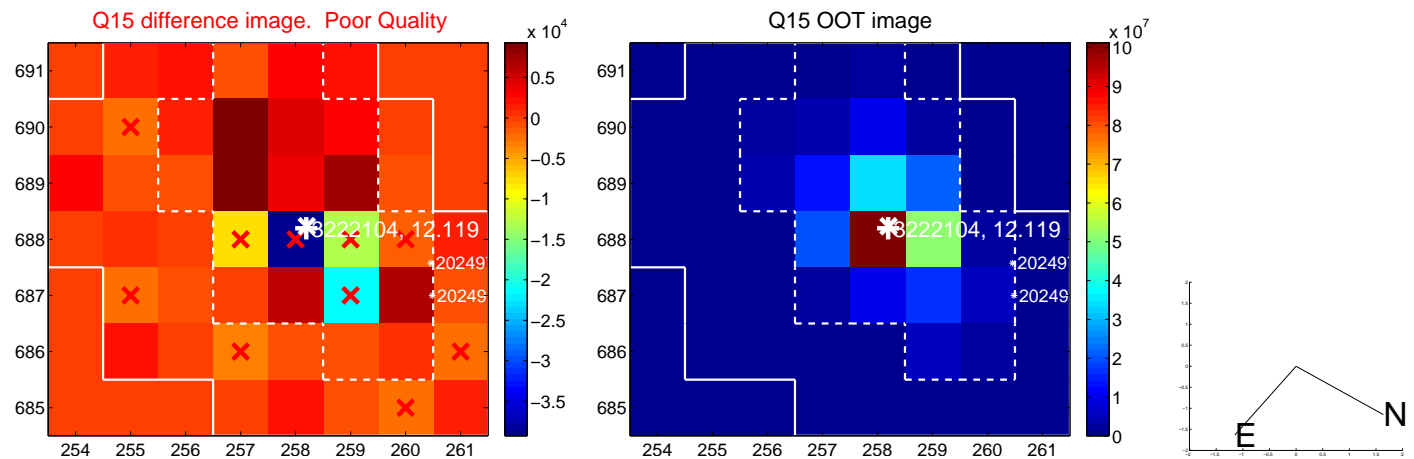
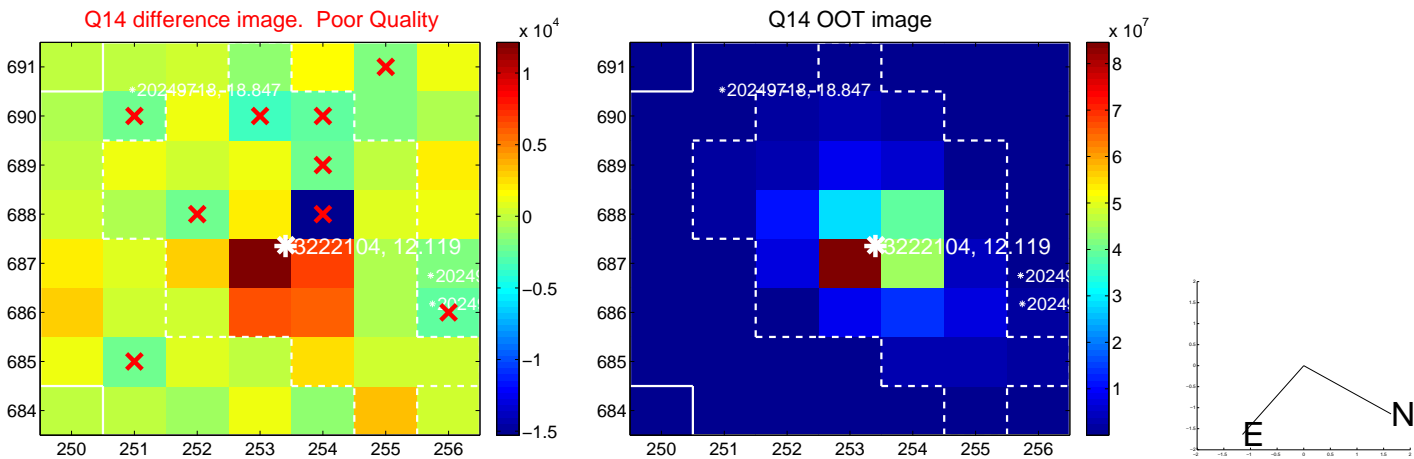
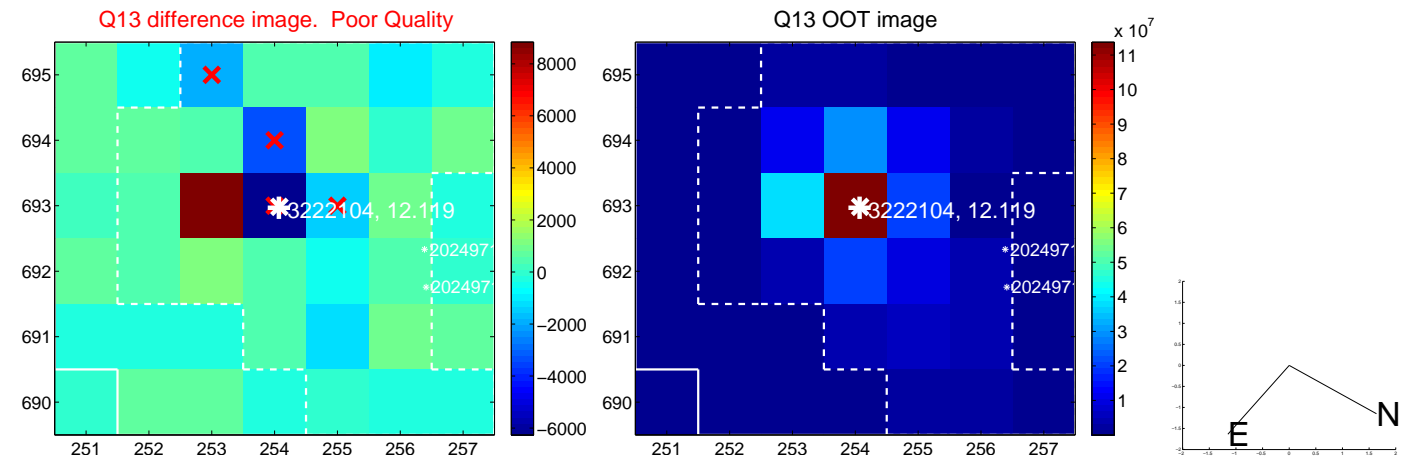
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



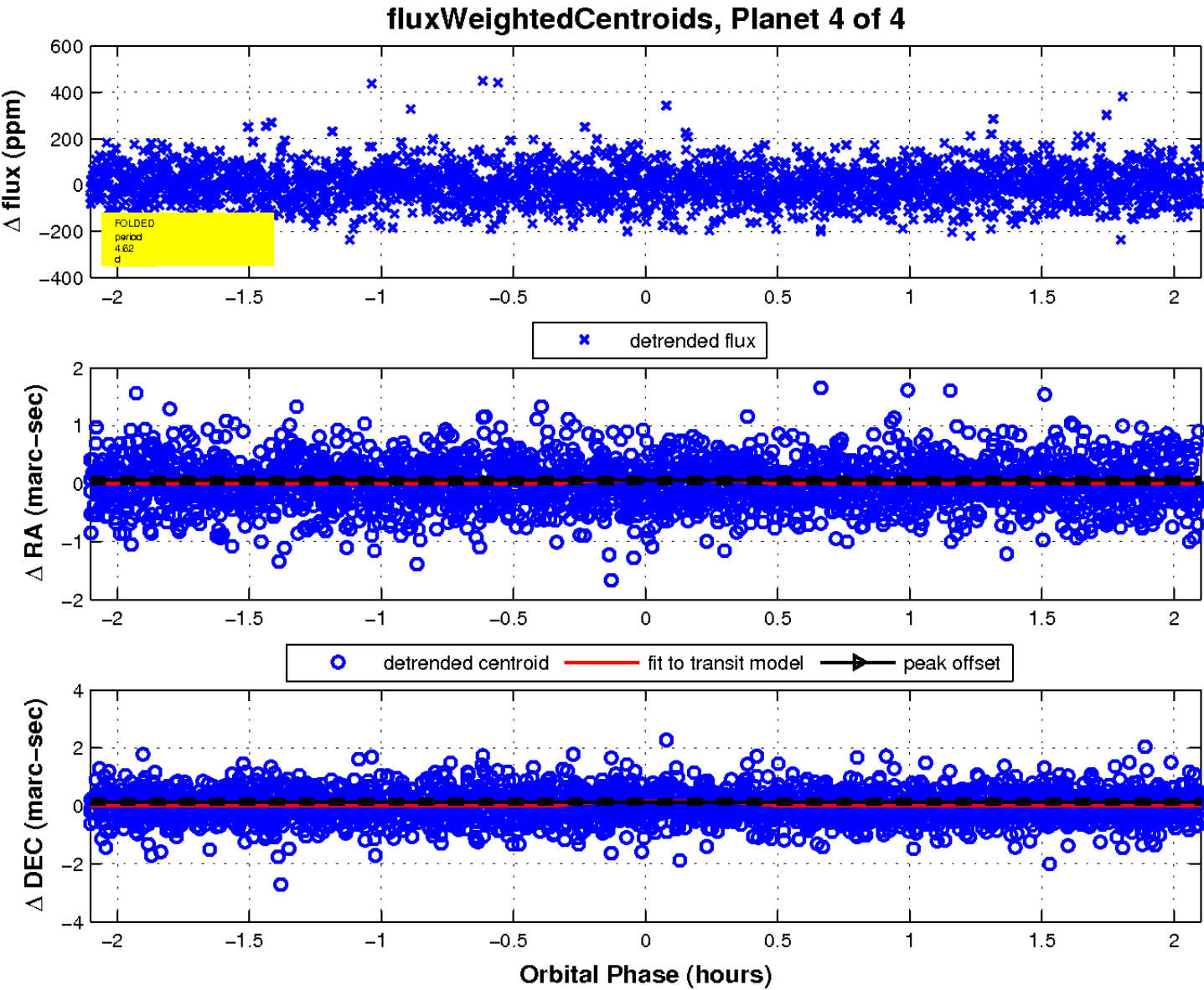
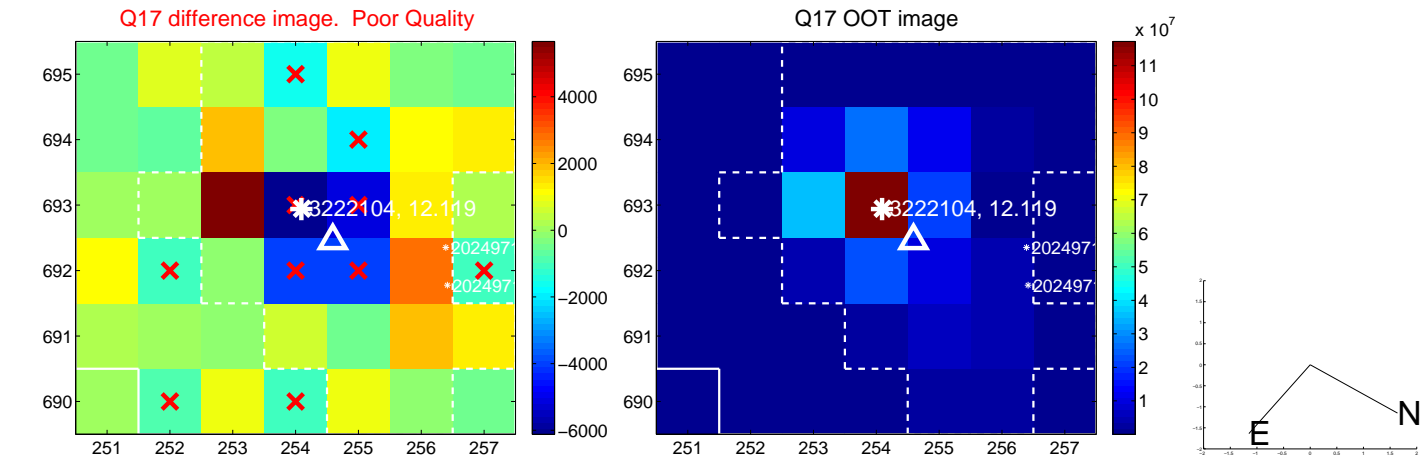
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

