

KIC 003340360

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})
003340360-01	OBS	No	0.949331	131.894299	26.0	1.847	10.7	3.8	1.65	7522	0.97	15504.16
003340360-02	OBS	No	0.949335	132.292905	48.5	2.037	9.5	7.0	1.65	7522	1.32	15504.06
003340360-03	OBS	No	1.296151	131.796513	92.7	7.750	8.0	10.0	1.65	7522	1.61	10236.01
003340360-04	OBS	No	1.394976	131.664246	374.2	5.000	13.9	-1.0	1.65	7522	3.23	9280.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340360-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003340360-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
003340360-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
003340360-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

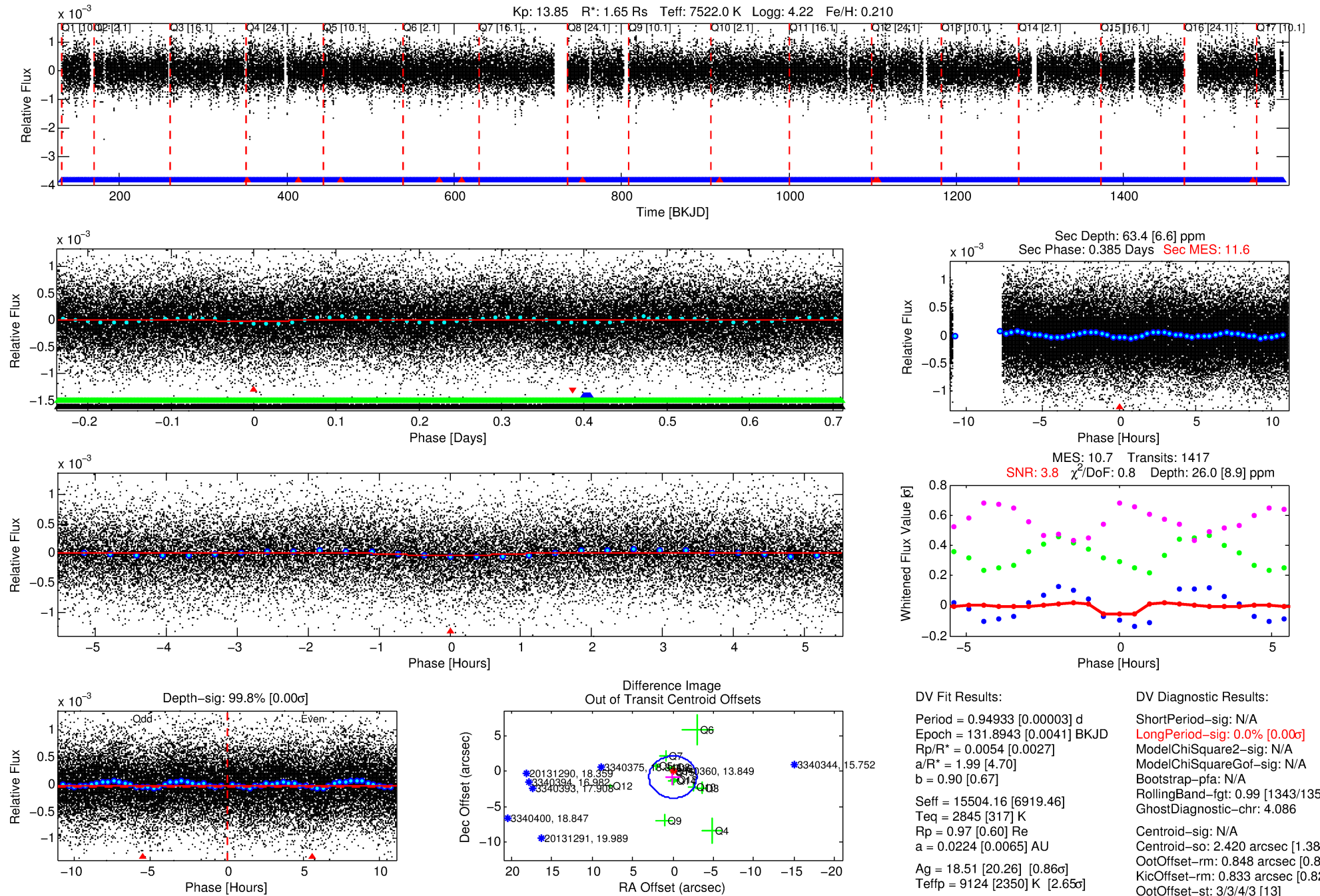
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003340360-01

No Significant Match Found

DV One-Page Summary

KIC: 3340360 Candidate: 1 of 4 Period: 0.949 d



DV Fit Results:

Period = 0.94933 [0.00003] d
Epoch = 131.8943 [0.0041] BKJD
Rp/R* = 0.0054 [0.0027]
a/R* = 1.99 [4.70]
b = 0.90 [0.67]
Seff = 15504.16 [6919.46]
Teff = 2845 [317] K
Rp = 0.97 [0.60] Re
a = 0.0224 [0.0065] AU
Ag = 18.51 [20.26] [0.86σ]
Teffp = 9124 [2350] K [2.65σ]

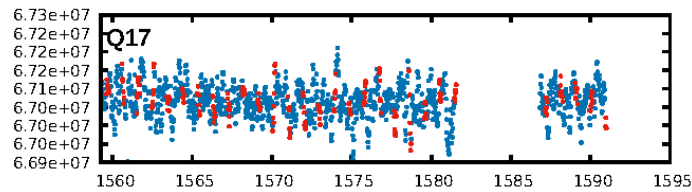
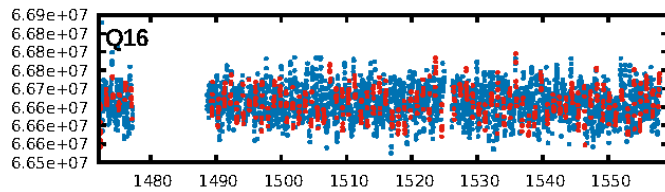
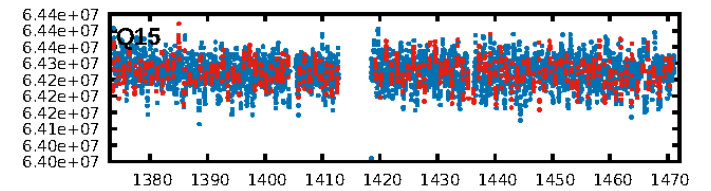
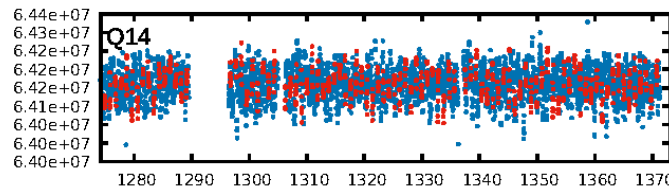
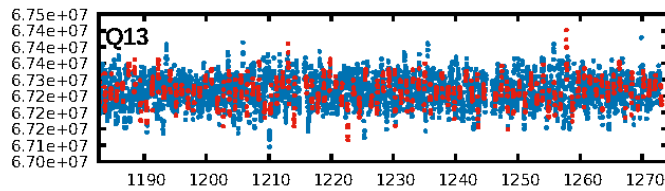
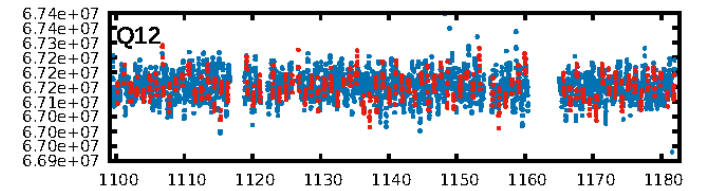
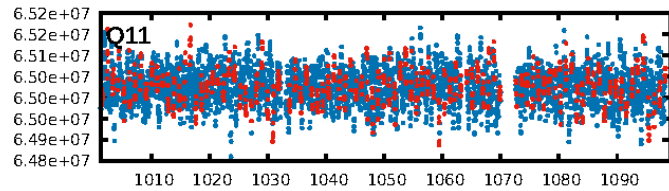
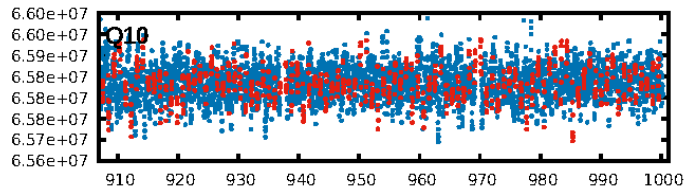
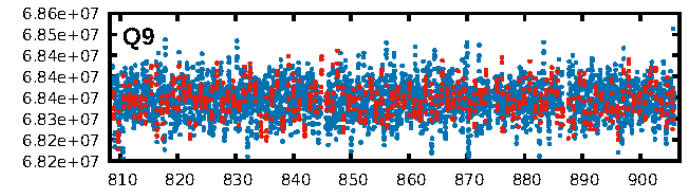
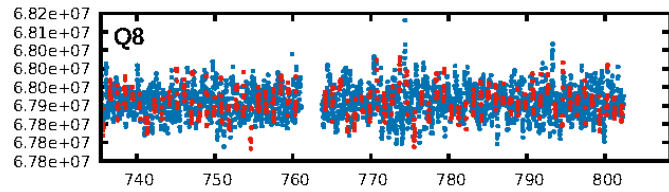
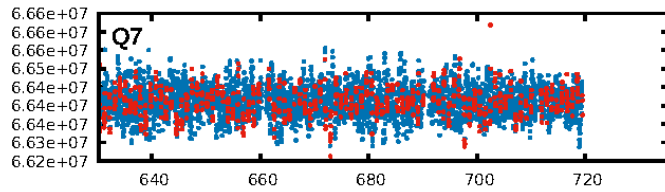
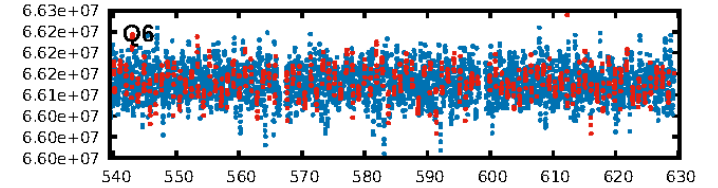
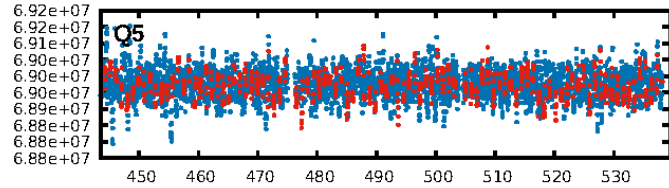
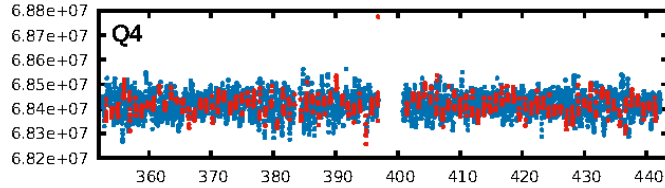
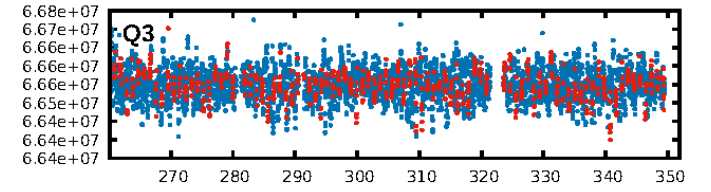
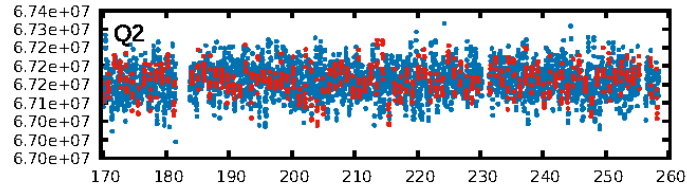
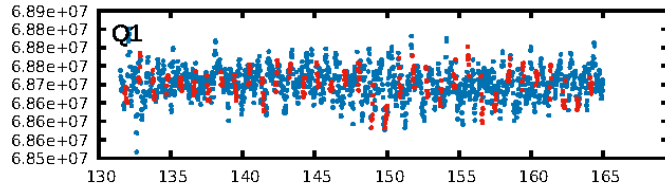
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1343/1353]
GhostDiagnostic-chr: 4.086
Centroid-sig: N/A
Centroid-so: 2.420 arcsec [1.38σ]
OotOffset-rm: 0.848 arcsec [0.86σ]
KicOffset-rm: 0.833 arcsec [0.82σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [17/17]

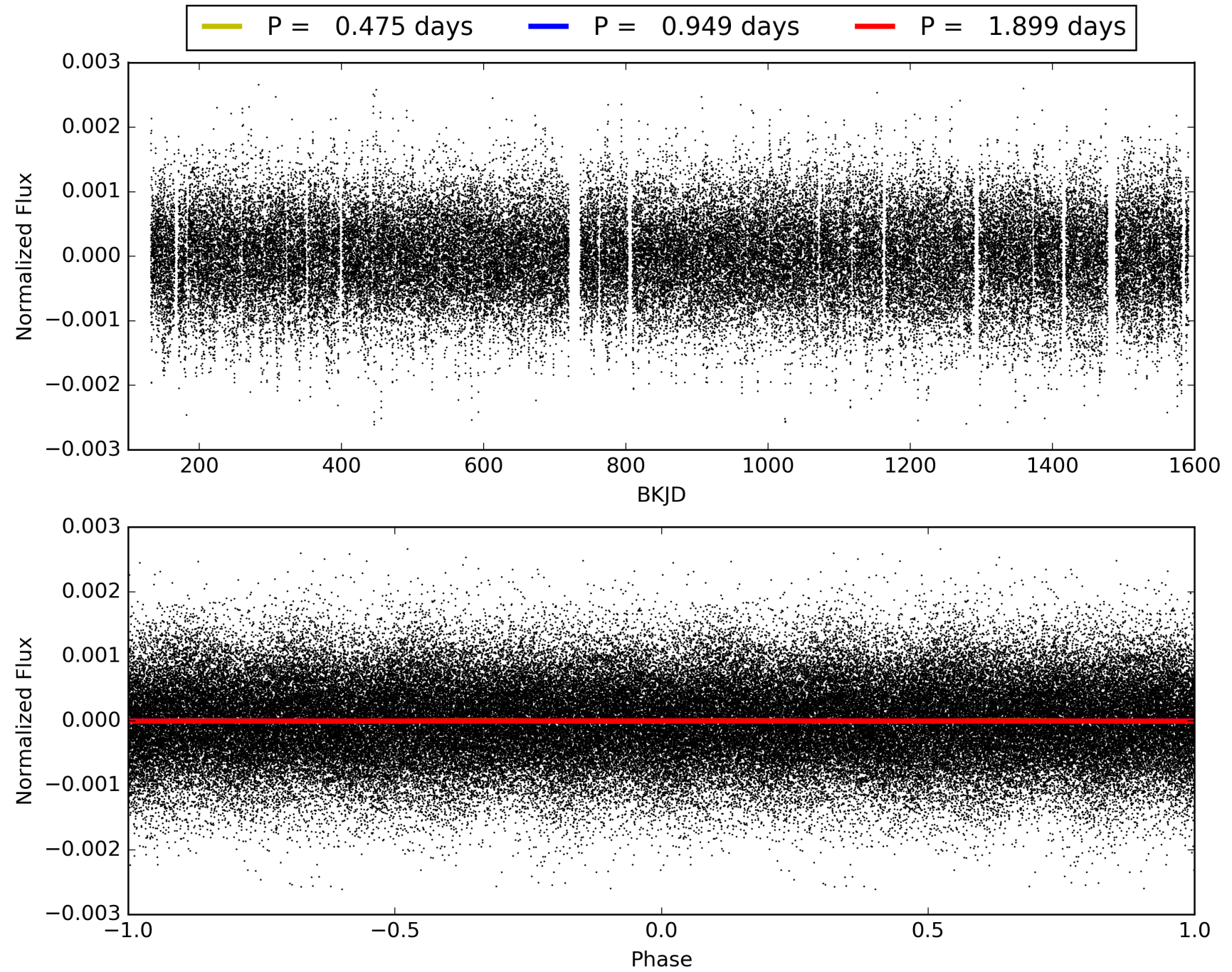
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:36:15 Z

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

TCE 003340360-01, PDC Light Curves

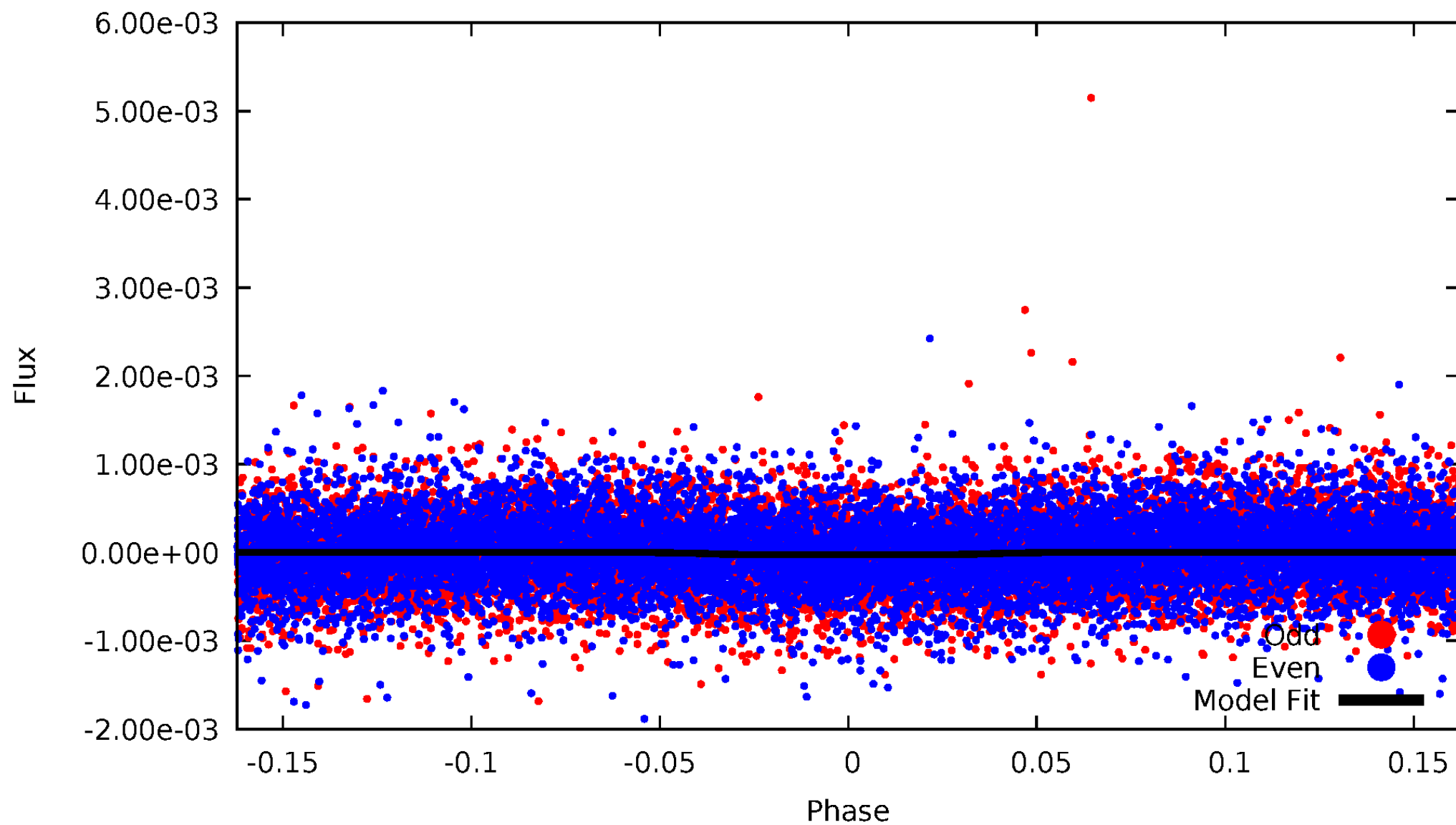


TCE 003340360-01



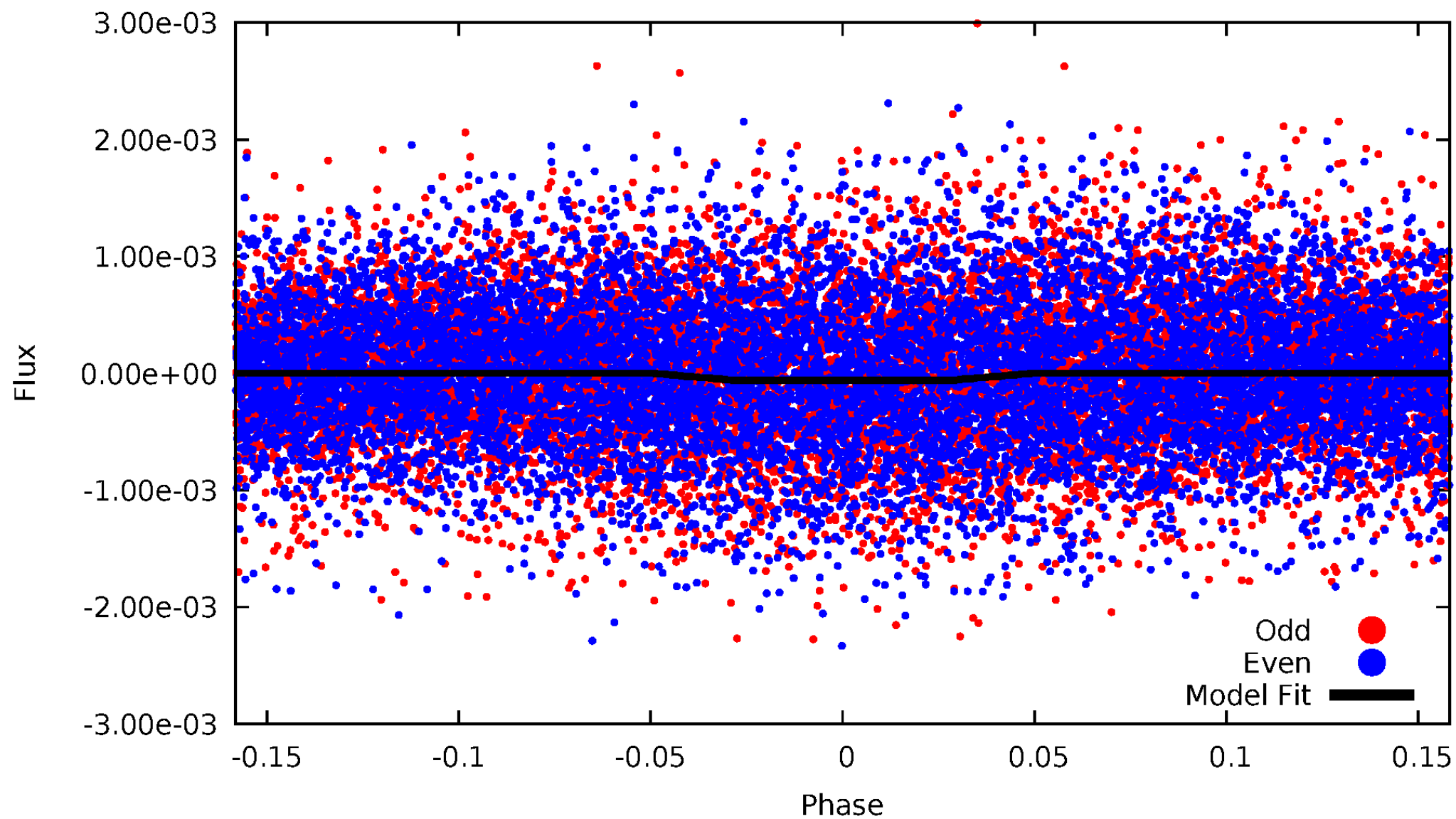
DV Odd/Even

TCE 003340360-01



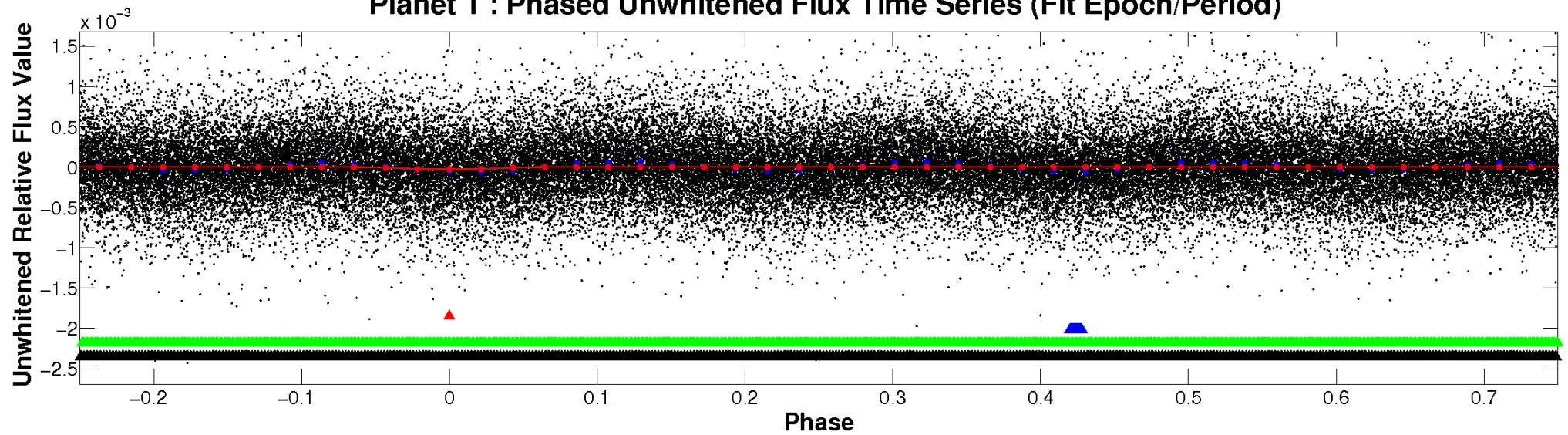
ALT Odd/Even

TCE 003340360-01

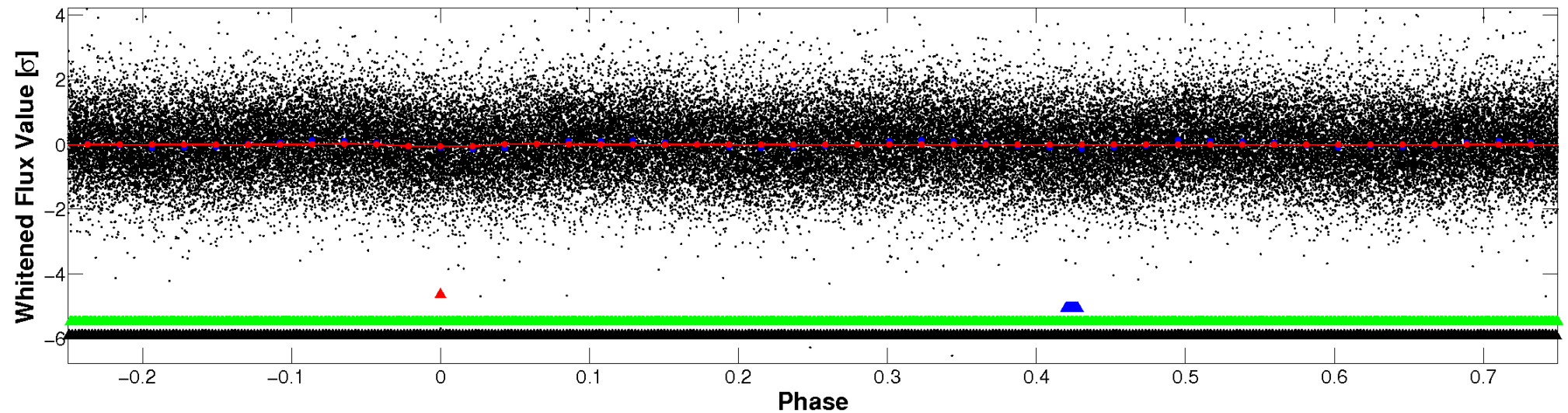


Non-Whitened Vs. Whitened Light Curve

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

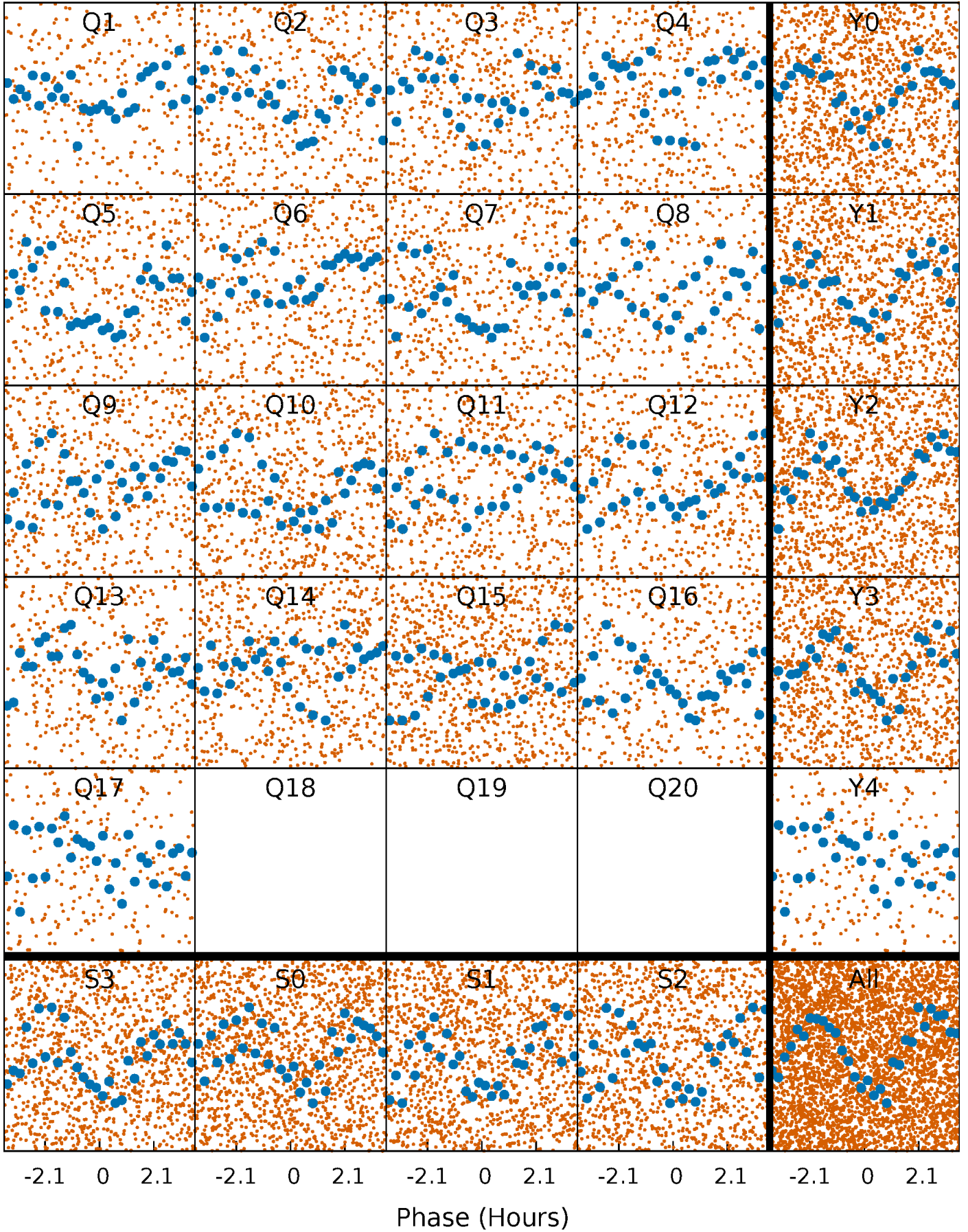


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



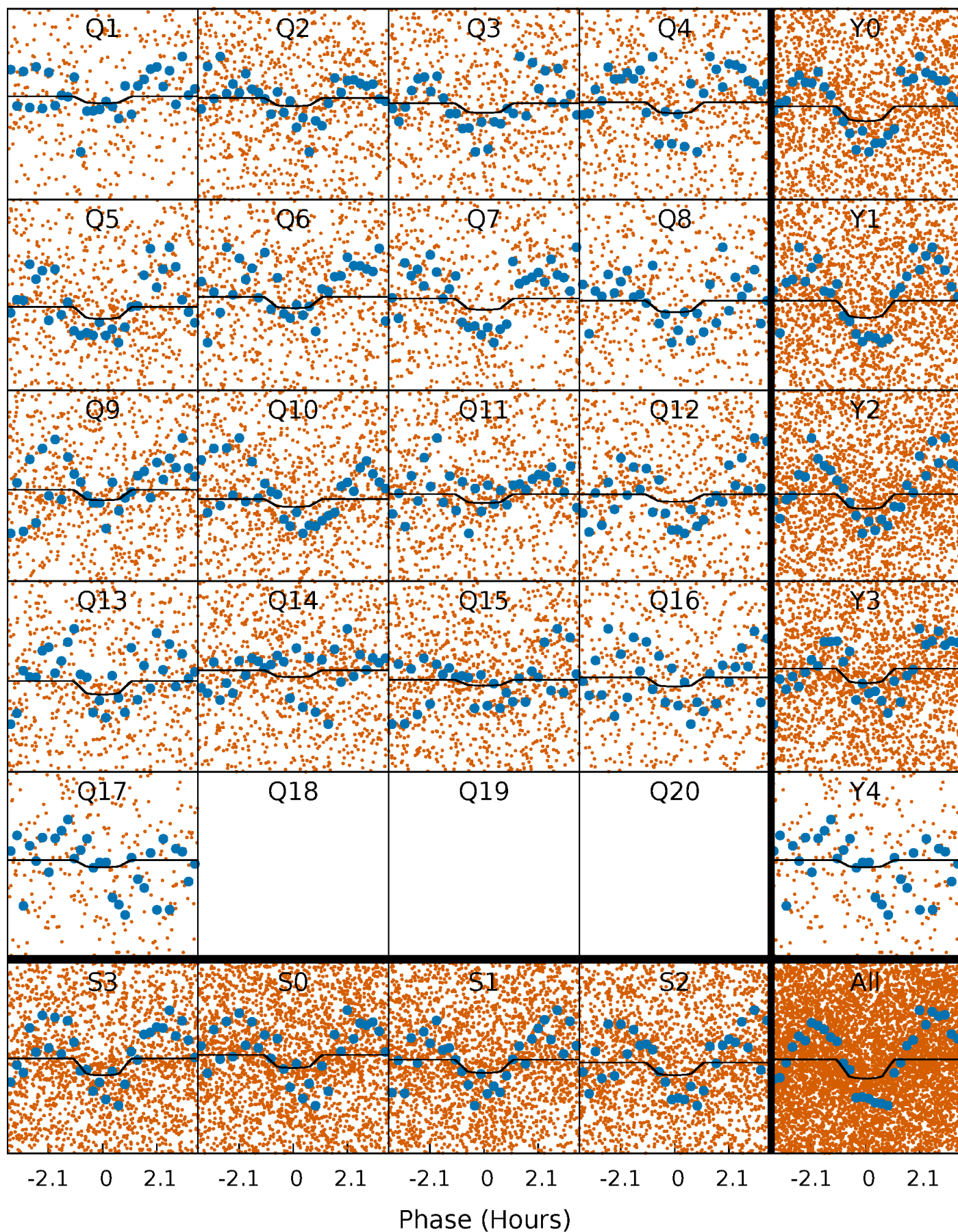
PDC Quarter-Phased Transit Curves

TCE 003340360-01 P= 0.949331 Days $T_0=131.894299$ (BKJD)



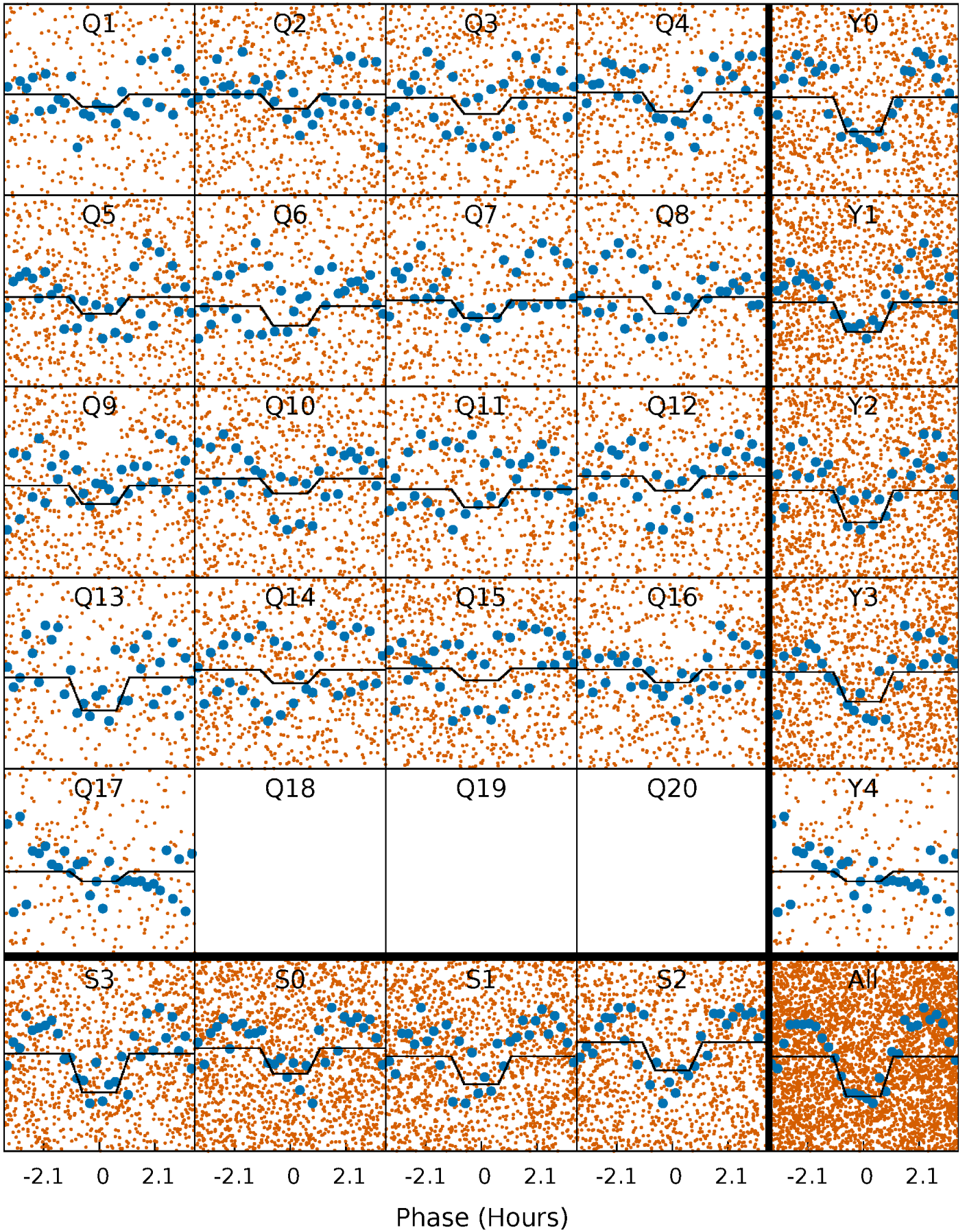
DV Quarter-Phased Transit Curves

TCE 003340360-01 P= 0.949331 Days $T_0=131.894299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

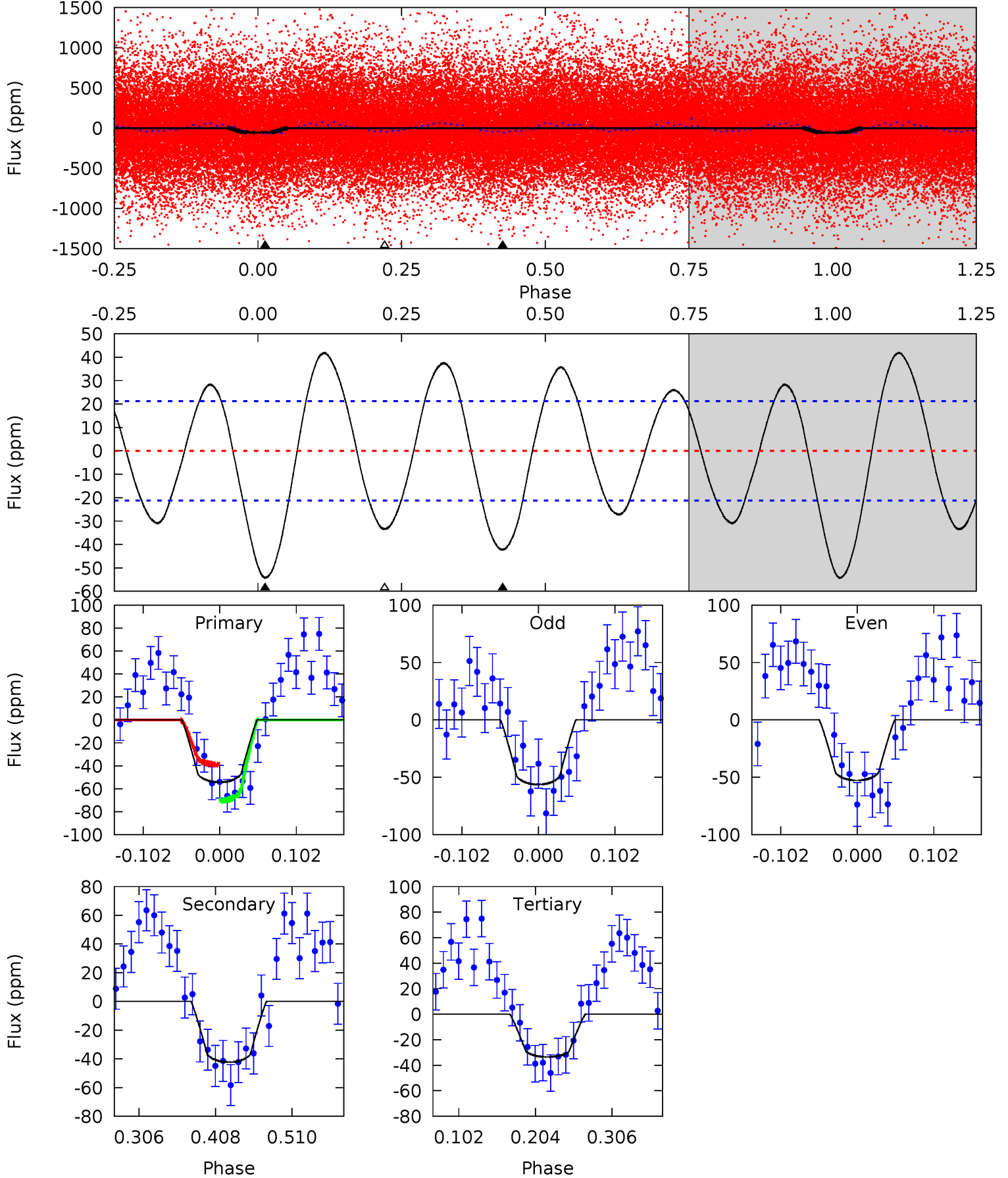
TCE 003340360-01 P= 0.949352 Days $T_0=131.892805$ (BKJD)



DV Model-Shift Uniqueness Test

003340360-01, P = 0.949331 Days, E = 130.944968 Days

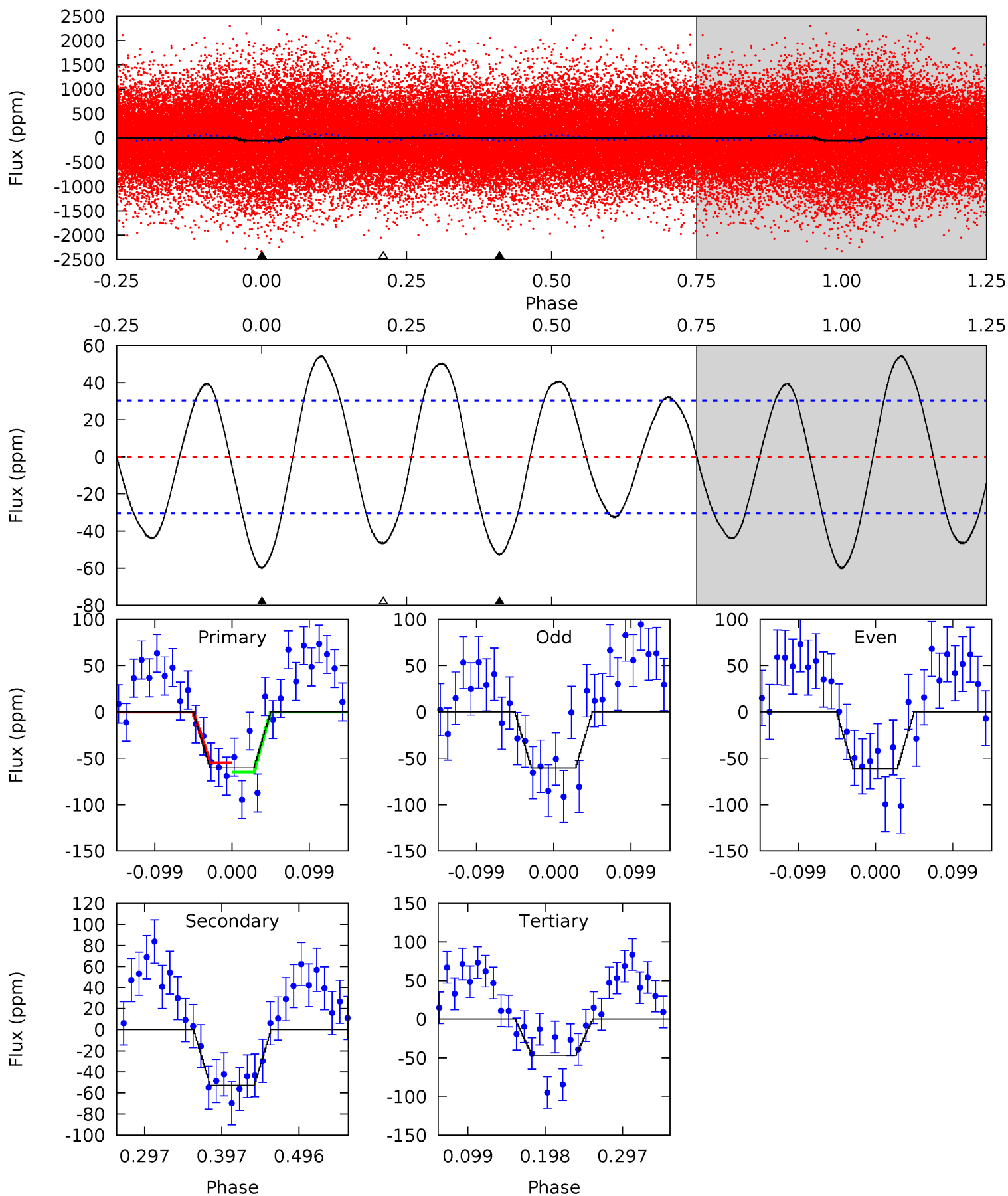
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	9.07	7.18	0	4.56	1.64	4.82	4.47	11.7	1.88	9.07	0.38	1.07	0.44	3.39



Alt Model-Shift Uniqueness Test

003340360-01, P = 0.949352 Days, E = 130.943453 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.07	7.95	7.01	0	4.57	1.65	4.49	2.06	9.07	0.94	7.95	0.04	0.88	0.47	0.75



Stellar Parameters For KIC 003340360

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7522^{+210}_{-330}	$4.225^{+0.073}_{-0.218}$	$0.210^{+0.150}_{-0.400}$	$1.645^{+0.586}_{-0.195}$	$1.676^{+0.205}_{-0.251}$	$0.530^{+0.164}_{-0.293}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-12%	+12%/-15%	+31%/-55%
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 003340360-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-42 ± 5	$1.05^{+0.56}_{-0.51}$	4045^{+311}_{-229}	8089^{+5315}_{-1762}	10^{+28}_{-6}
Alt.	-53 ± 7	$1.47^{+0.56}_{-0.54}$	4052^{+326}_{-235}	7063^{+2410}_{-1115}	$6.614^{+10.510}_{-3.294}$

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 $A_{obs} \gg 1.0$

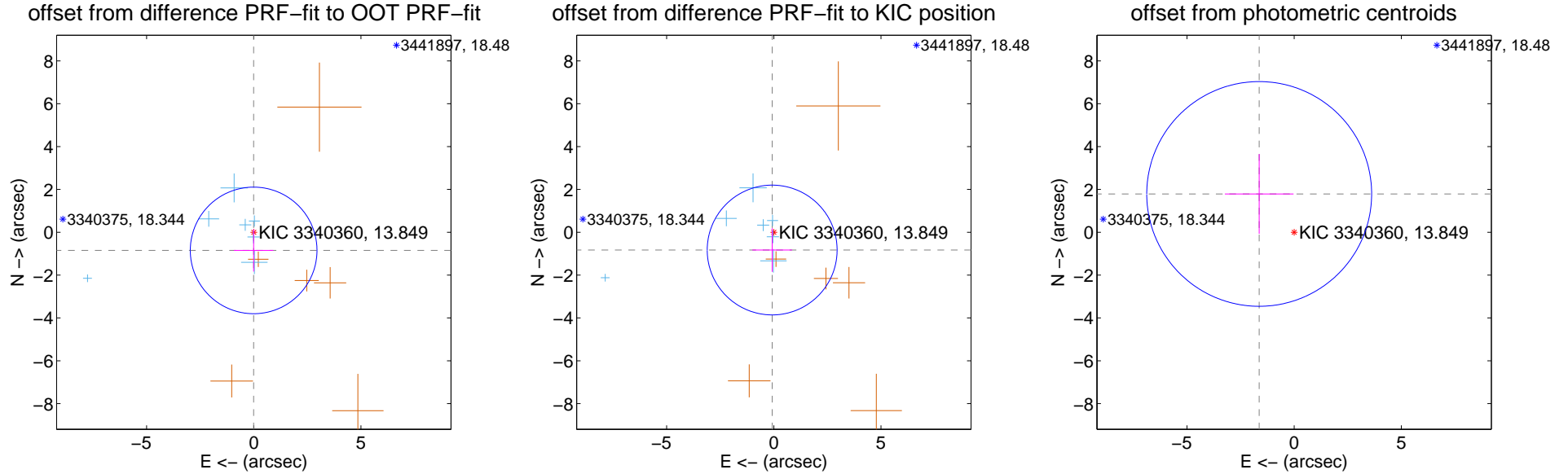
DV Centroid Data

Supplemental centroid analysis for 003340360-01. Kepler magnitude: 13.85. Transit SNR 3.81

There are 7 quarters with good PRF difference image offsets

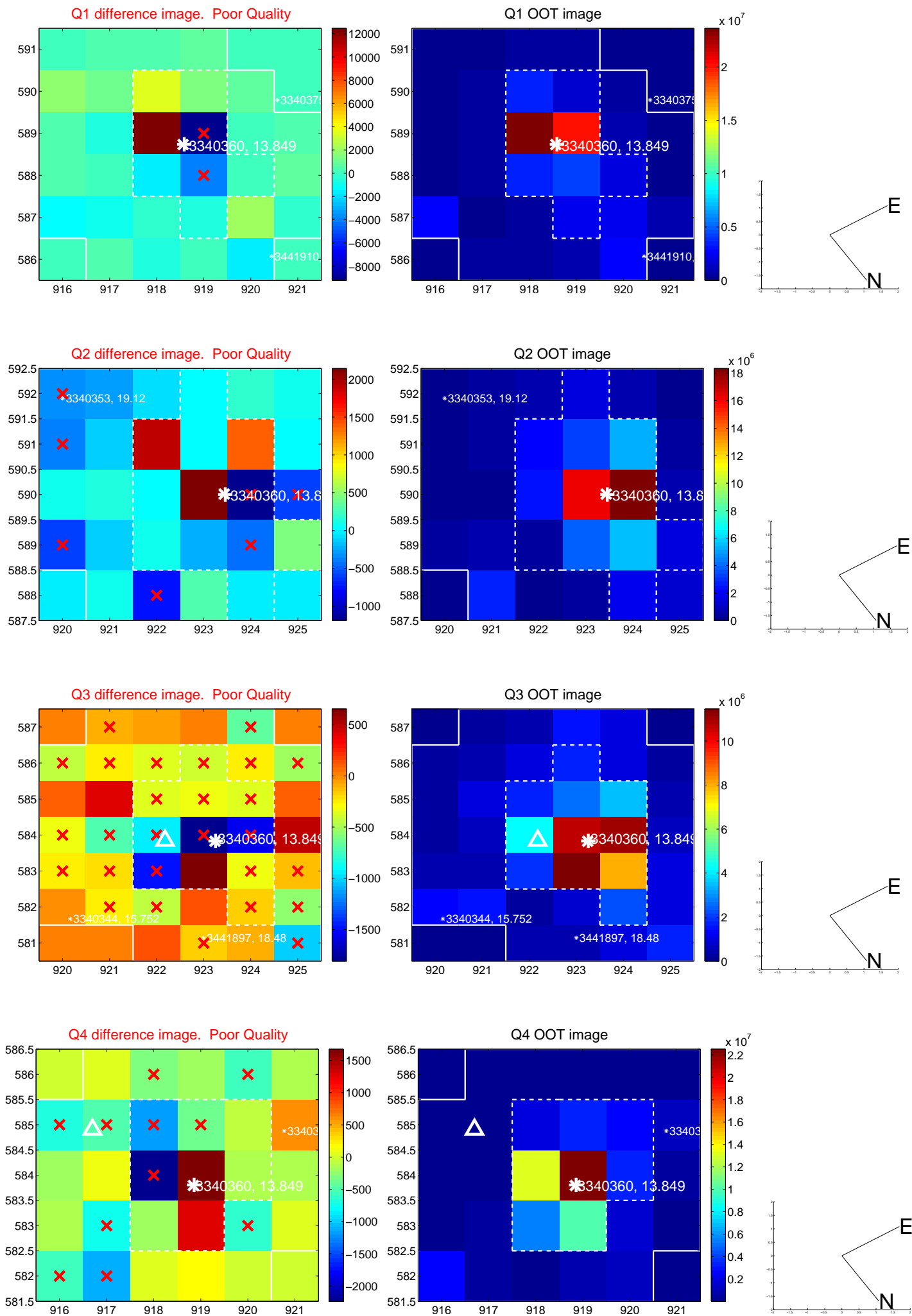
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.848 ± 0.985	0.86	0.006 ± 0.919	-0.848 ± 0.985
PRF-fit source offset from KIC position	0.833 ± 1.010	0.82	0.077 ± 0.928	-0.830 ± 1.021
photometric centroid source offset	2.42 ± 1.75	1.38	1.63 ± 1.60	1.79 ± 1.86

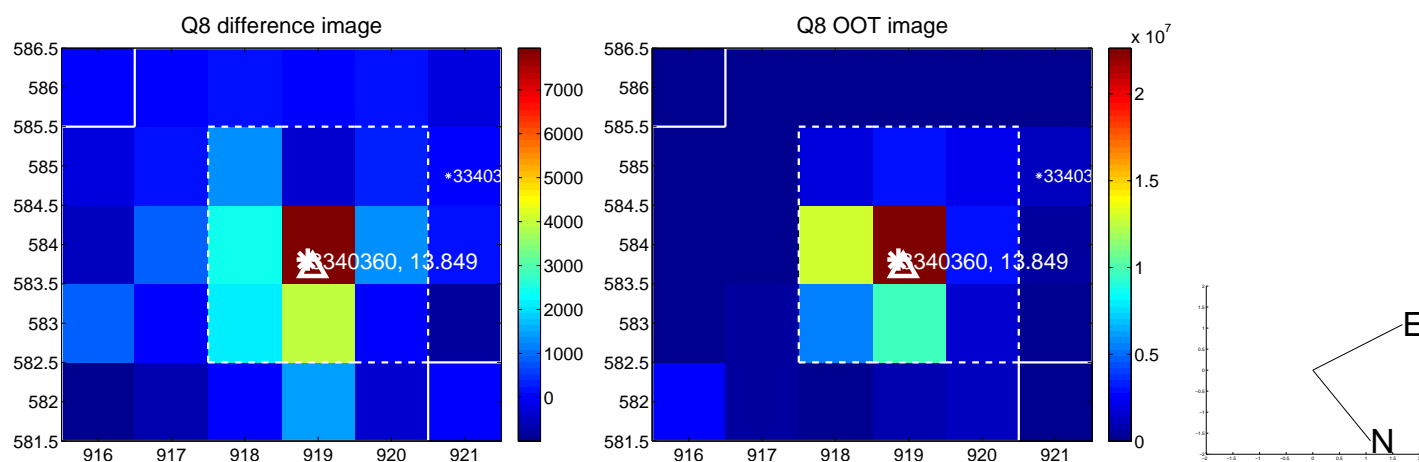
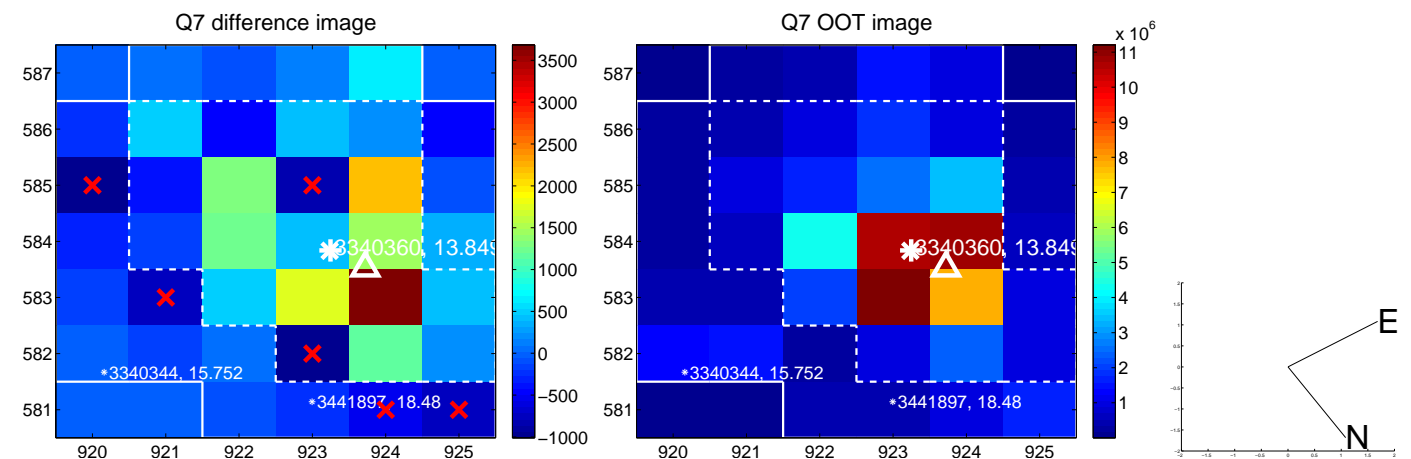
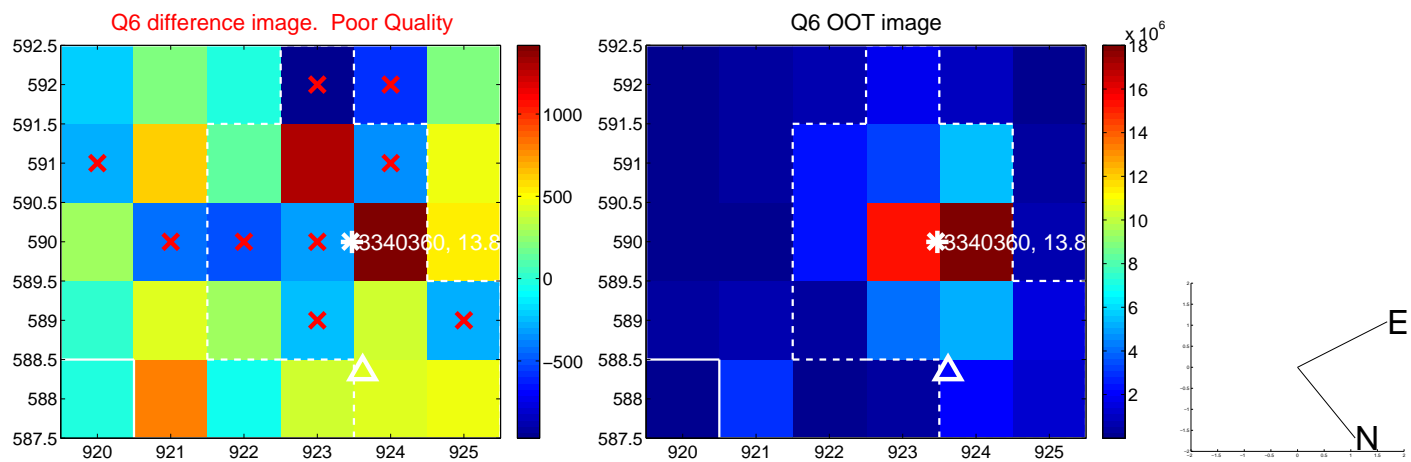
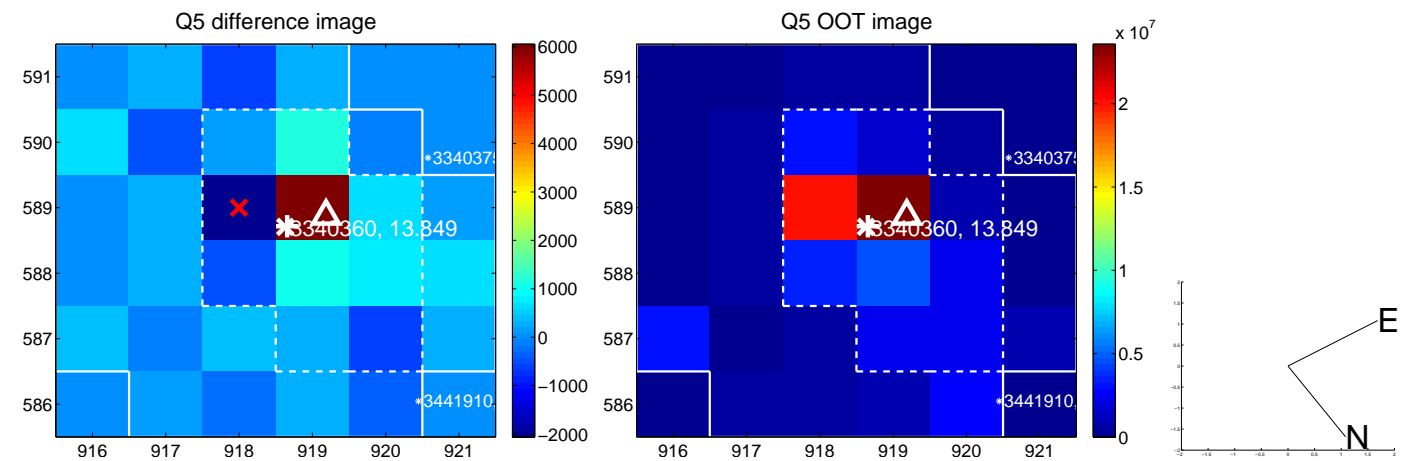


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

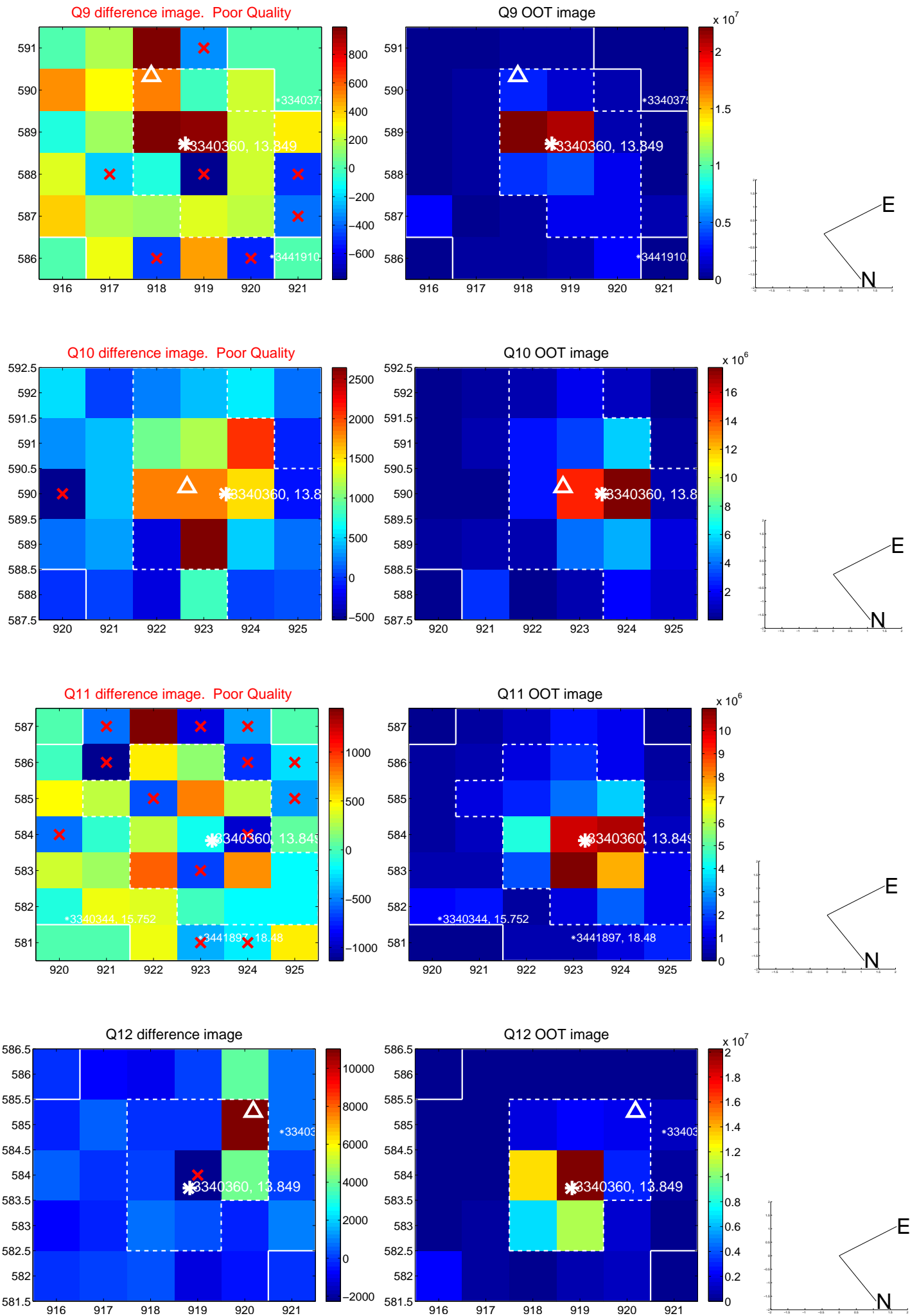
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



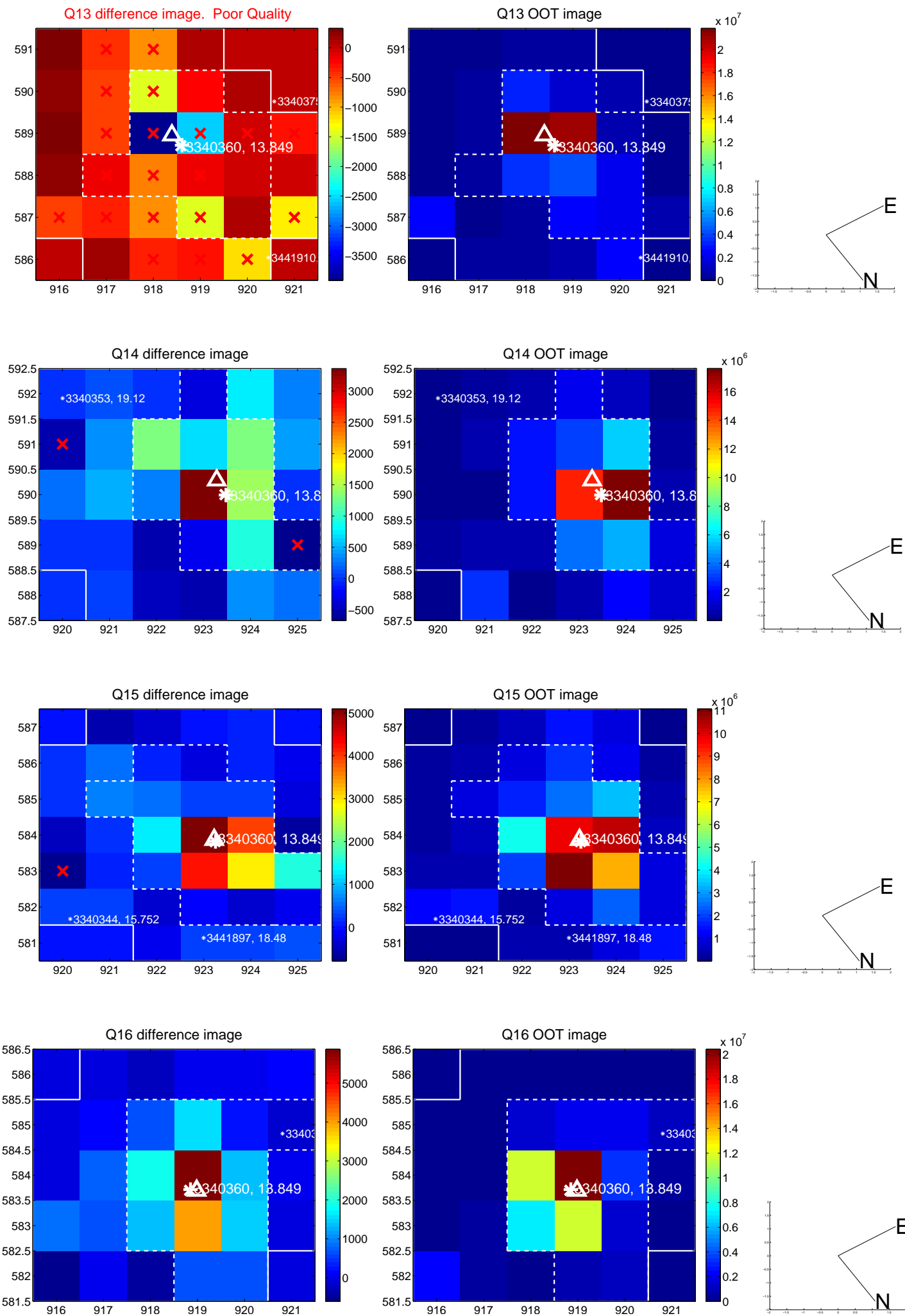
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



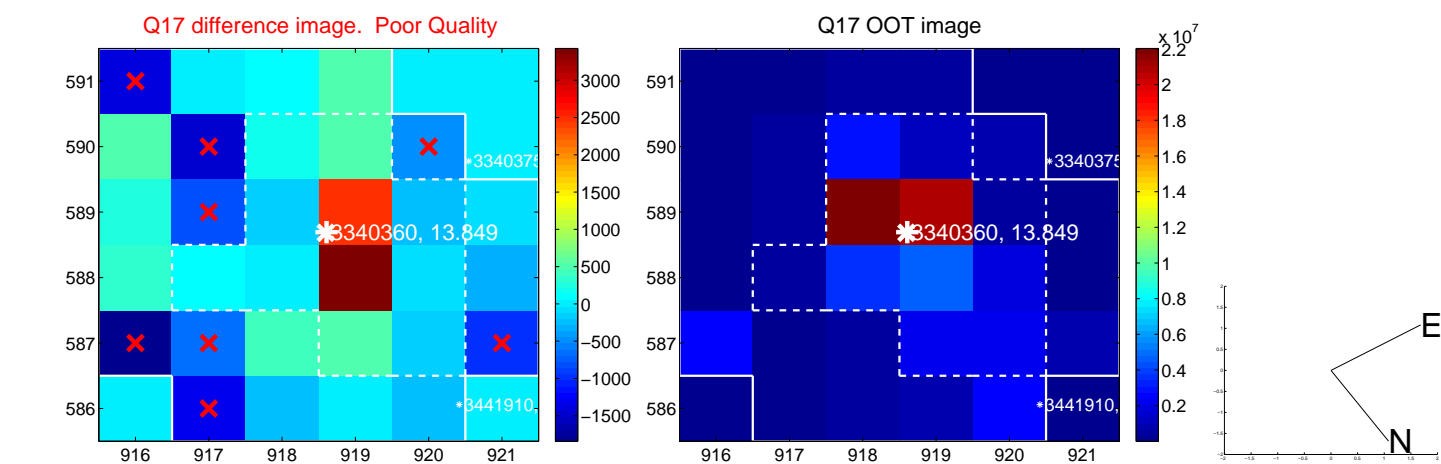
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



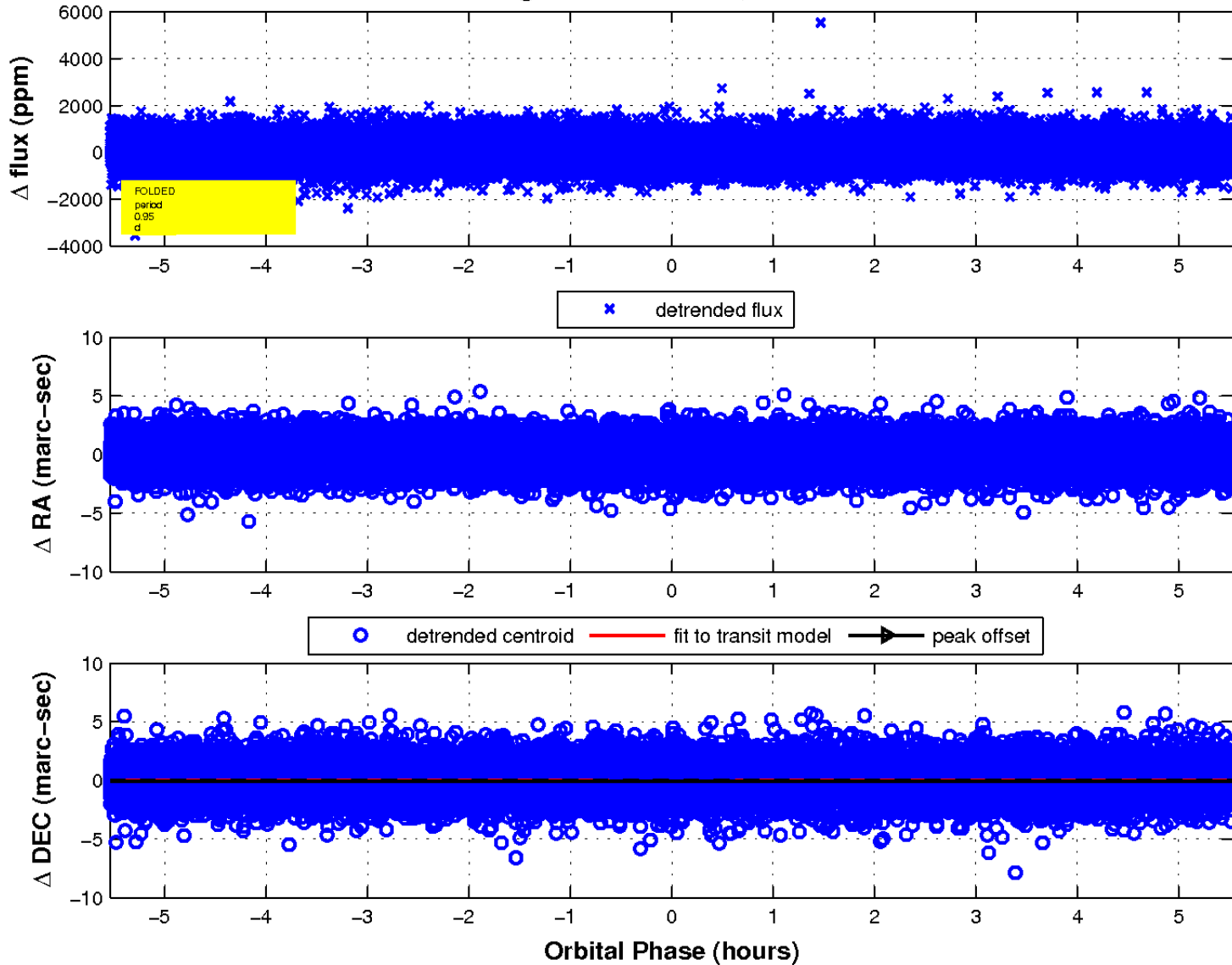
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

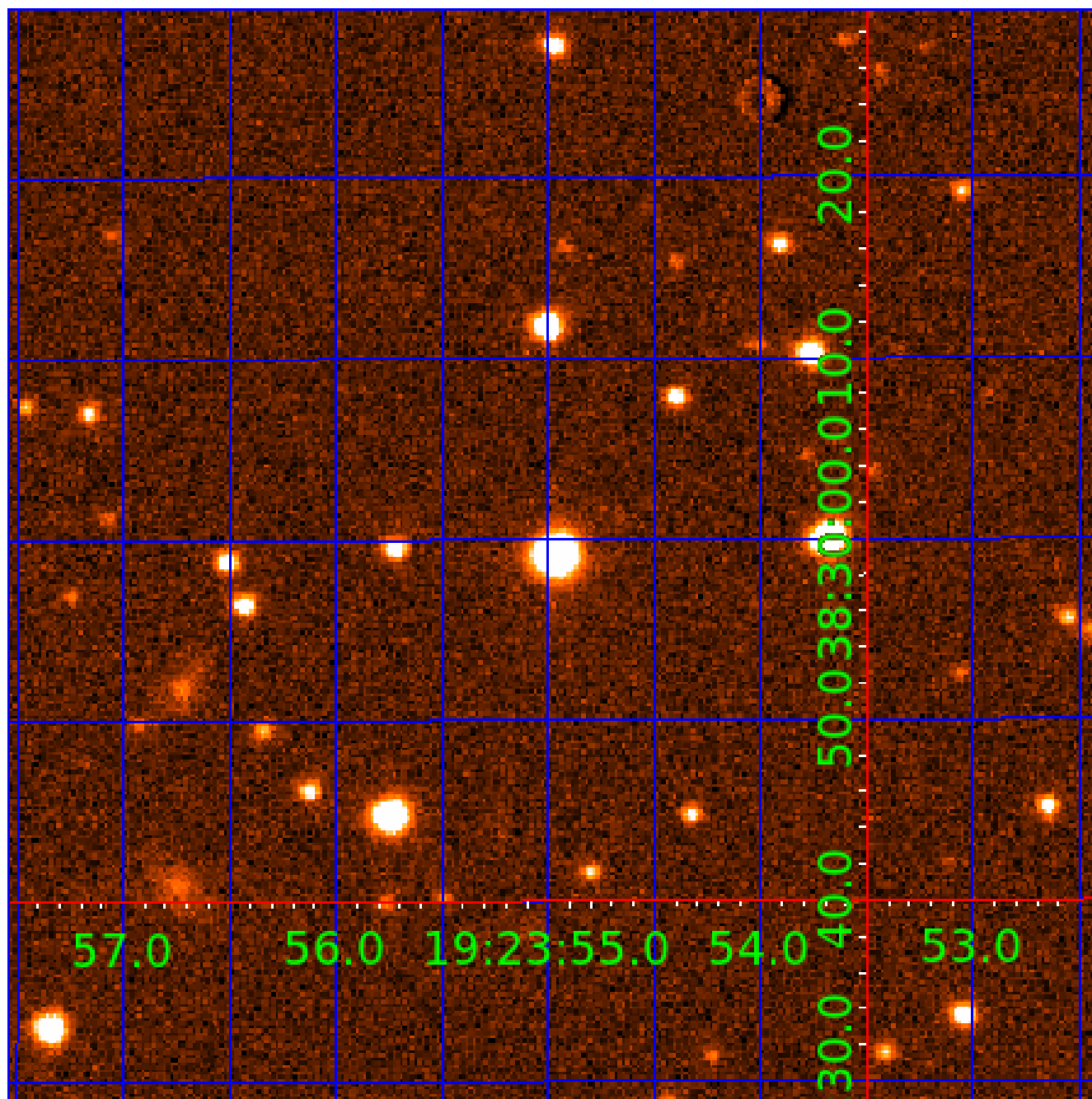


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 003340360

Q1-17 DR25 TCE Parameters

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003340360-02	OBS	No	0.949335	132.292905	48.5	2.037	9.5	7.0	1.65	7522	1.32	15504.06
003340360-03	OBS	No	1.296151	131.796513	92.7	7.750	8.0	10.0	1.65	7522	1.61	10236.01
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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003340360-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
003340360-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
003340360-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

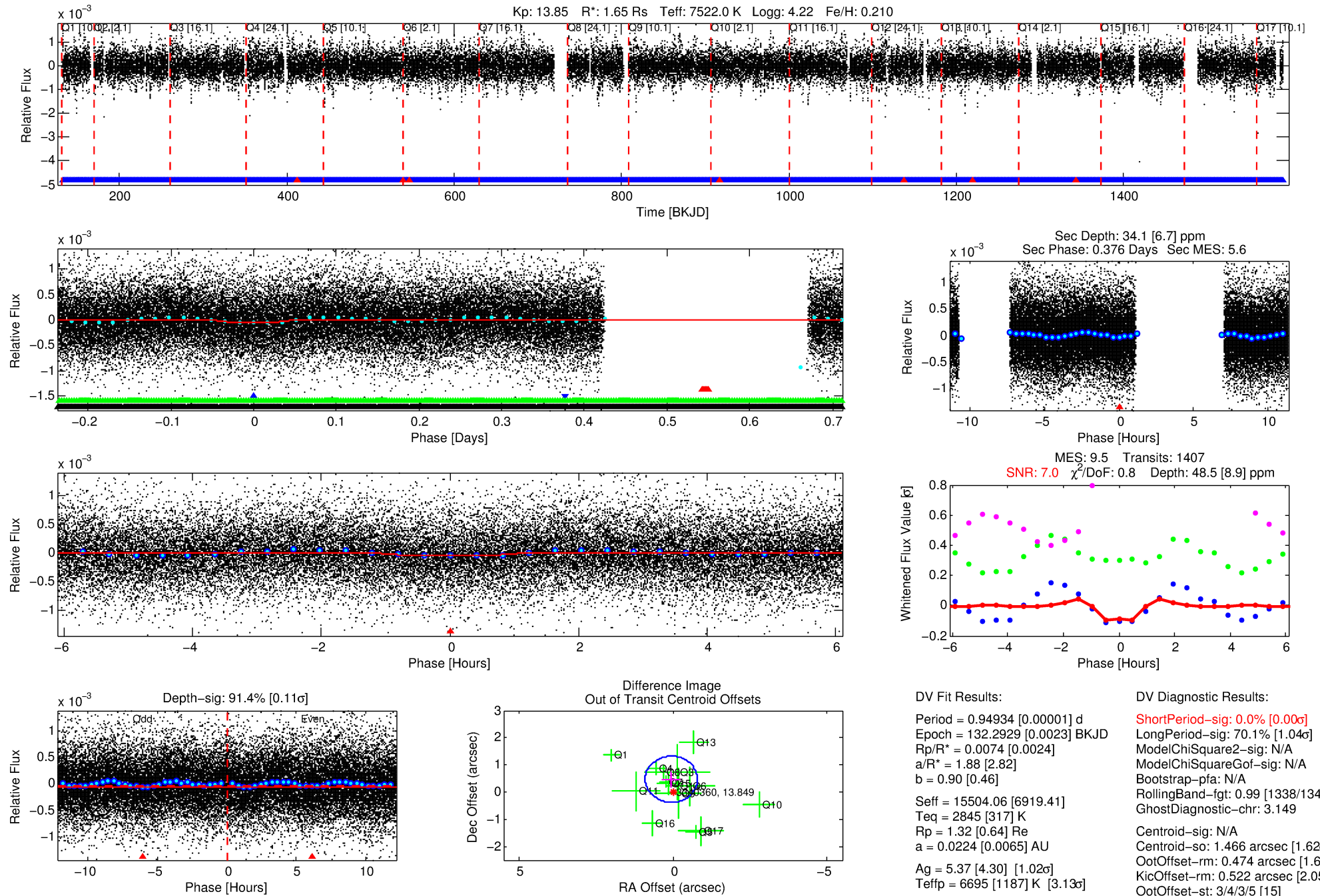
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003340360-02

No Significant Match Found

DV One-Page Summary

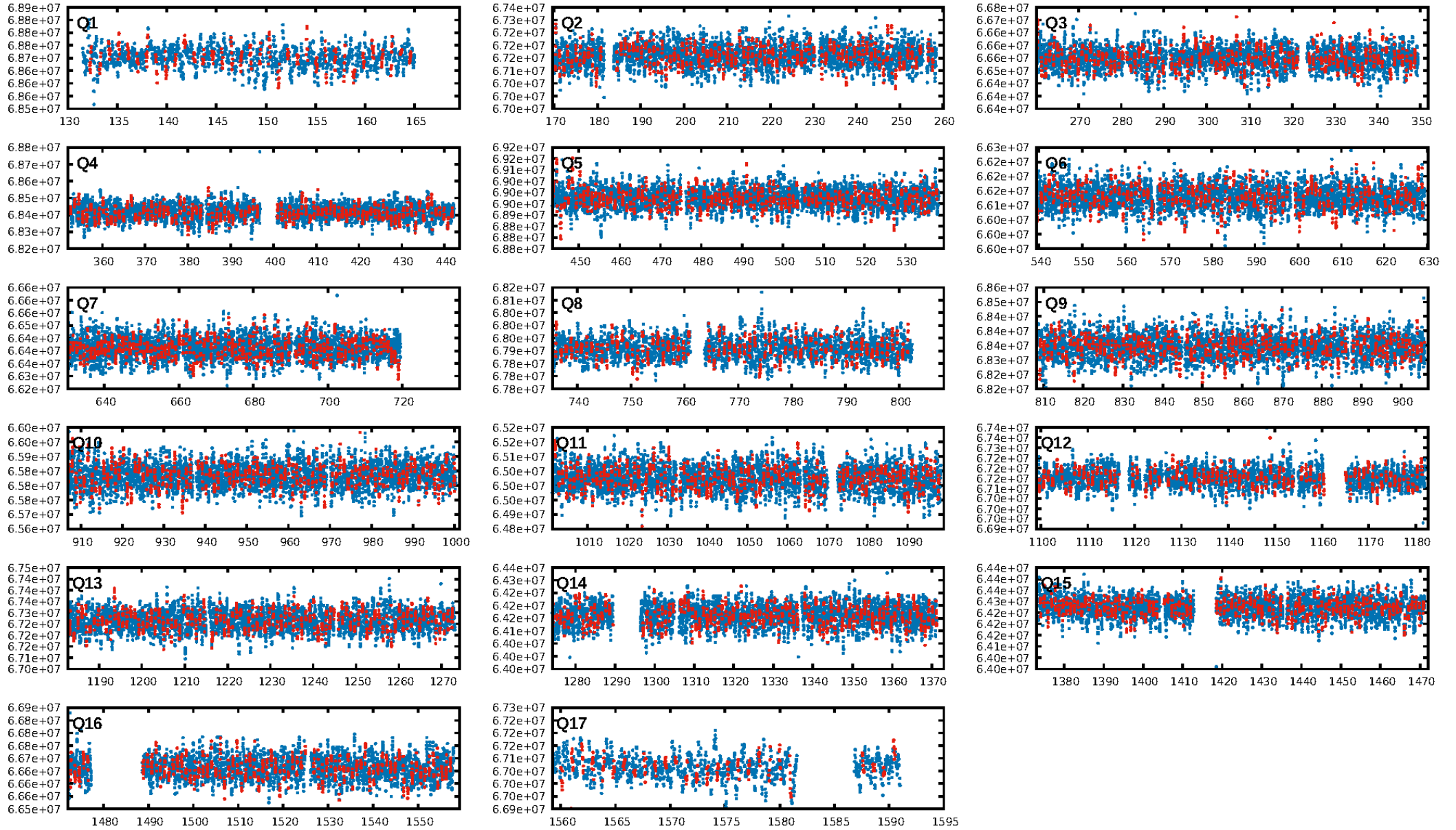
KIC: 3340360 Candidate: 2 of 4 Period: 0.949 d



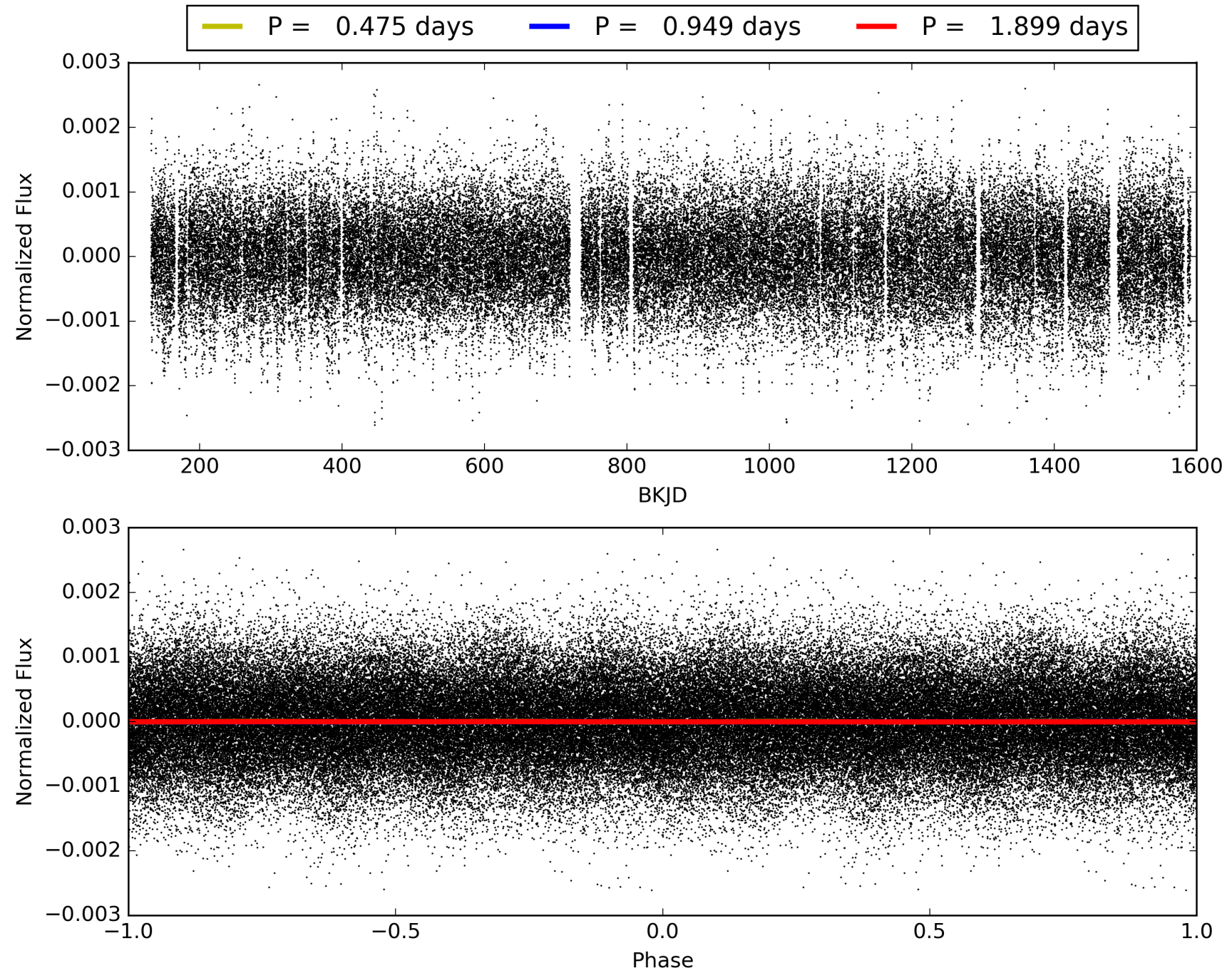
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:36:25 Z

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

TCE 003340360-02, PDC Light Curves

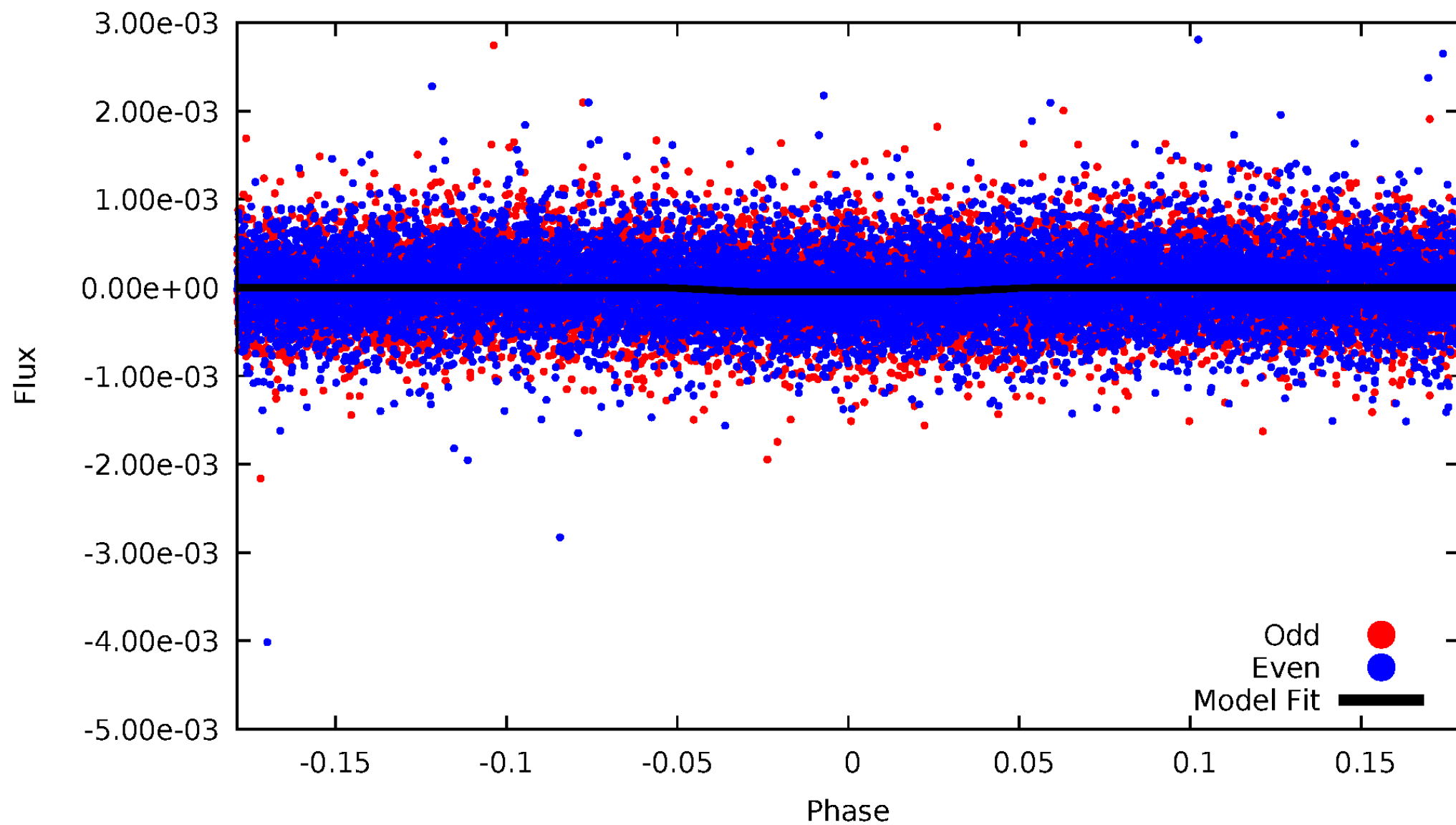


TCE 003340360-02



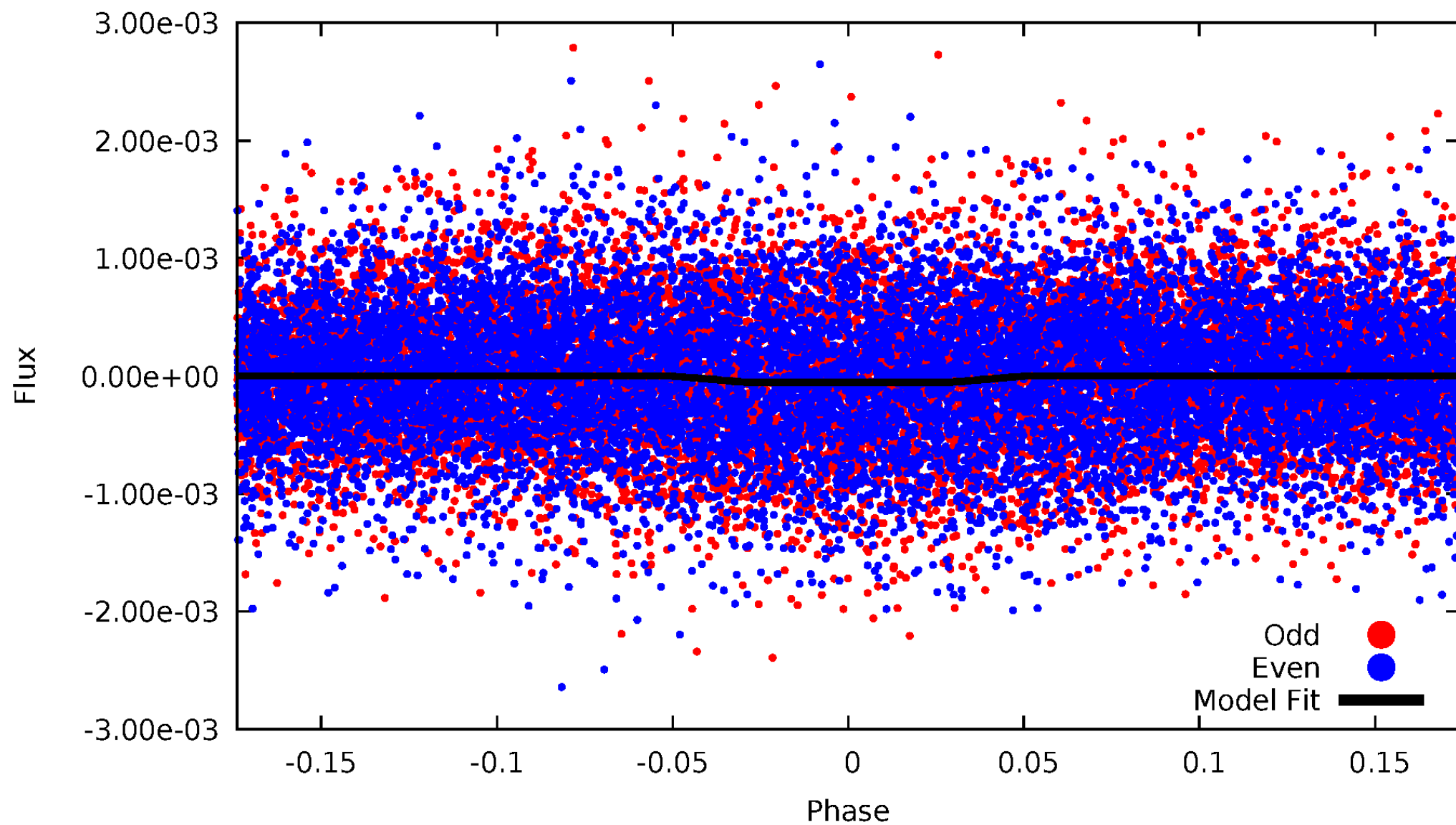
DV Odd/Even

TCE 003340360-02



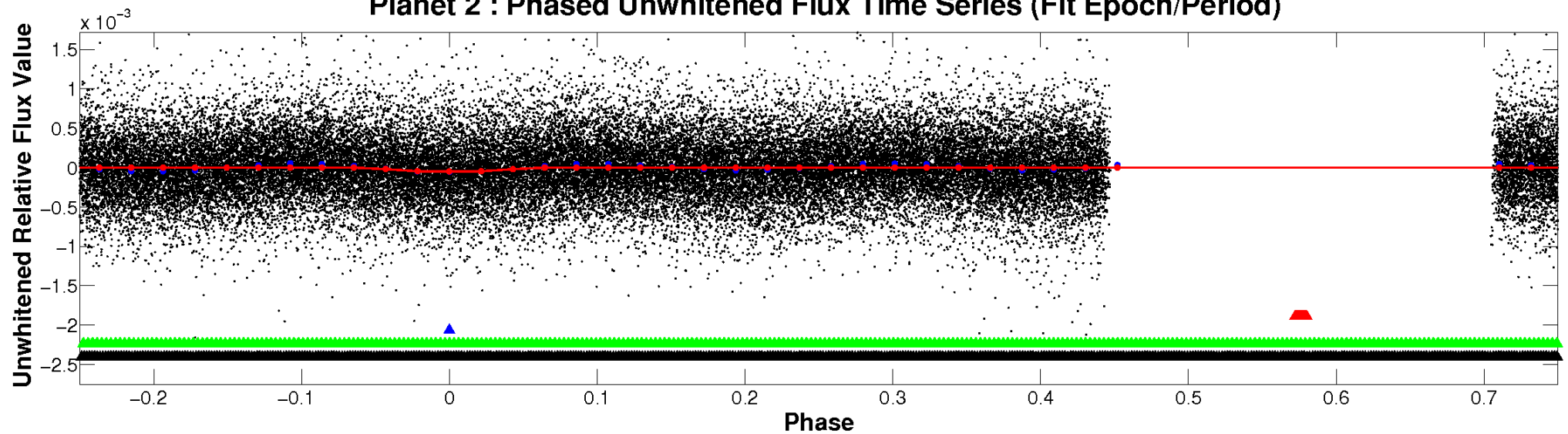
ALT Odd/Even

TCE 003340360-02

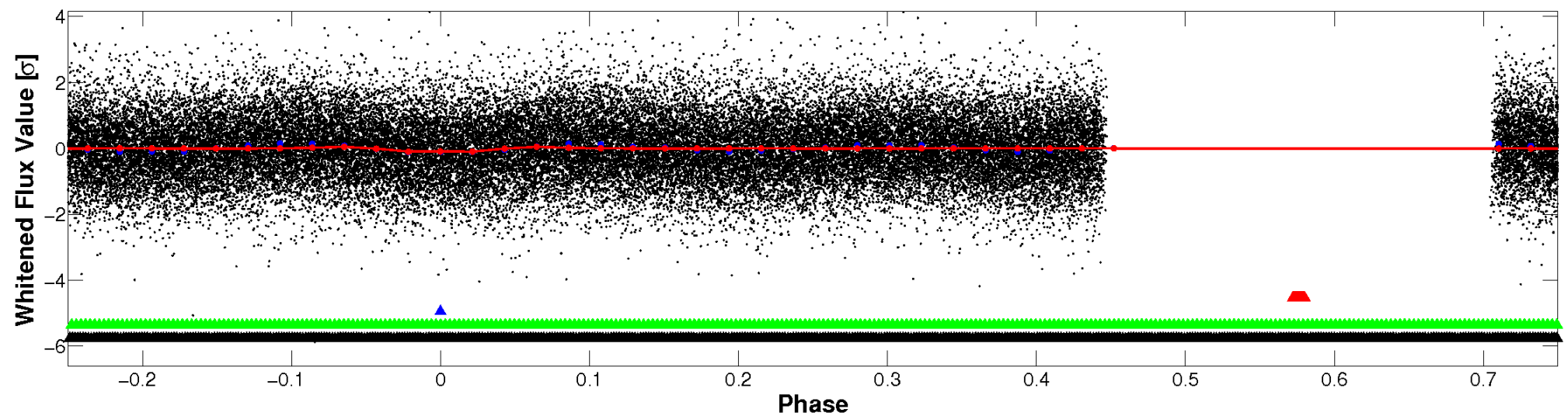


Non-Whitened Vs. Whitened Light Curve

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

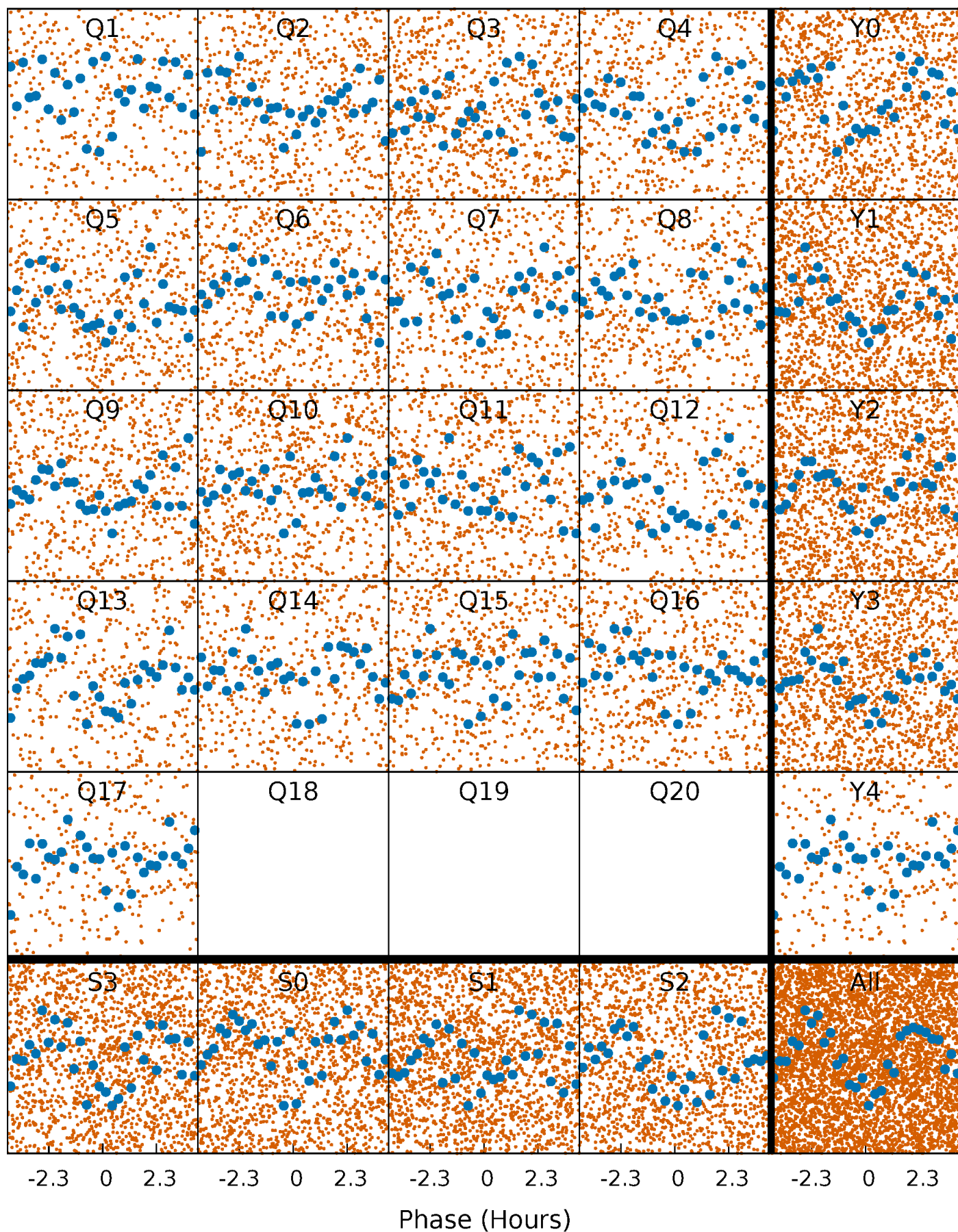


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



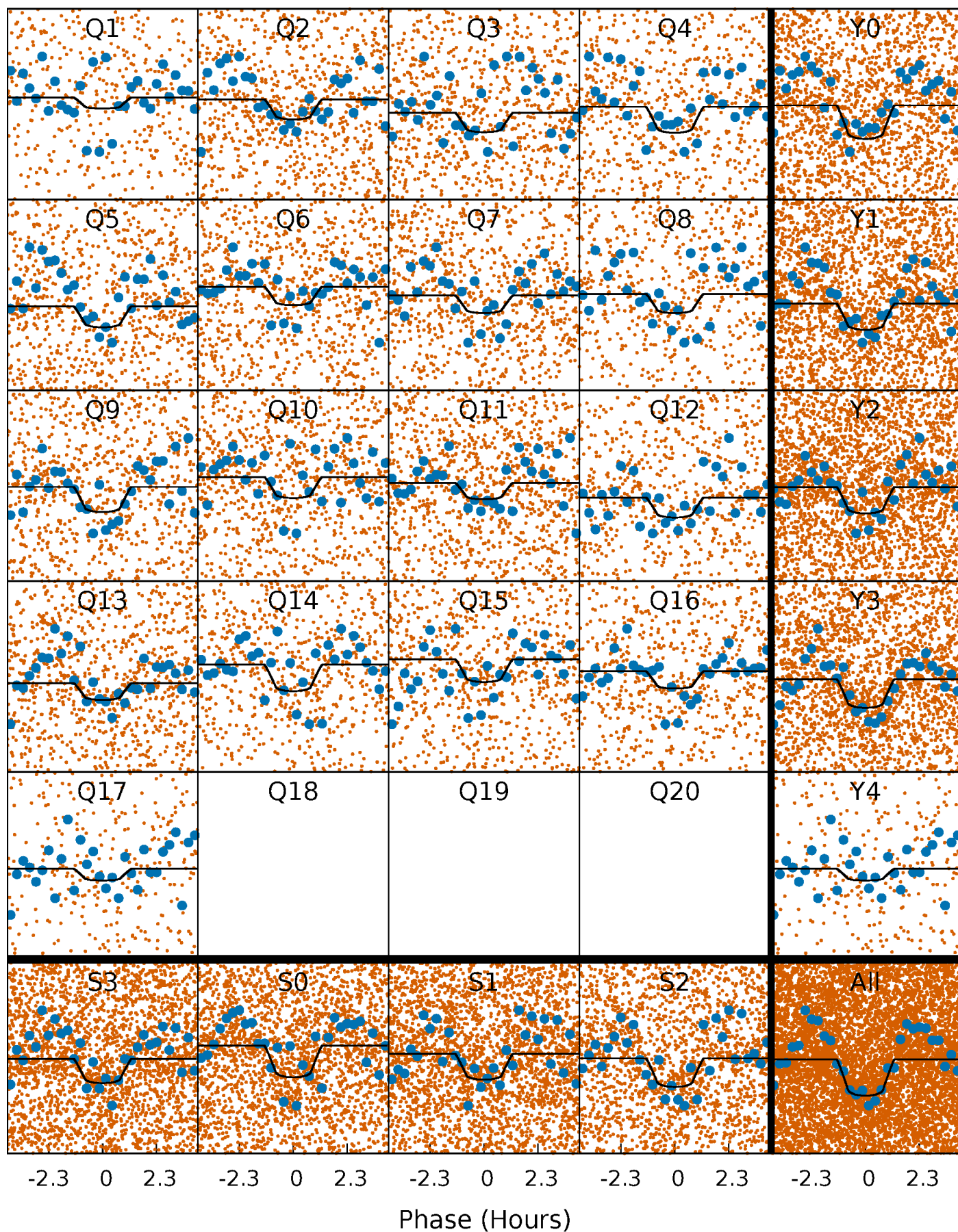
PDC Quarter-Phased Transit Curves

TCE 003340360-02 P= 0.949335 Days $T_0=132.292905$ (BKJD)



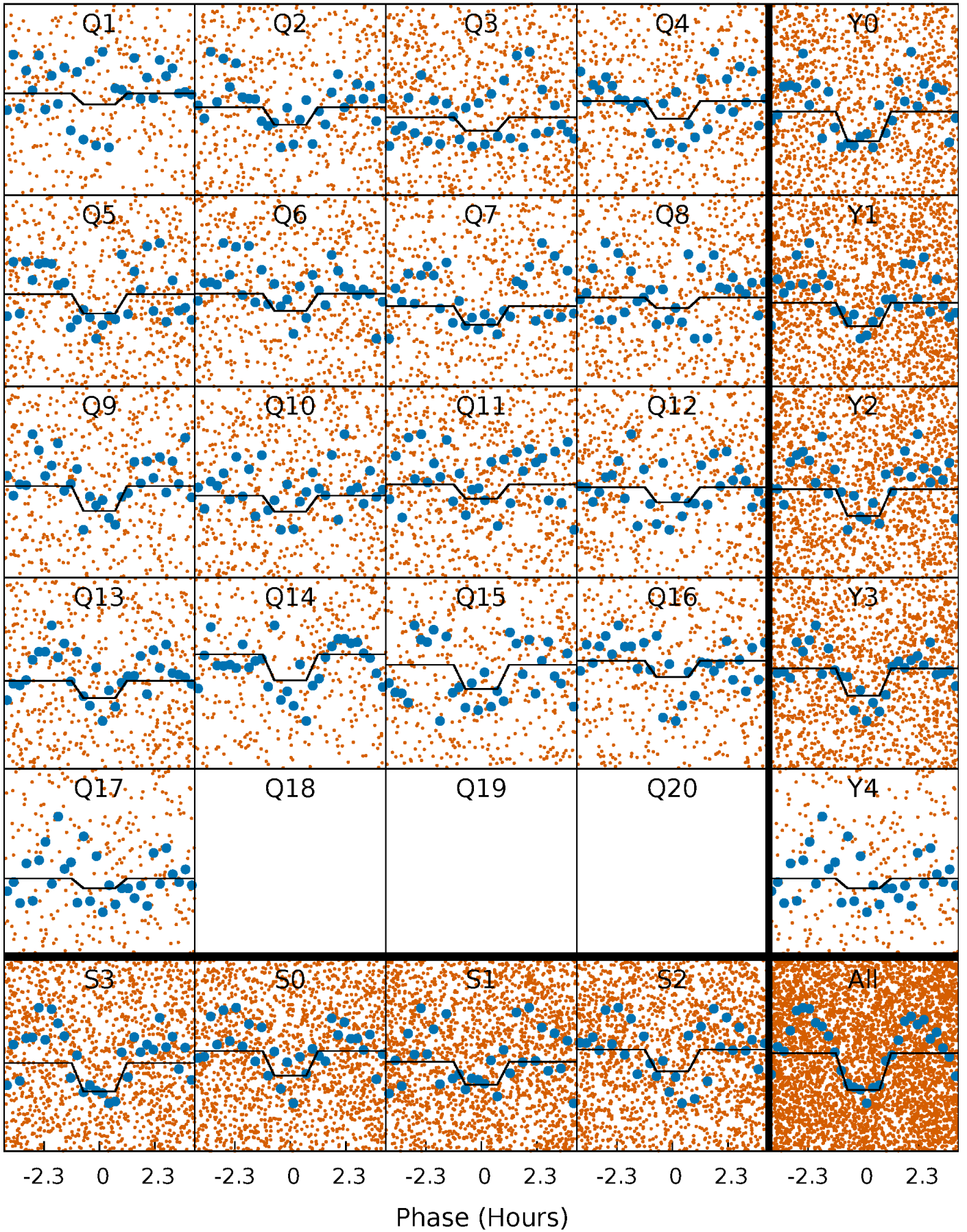
DV Quarter-Phased Transit Curves

TCE 003340360-02 P= 0.949335 Days $T_0=132.292905$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

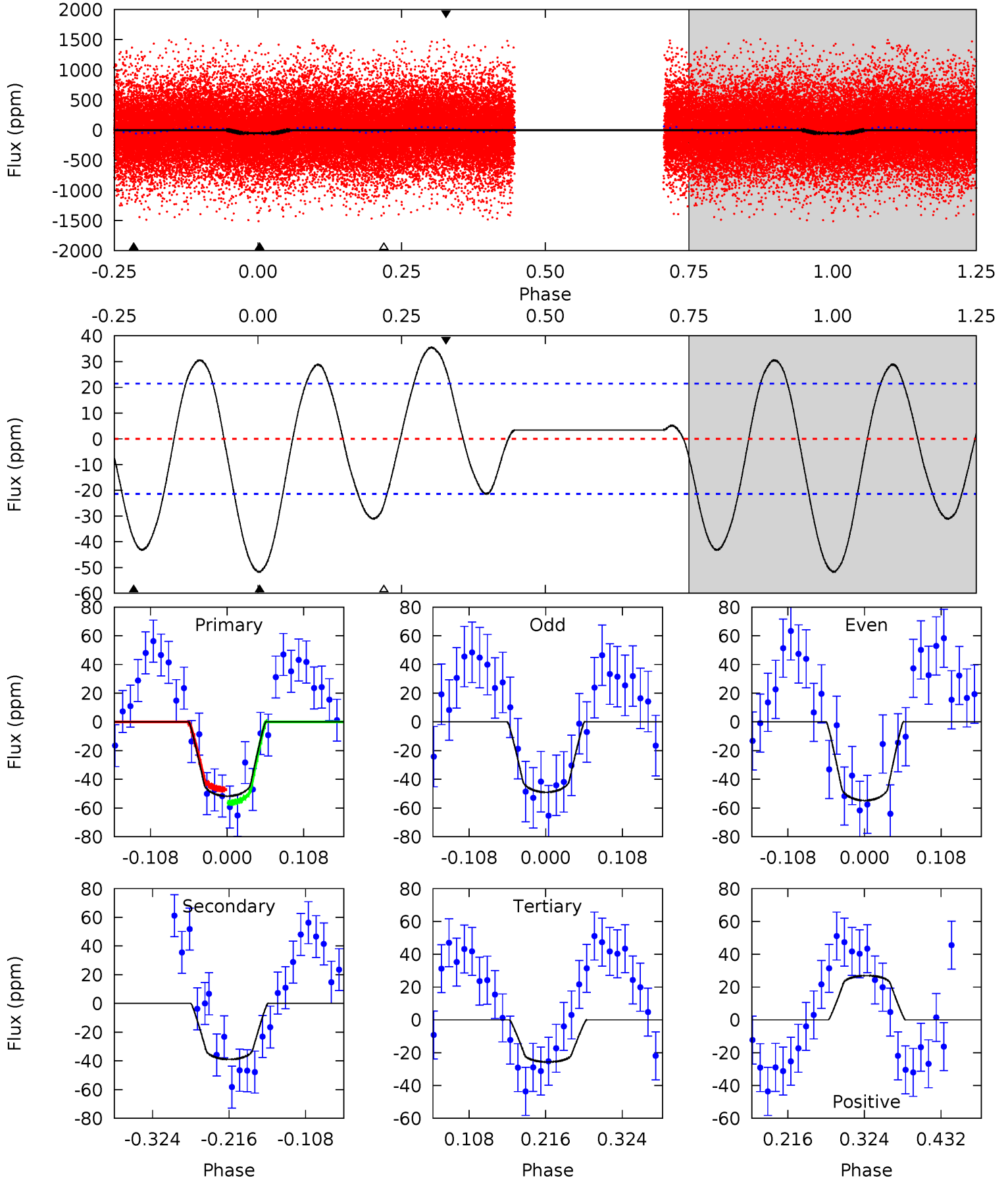
TCE 003340360-02 P= 0.949338 Days $T_0=132.292824$ (BKJD)



DV Model-Shift Uniqueness Test

003340360-02, P = 0.949335 Days, E = 131.343570 Days

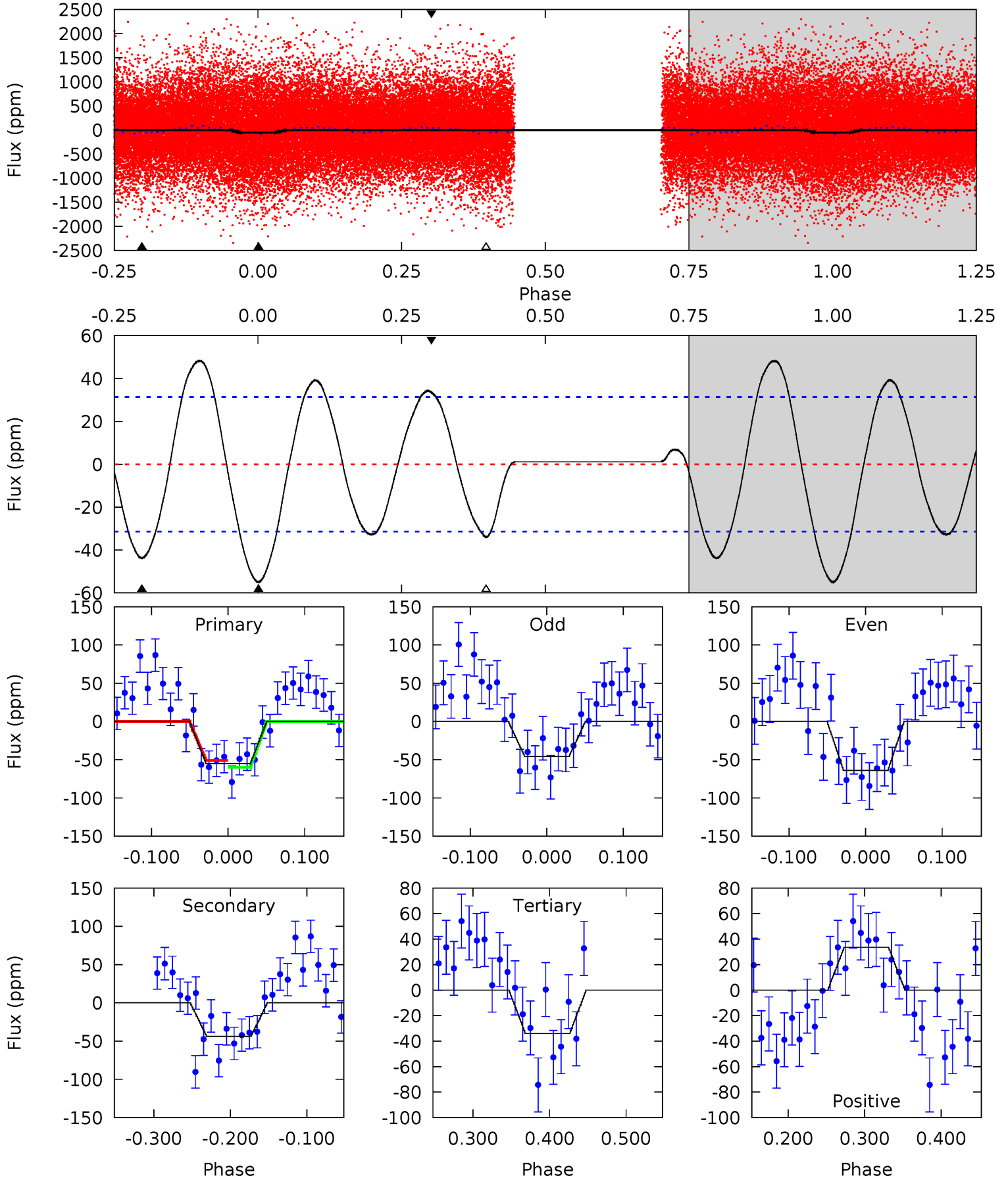
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	8.26	5.45	5.72	4.55	1.61	4.19	5.53	5.26	2.81	2.54	0.61	0.86	0.41	1.00



Alt Model-Shift Uniqueness Test

003340360-02, P = 0.949338 Days, E = 131.343486 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.02	6.38	4.95	4.89	4.56	1.65	3.32	3.06	3.12	1.42	1.48	1.32	0.85	0.47	0.60



Stellar Parameters For KIC 003340360

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7522^{+210}_{-330}	$4.225^{+0.073}_{-0.218}$	$0.210^{+0.150}_{-0.400}$	$1.645^{+0.586}_{-0.195}$	$1.676^{+0.205}_{-0.251}$	$0.530^{+0.164}_{-0.293}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-12%	+12%/-15%	+31%/-55%
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 003340360-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-39 ± 5	$1.36^{+0.57}_{-0.46}$	4036^{+312}_{-225}	6749^{+1885}_{-1078}	$5.661^{+7.383}_{-2.878}$
Alt.	-44 ± 7	$1.37^{+0.50}_{-0.50}$	4041^{+326}_{-237}	6995^{+2096}_{-1023}	$6.475^{+9.011}_{-3.031}$

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 $A_{obs} \gg 1.0$

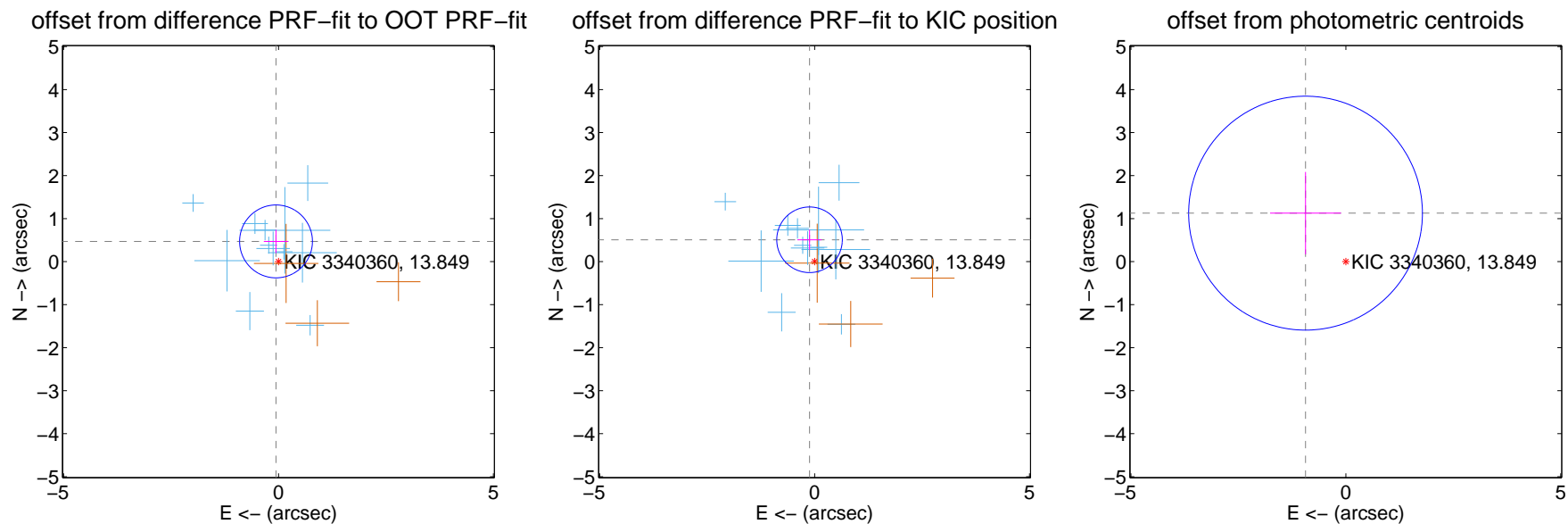
DV Centroid Data

Supplemental centroid analysis for 003340360-02. Kepler magnitude: 13.85. Transit SNR 7.04

There are 12 quarters with good PRF difference image offsets

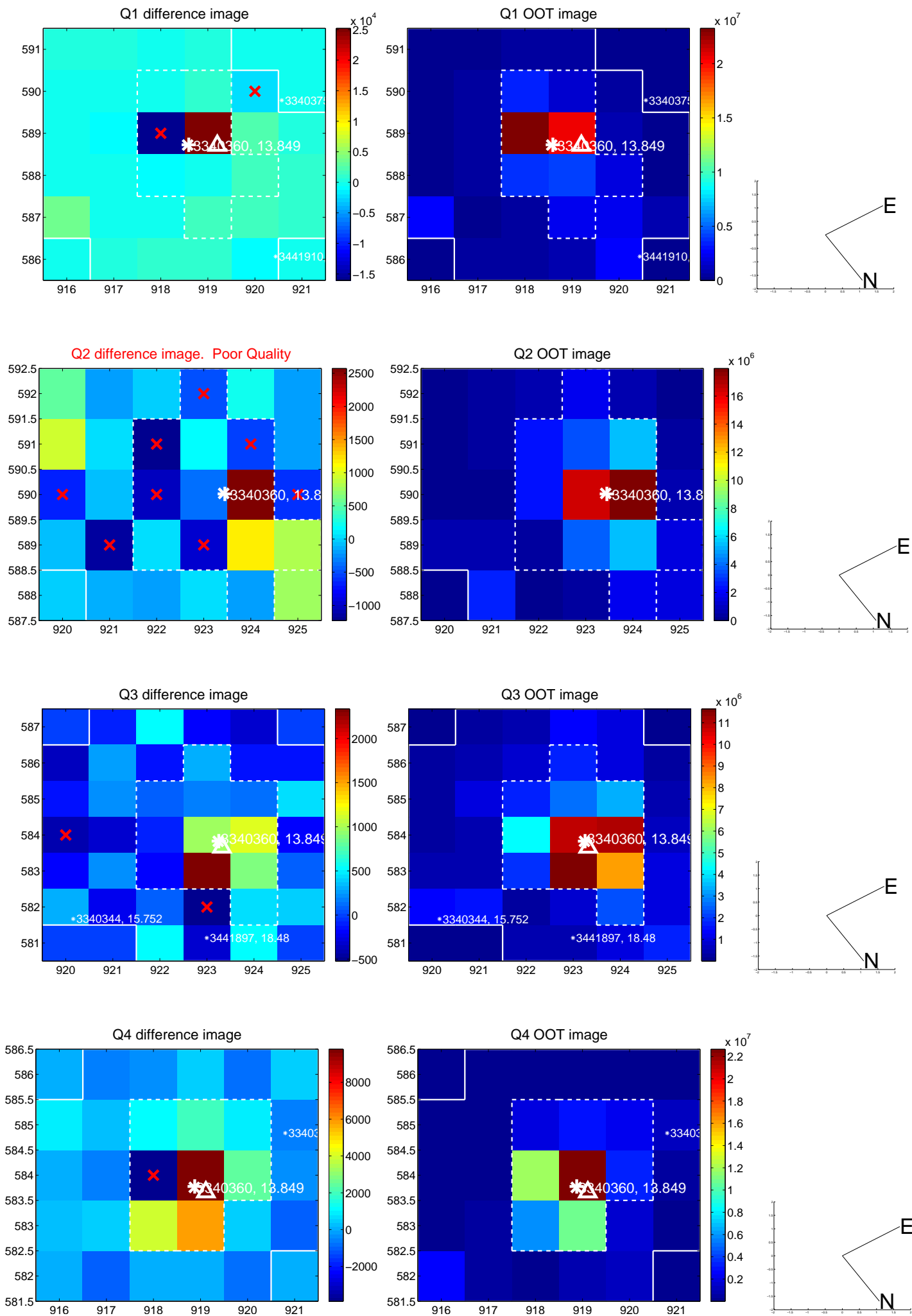
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.474 ± 0.282	1.68	0.058 ± 0.284	0.471 ± 0.273
PRF-fit source offset from KIC position	0.522 ± 0.254	2.05	0.118 ± 0.282	0.508 ± 0.234
photometric centroid source offset	1.47 ± 0.91	1.62	0.94 ± 0.83	1.13 ± 0.96

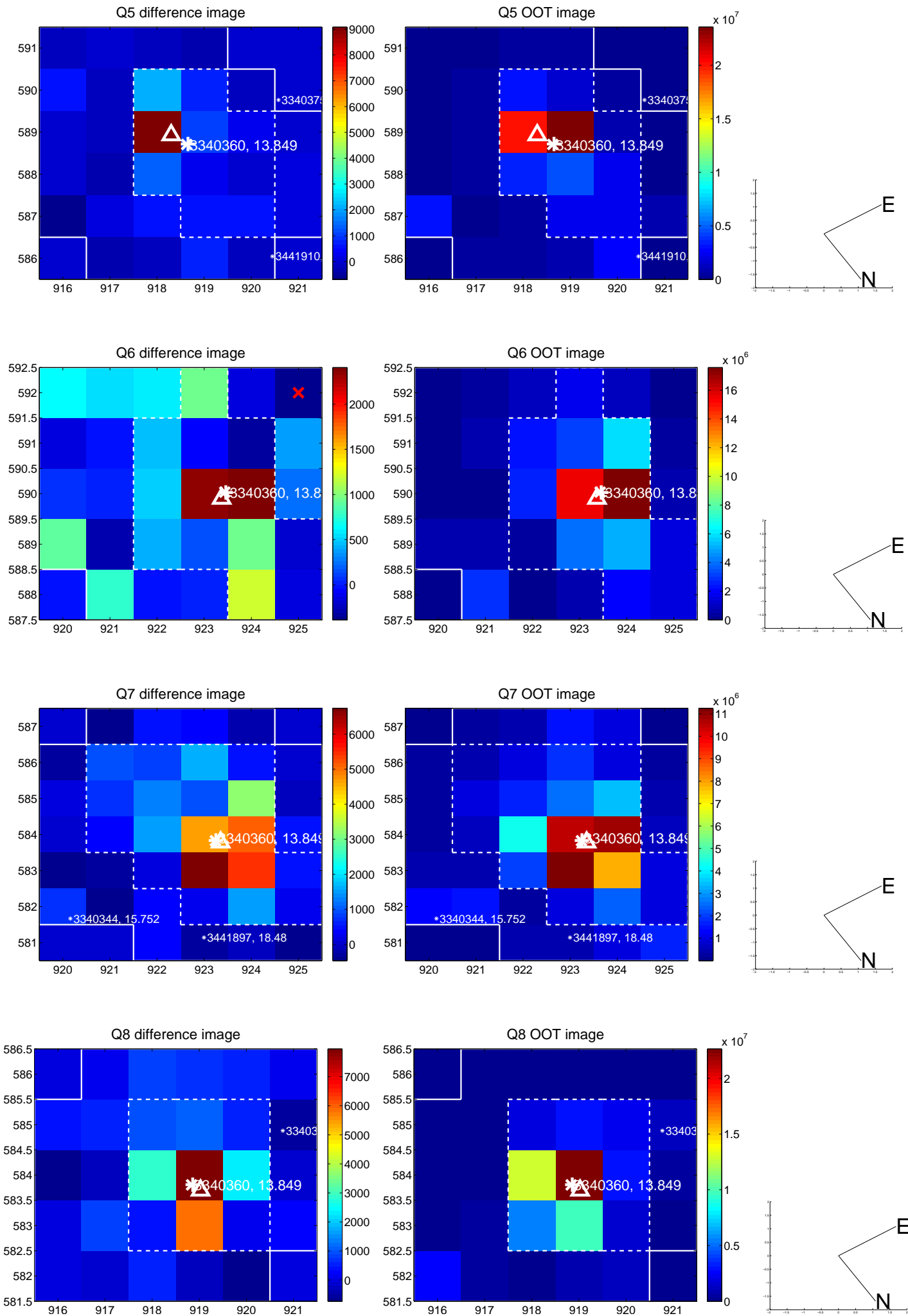


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

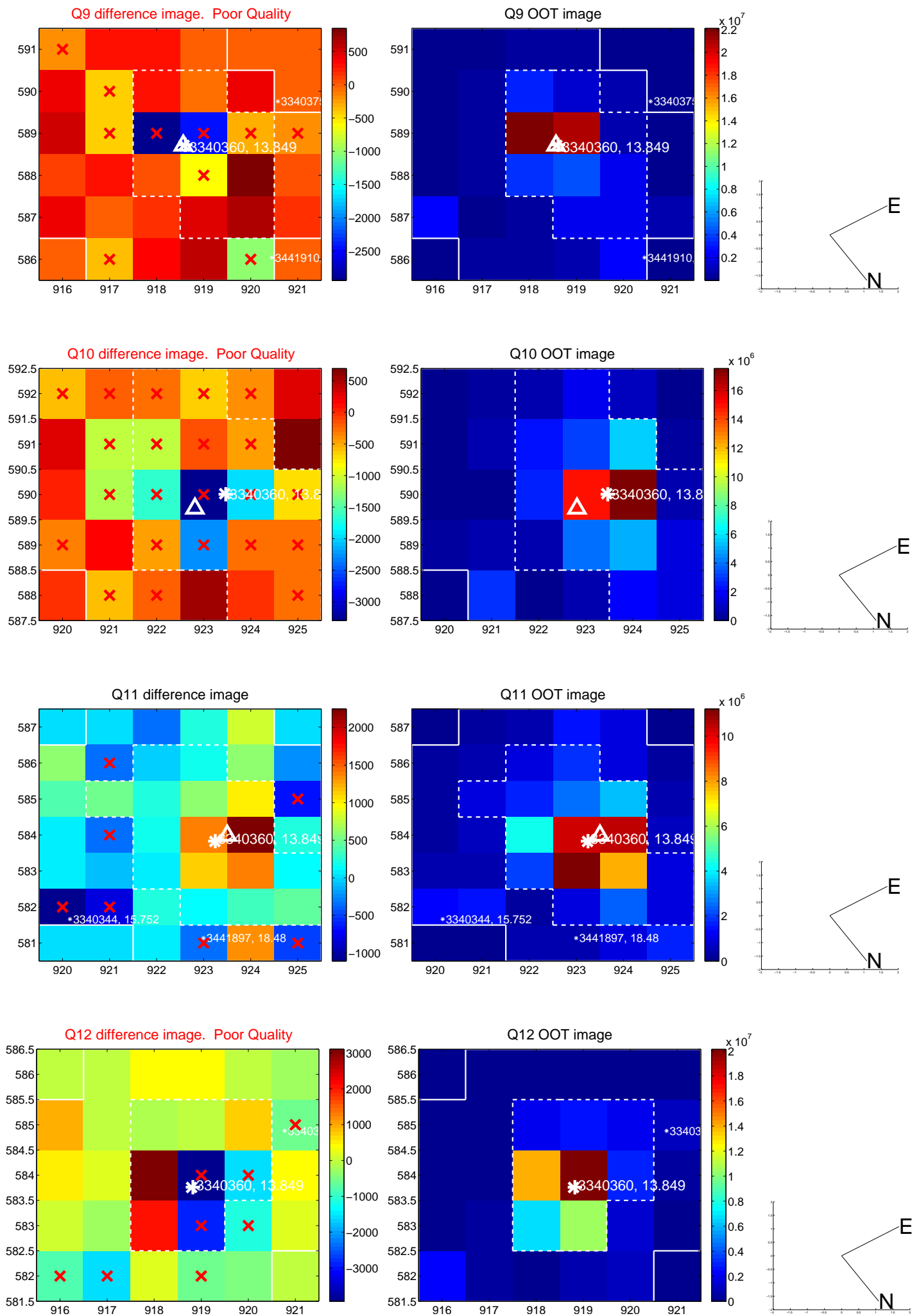
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



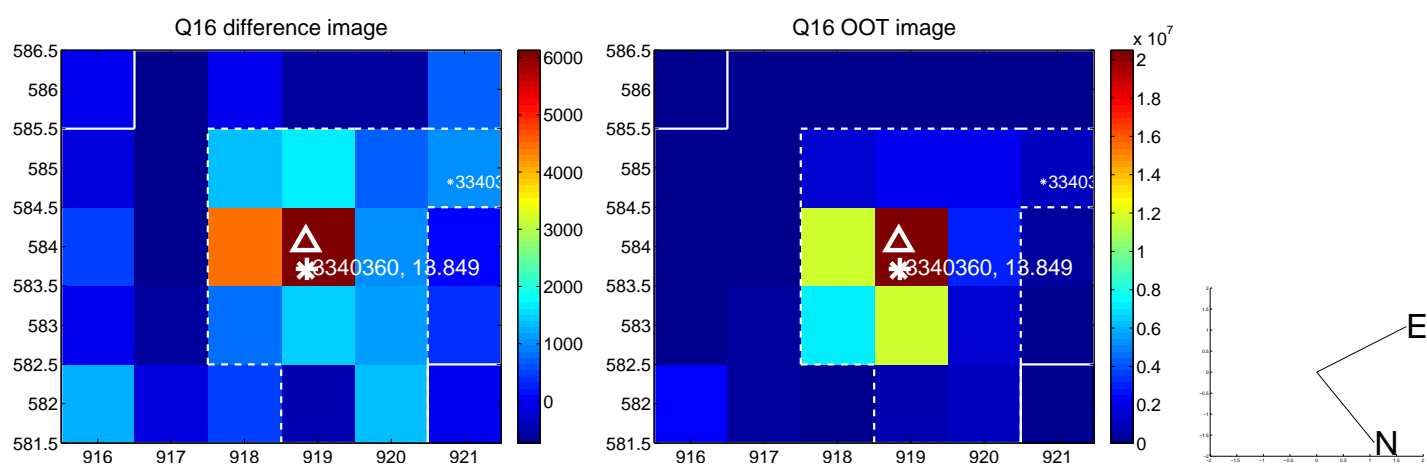
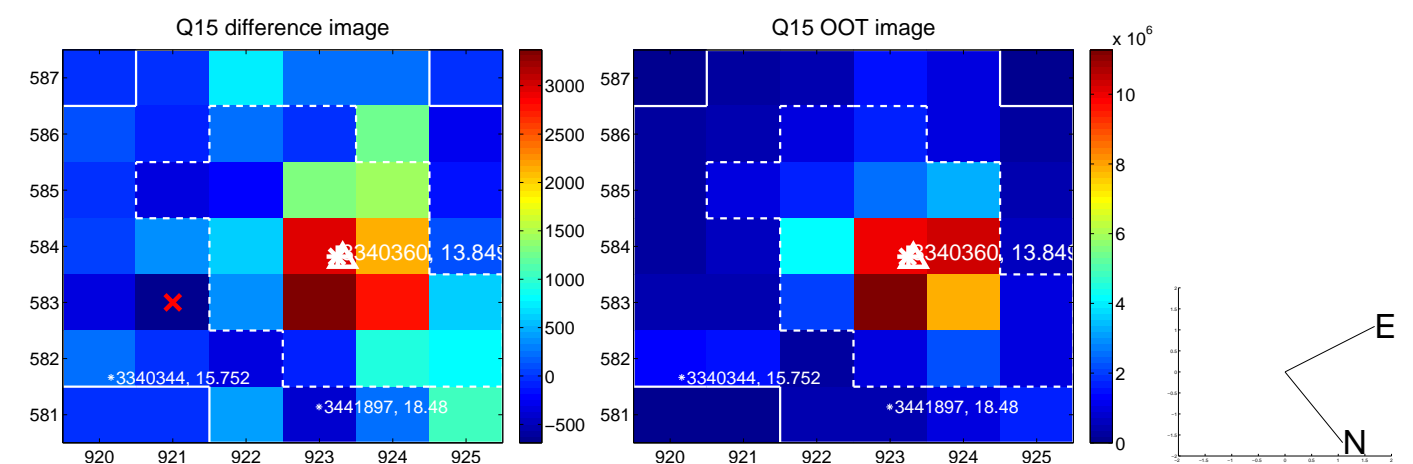
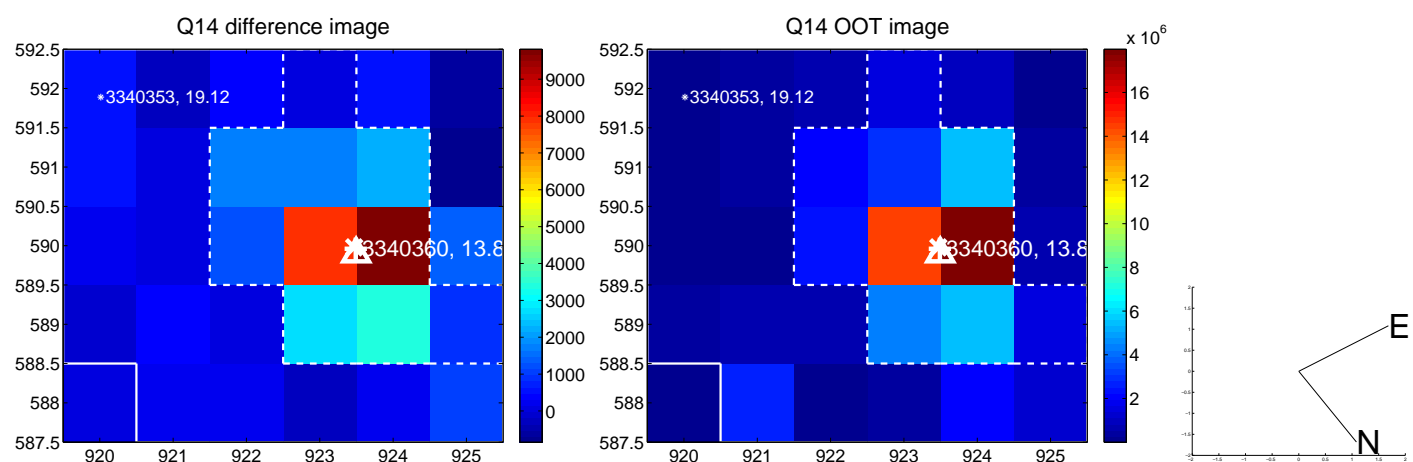
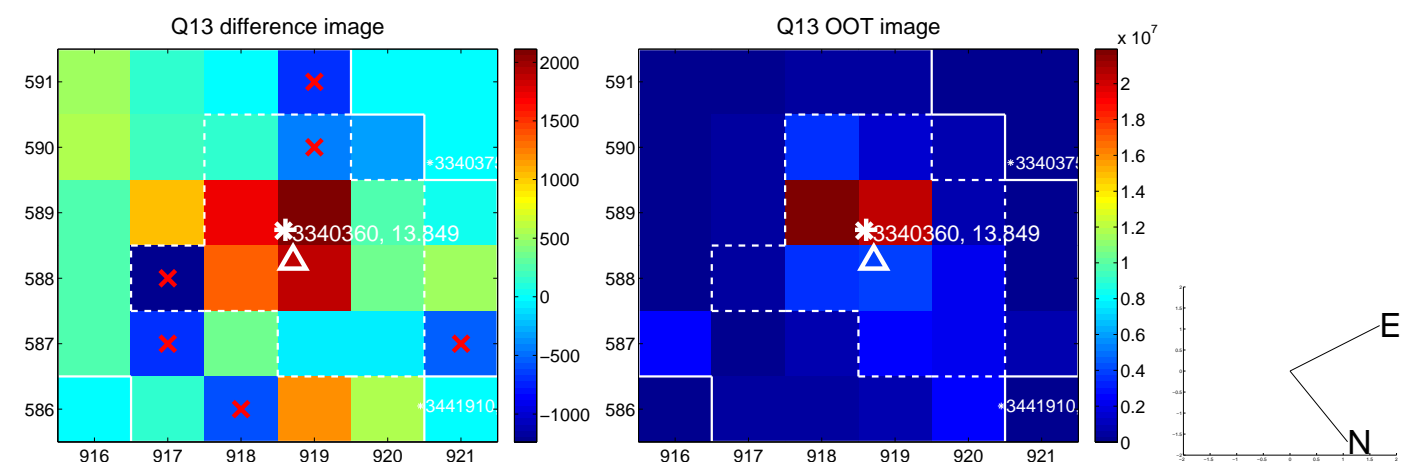
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



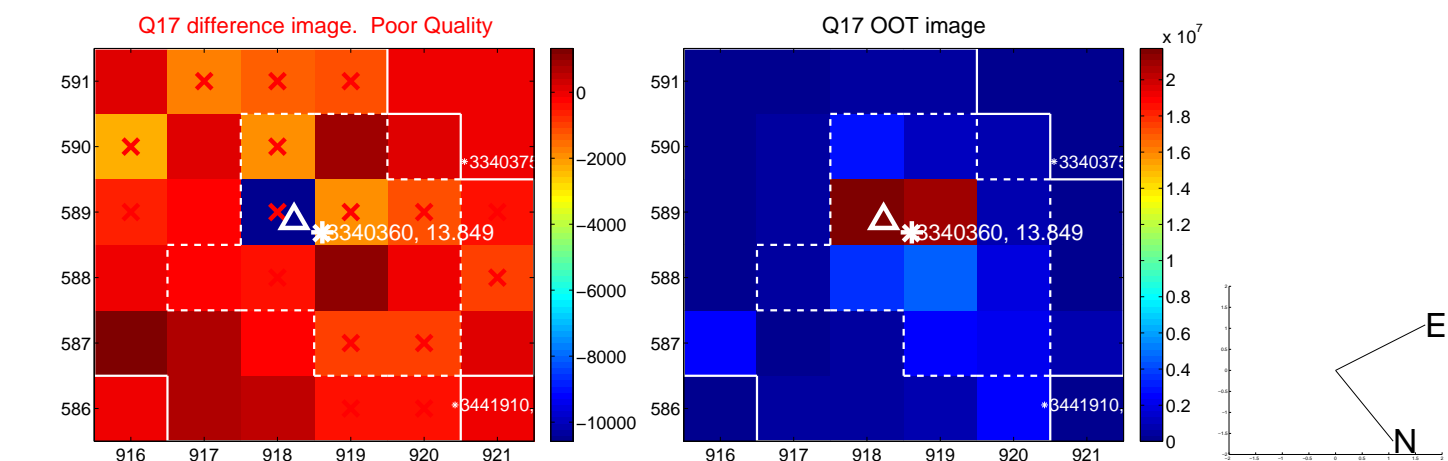
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



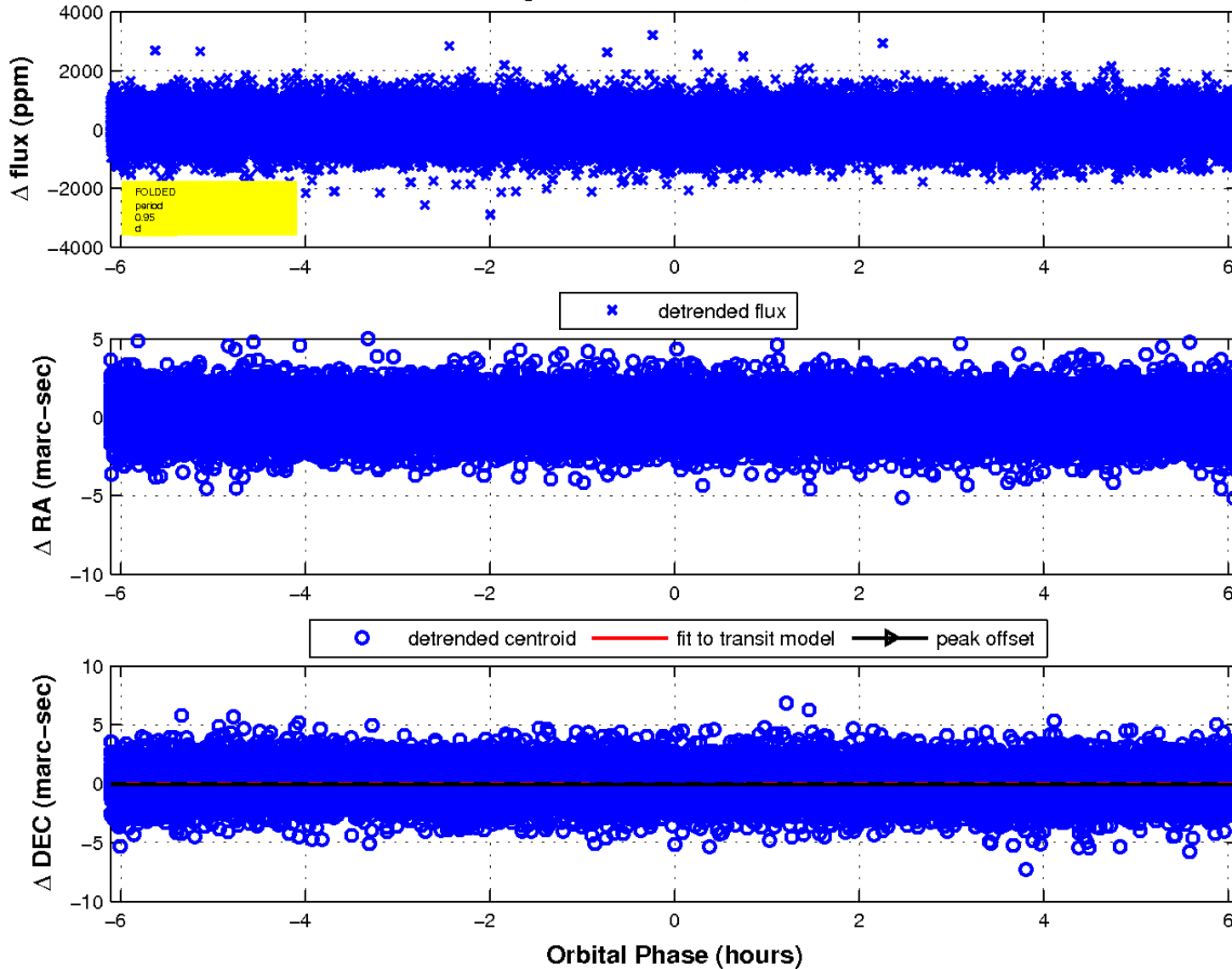
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

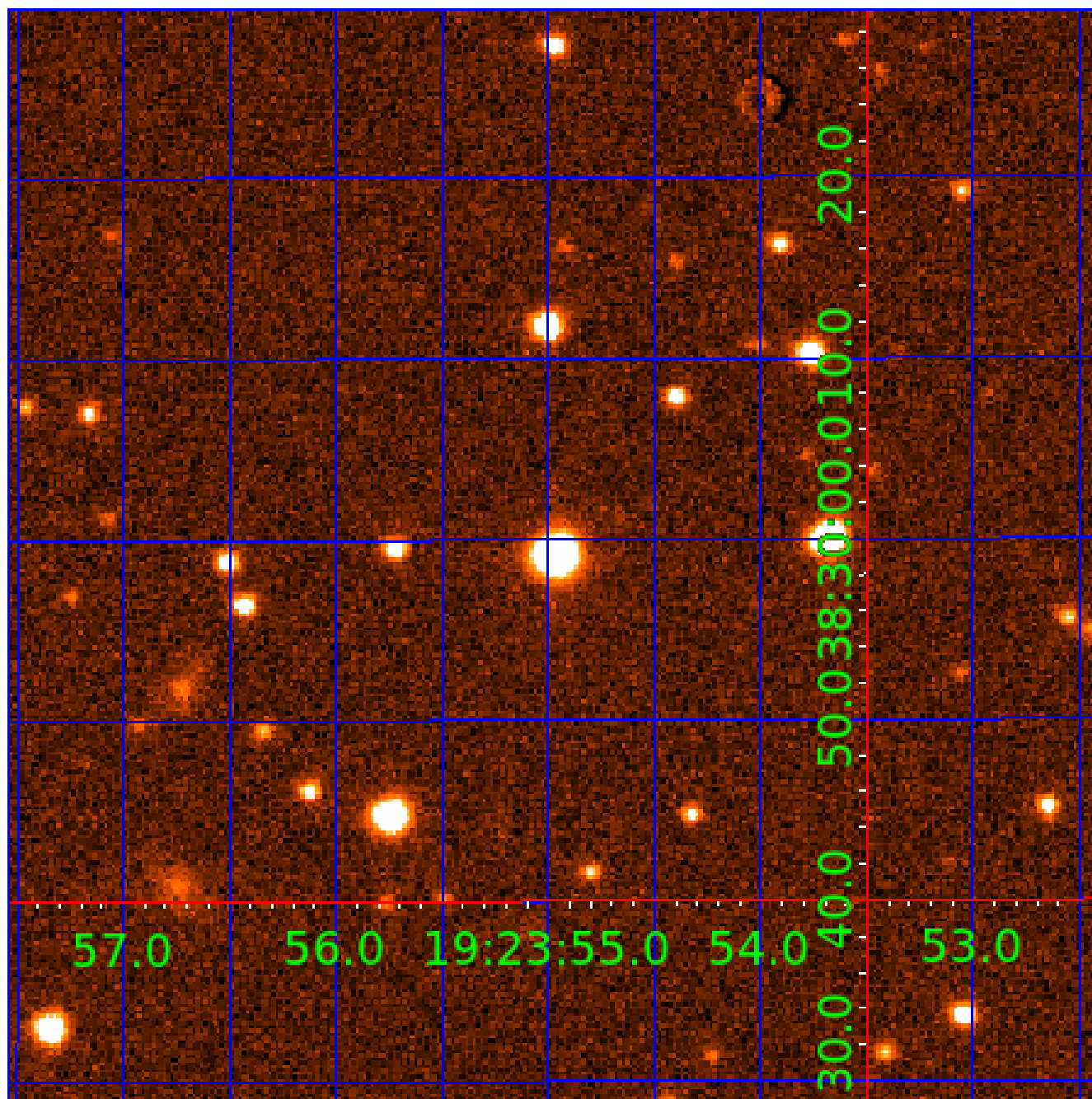


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 003340360

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})
003340360-01	OBS	No	0.949331	131.894299	26.0	1.847	10.7	3.8	1.65	7522	0.97	15504.16
003340360-02	OBS	No	0.949335	132.292905	48.5	2.037	9.5	7.0	1.65	7522	1.32	15504.06
003340360-03	OBS	No	1.296151	131.796513	92.7	7.750	8.0	10.0	1.65	7522	1.61	10236.01
003340360-04	OBS	No	1.394976	131.664246	374.2	5.000	13.9	-1.0	1.65	7522	3.23	9280.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340360-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003340360-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
003340360-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
003340360-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_NOFITS

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

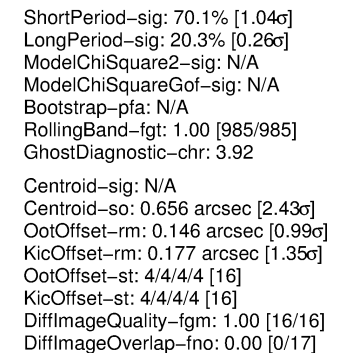
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

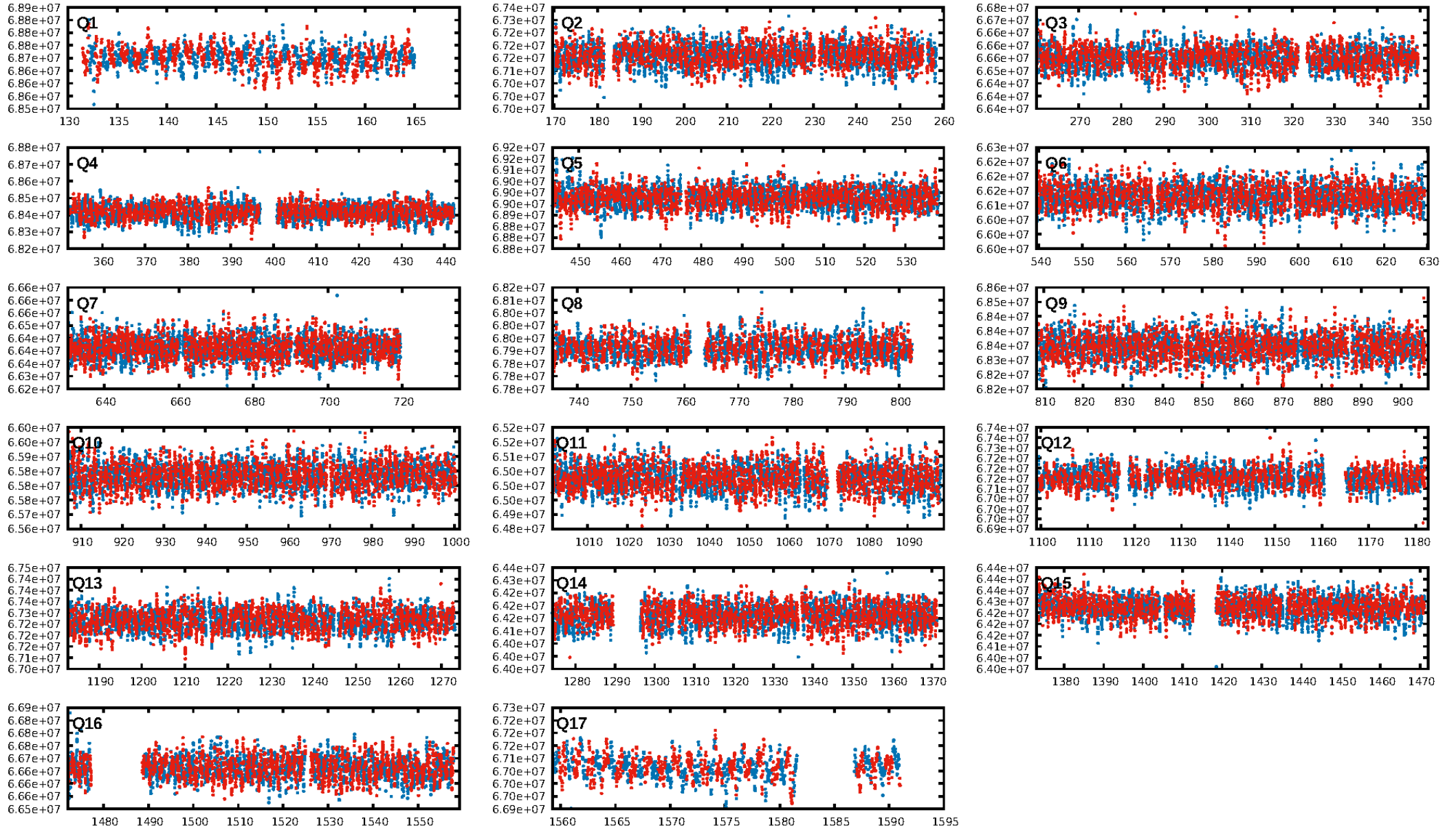
Ephemeris Match Information For 003340360-03

No Significant Match Found

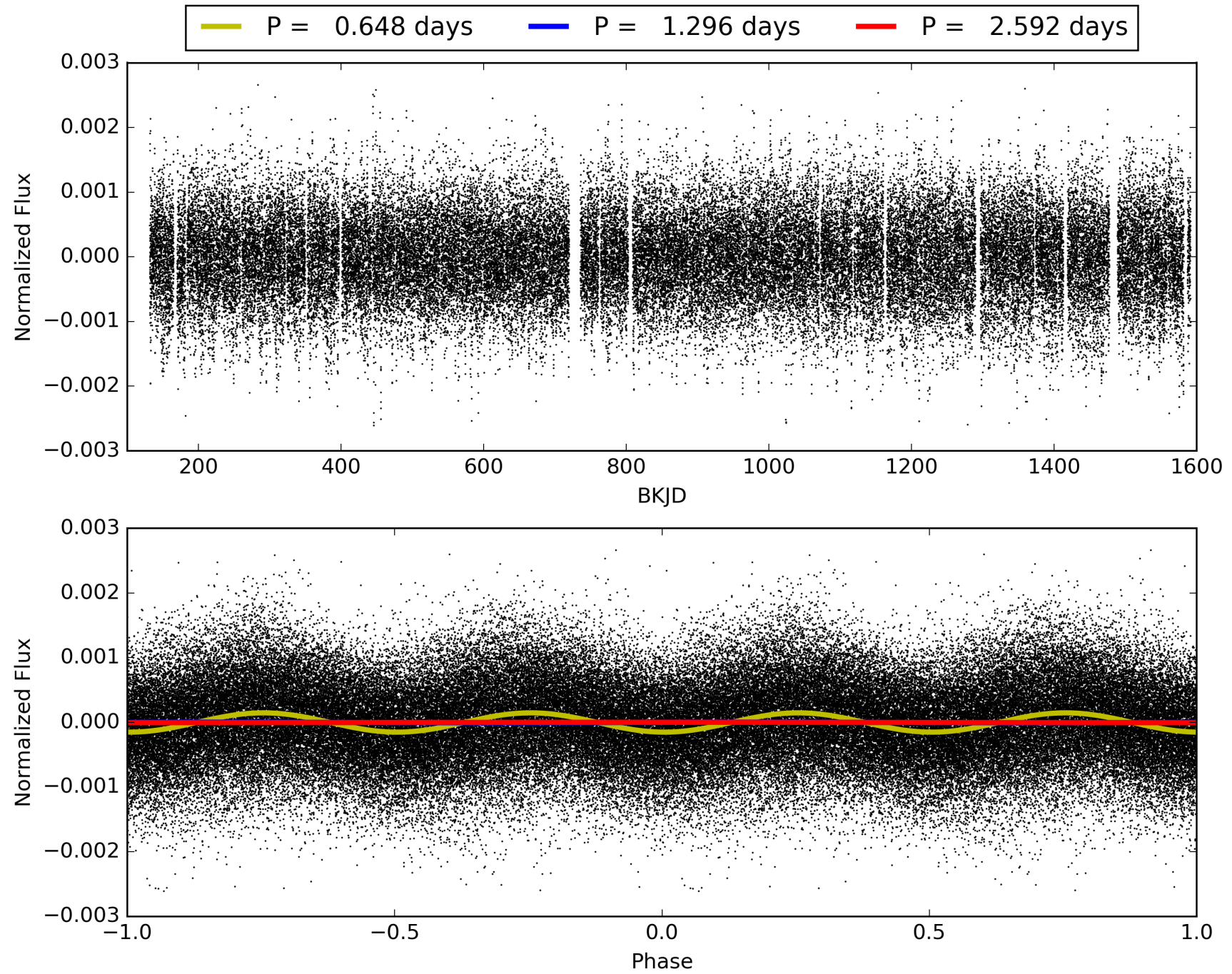
KIC: 3340360 Candidate: 3 of 4 Period: 1.296 d



TCE 003340360-03, PDC Light Curves

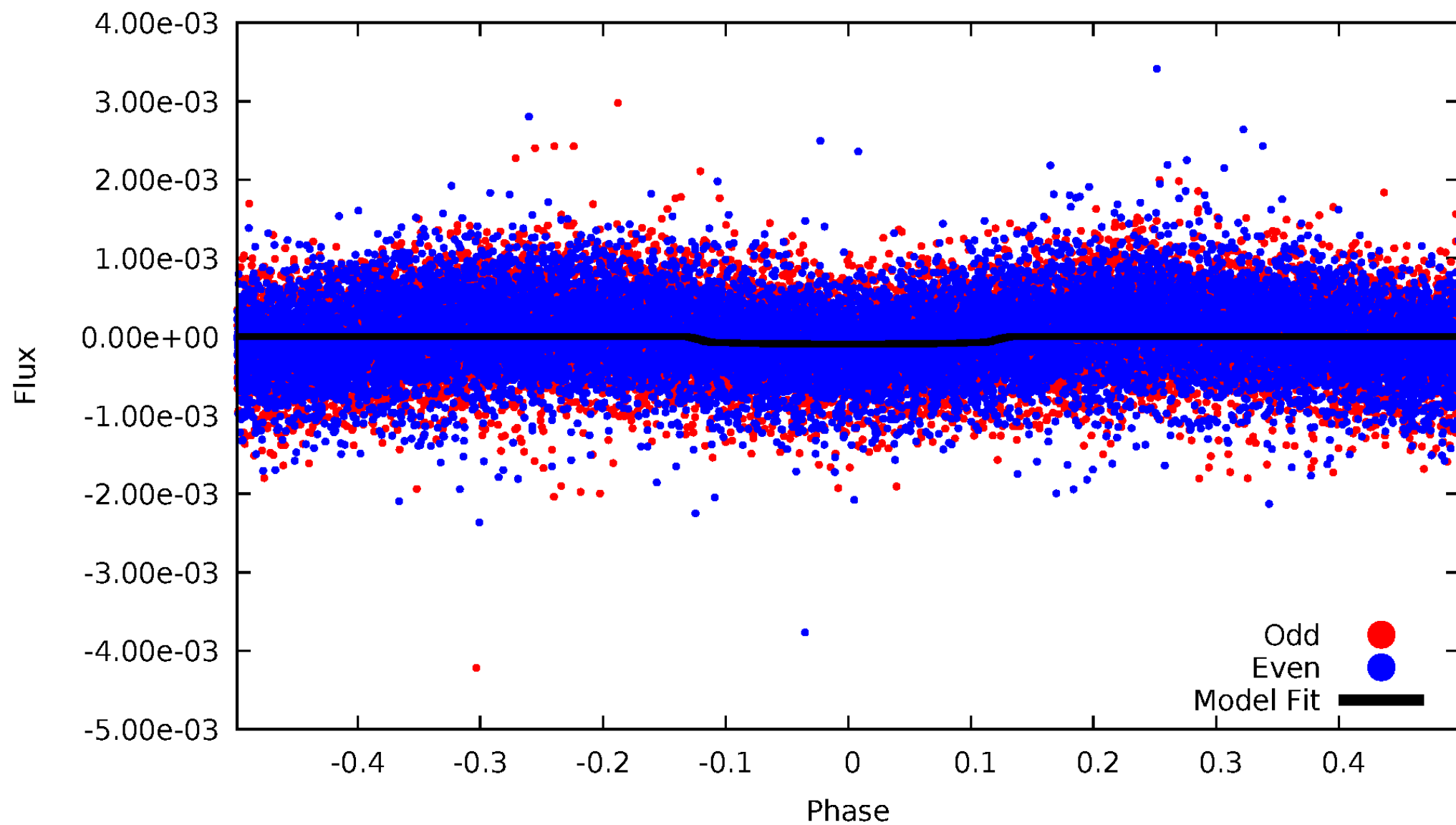


TCE 003340360-03



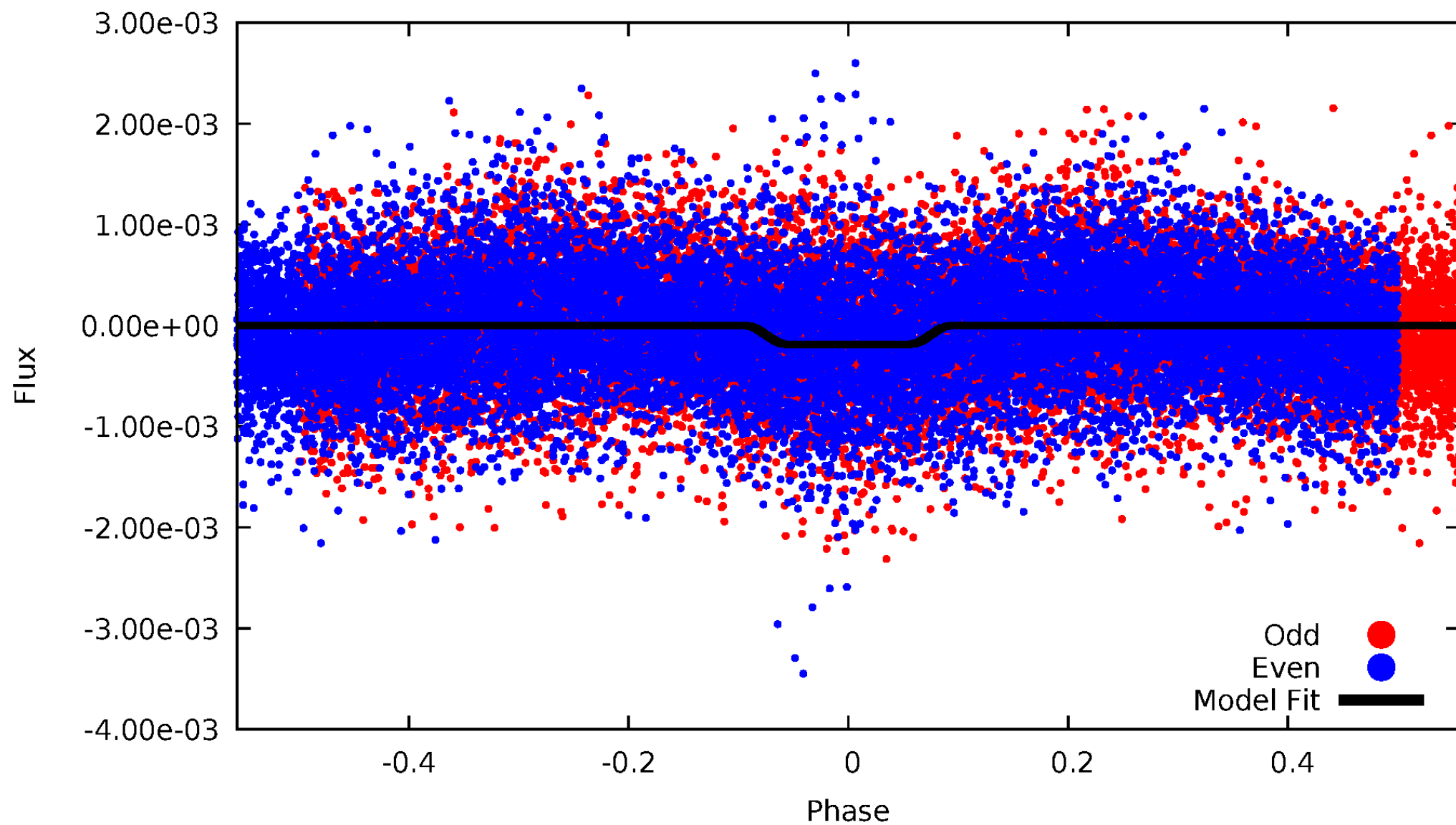
DV Odd/Even

TCE 003340360-03



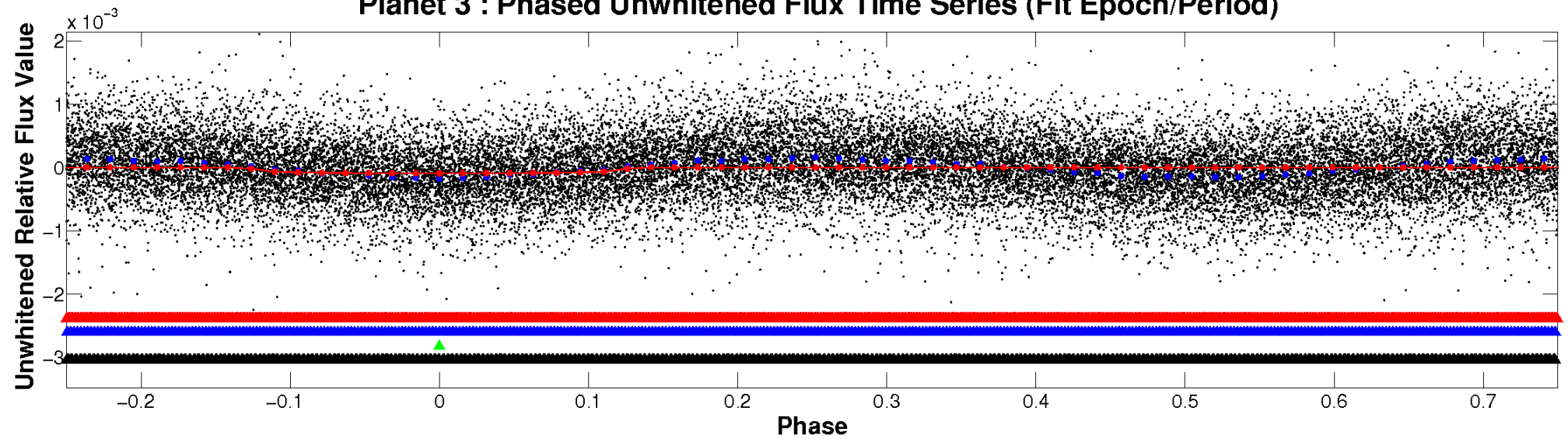
ALT Odd/Even

TCE 003340360-03

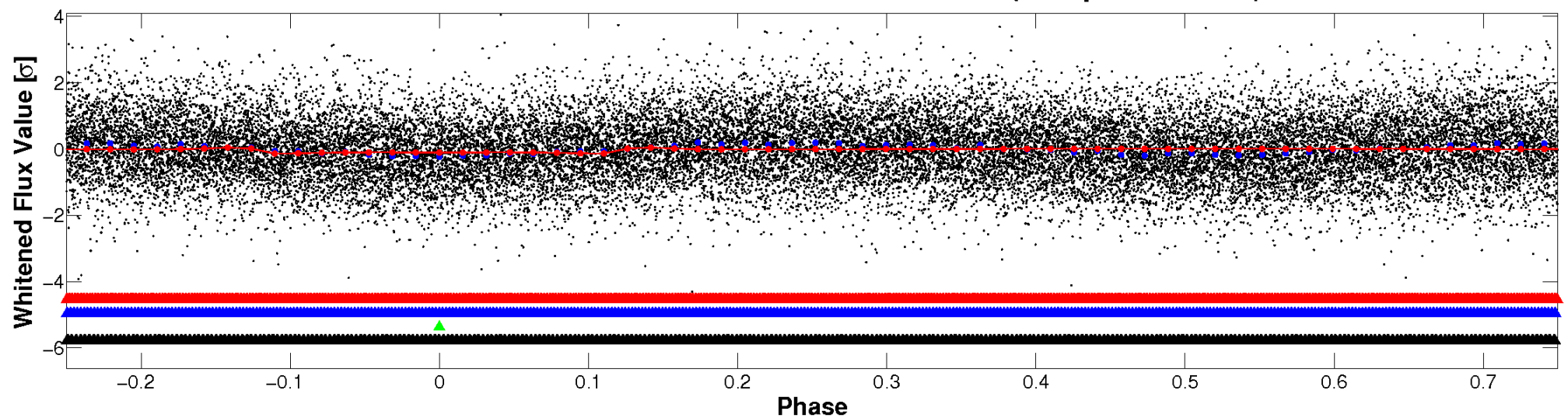


Non-Whitened Vs. Whitened Light Curve

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

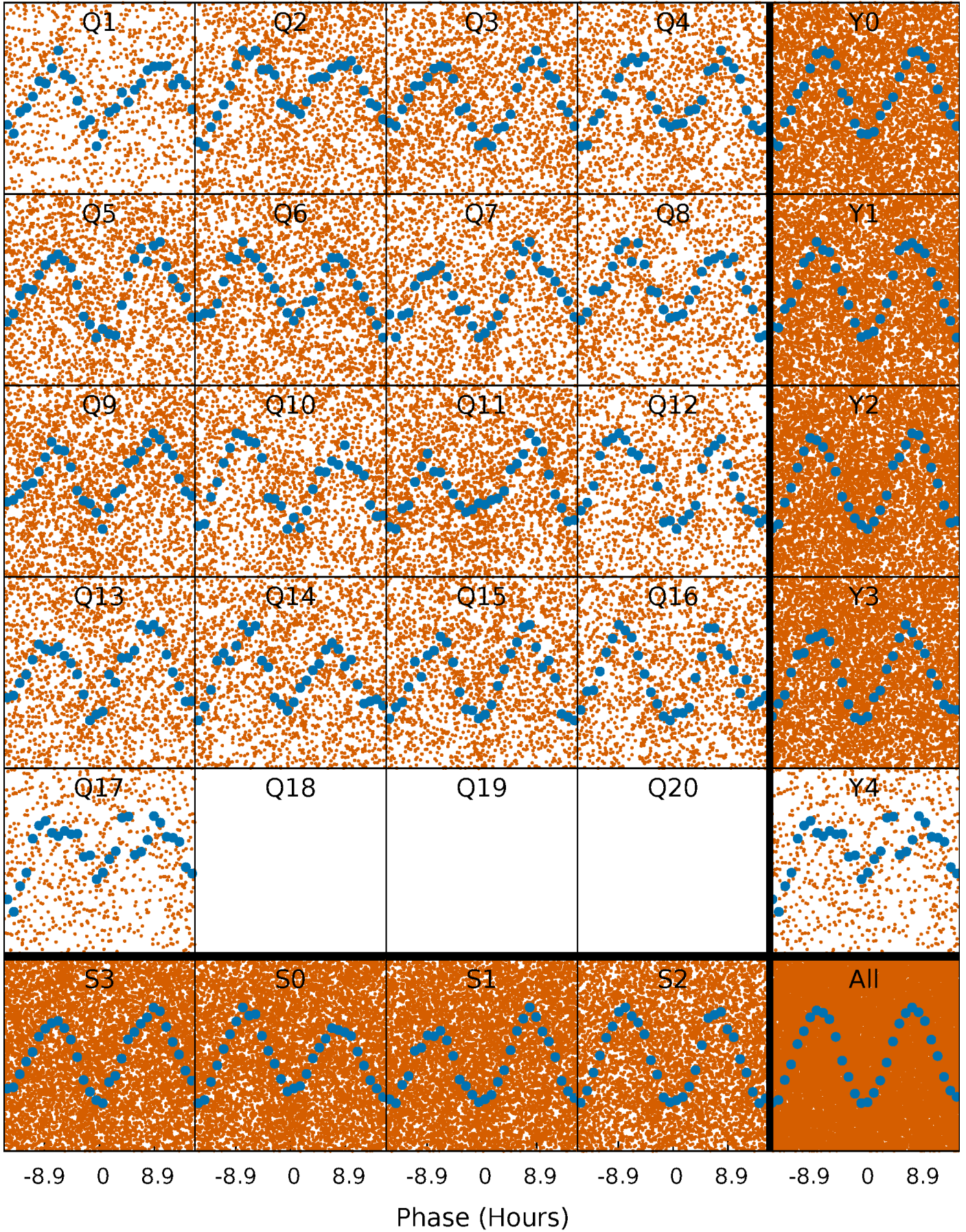


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



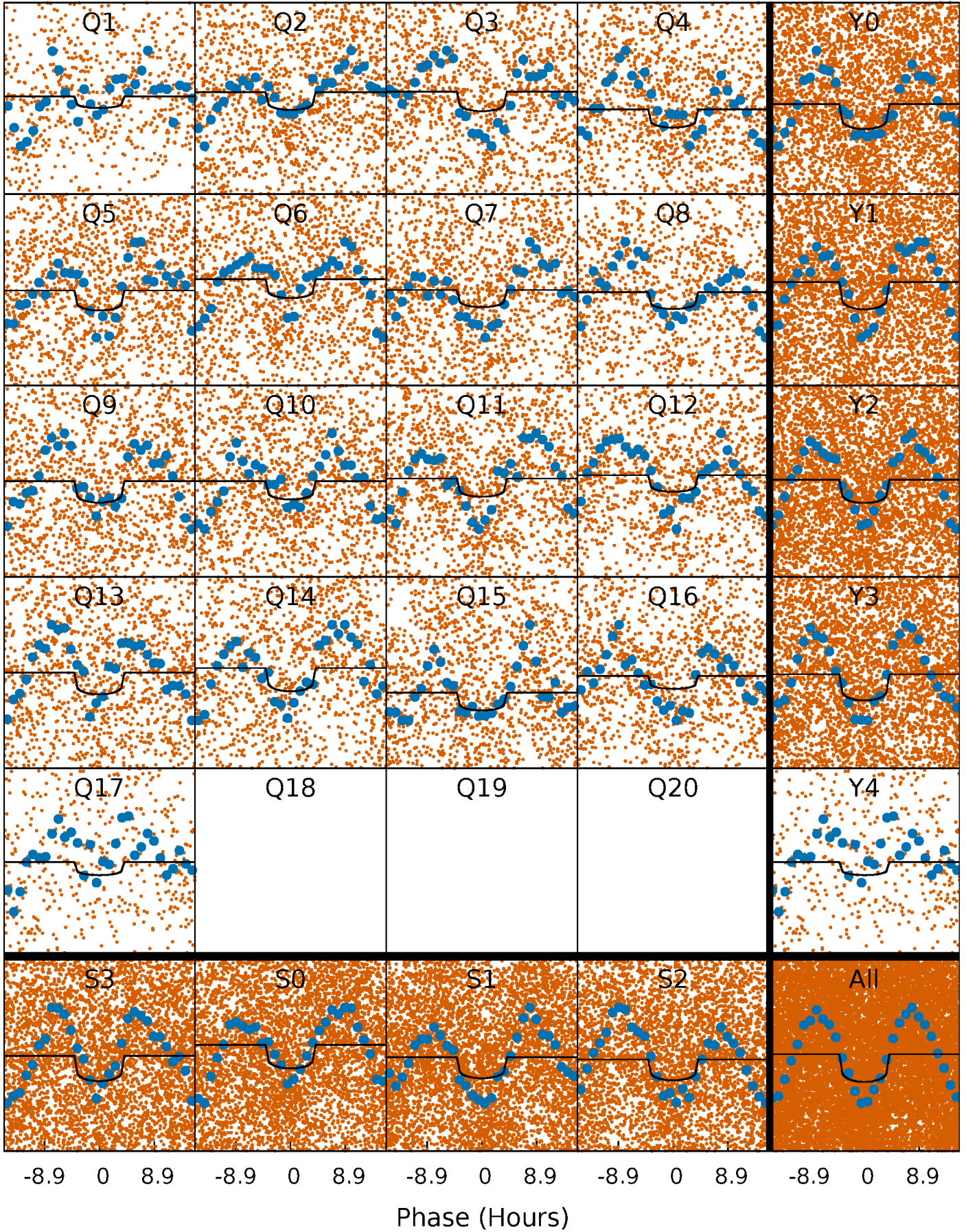
PDC Quarter-Phased Transit Curves

TCE 003340360-03 P= 1.296151 Days $T_0=131.796513$ (BKJD)



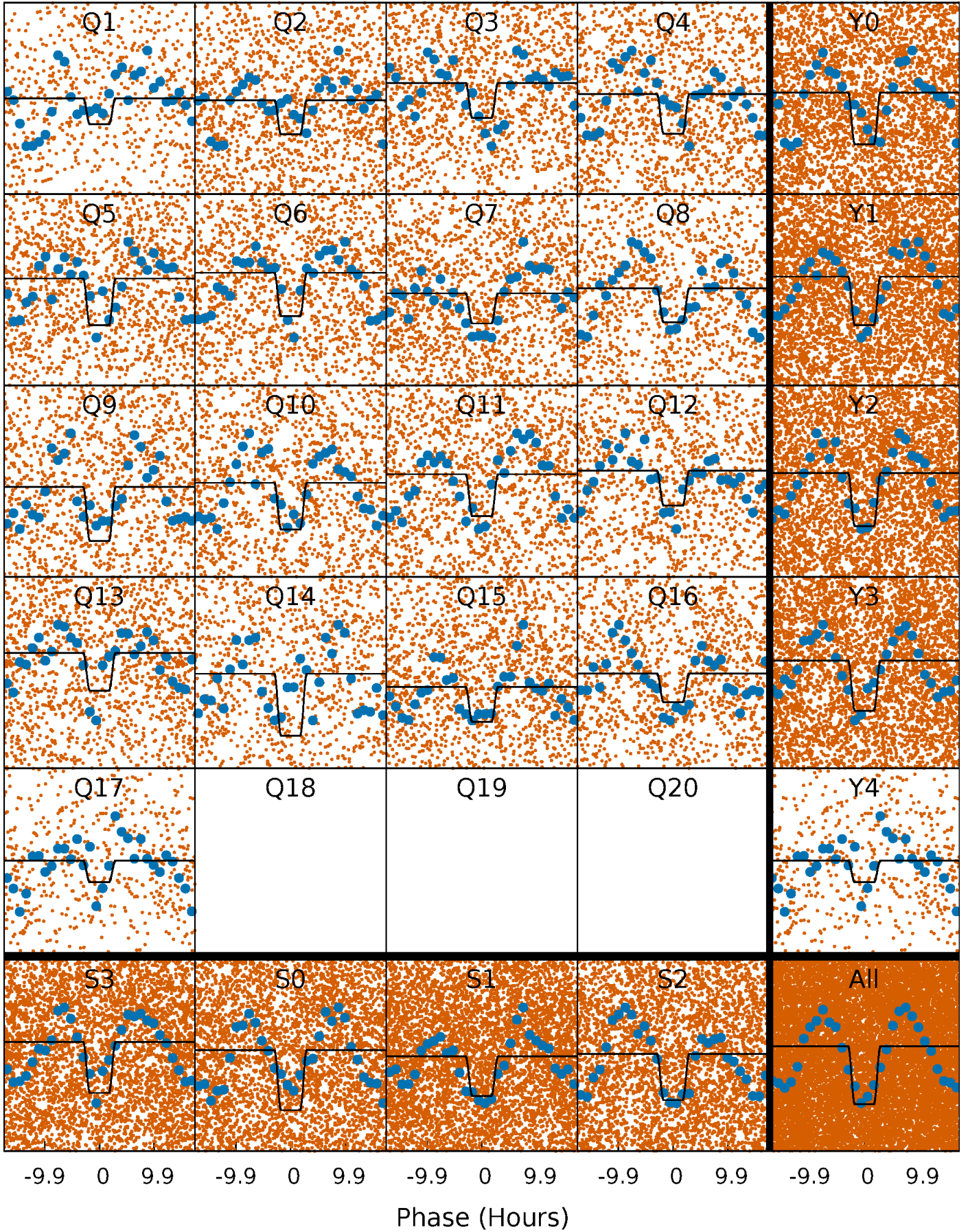
DV Quarter-Phased Transit Curves

TCE 003340360-03 P= 1.296151 Days $T_0=131.796513$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

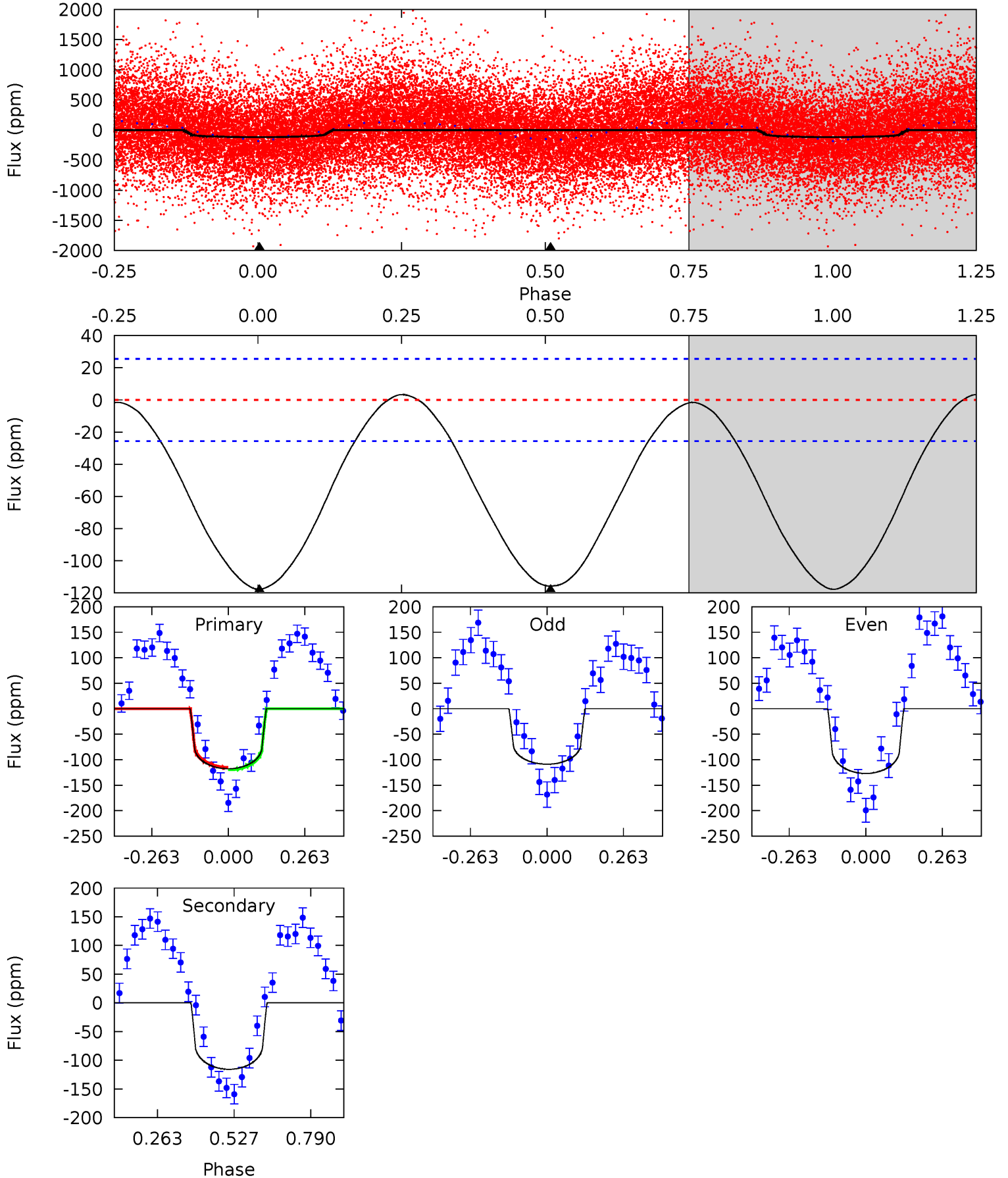
TCE 003340360-03 P= 1.296183 Days $T_0=131.778177$ (BKJD)



DV Model-Shift Uniqueness Test

003340360-03, P = 1.296151 Days, E = 130.500362 Days

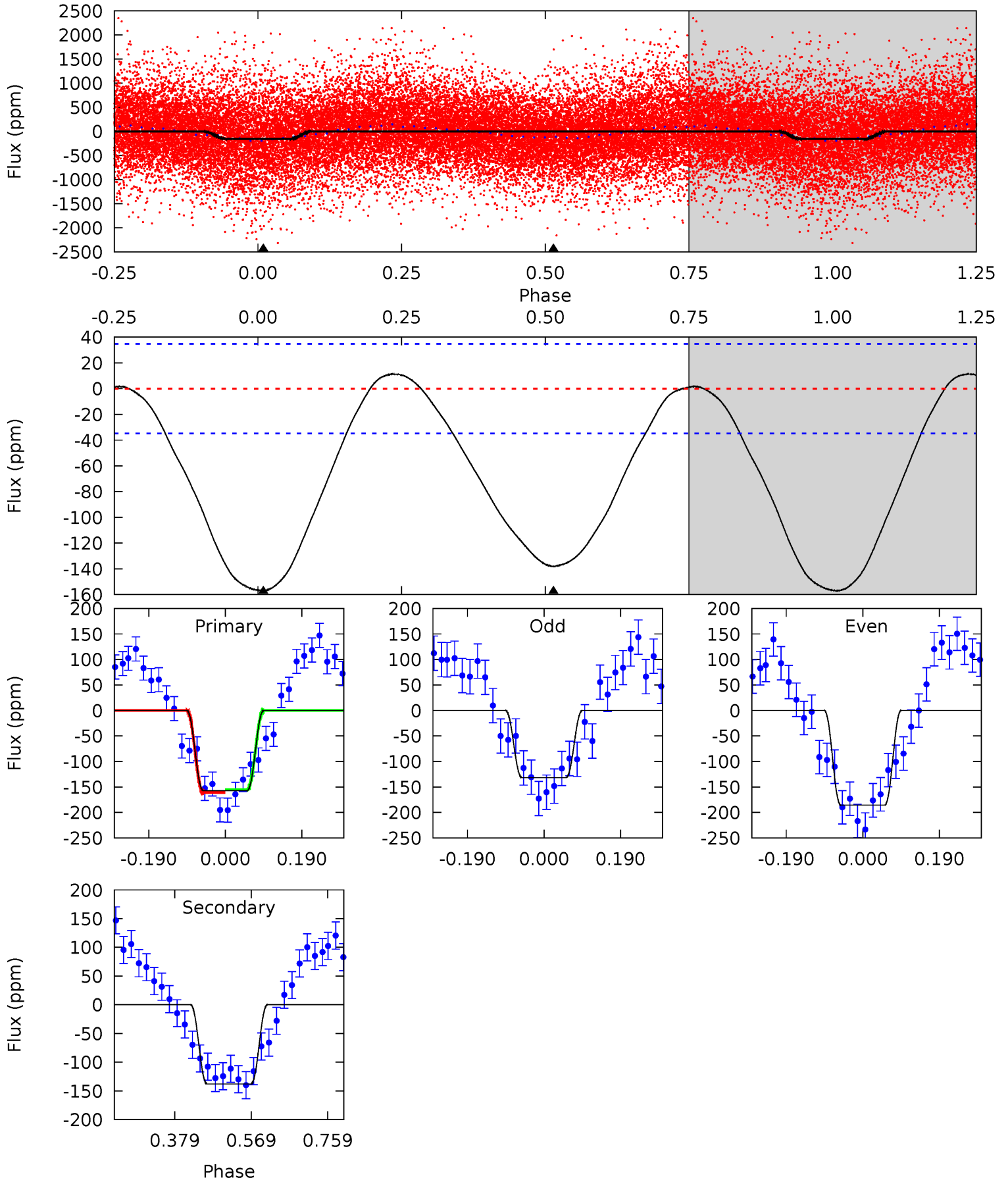
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	19.7	0	0	4.36	1.12	0.41	20.1	20.1	19.7	19.7	1.59	1.00	0.03	0.42



Alt Model-Shift Uniqueness Test

003340360-03, P = 1.296183 Days, E = 130.481994 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	17.6	0	0	4.43	1.31	1.12	20.0	20.0	17.6	17.6	3.41	1.03	0.07	0.35



Stellar Parameters For KIC 003340360

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7522^{+210}_{-330}	$4.225^{+0.073}_{-0.218}$	$0.210^{+0.150}_{-0.400}$	$1.645^{+0.586}_{-0.195}$	$1.676^{+0.205}_{-0.251}$	$0.530^{+0.164}_{-0.293}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-12%	+12%/-15%	+31%/-55%
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 003340360-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-116 ± 6	$1.85^{+1.26}_{-1.06}$	3645^{+289}_{-199}	7747^{+7059}_{-1882}	14^{+61}_{-9}
Alt.	-138 ± 8	$2.65^{+1.36}_{-1.19}$	3658^{+291}_{-224}	6728^{+3060}_{-1237}	$8.280^{+19.384}_{-4.717}$

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

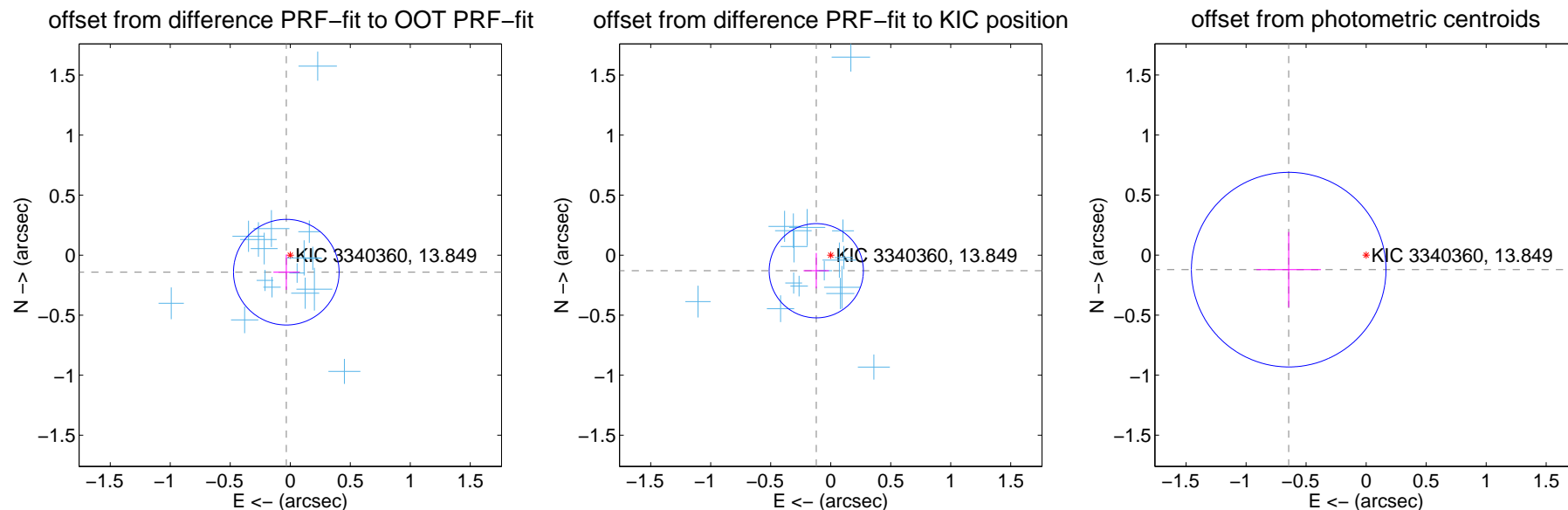
DV Centroid Data

Supplemental centroid analysis for 003340360-03. Kepler magnitude: 13.85. Transit SNR 9.97

There are 16 quarters with good PRF difference image offsets

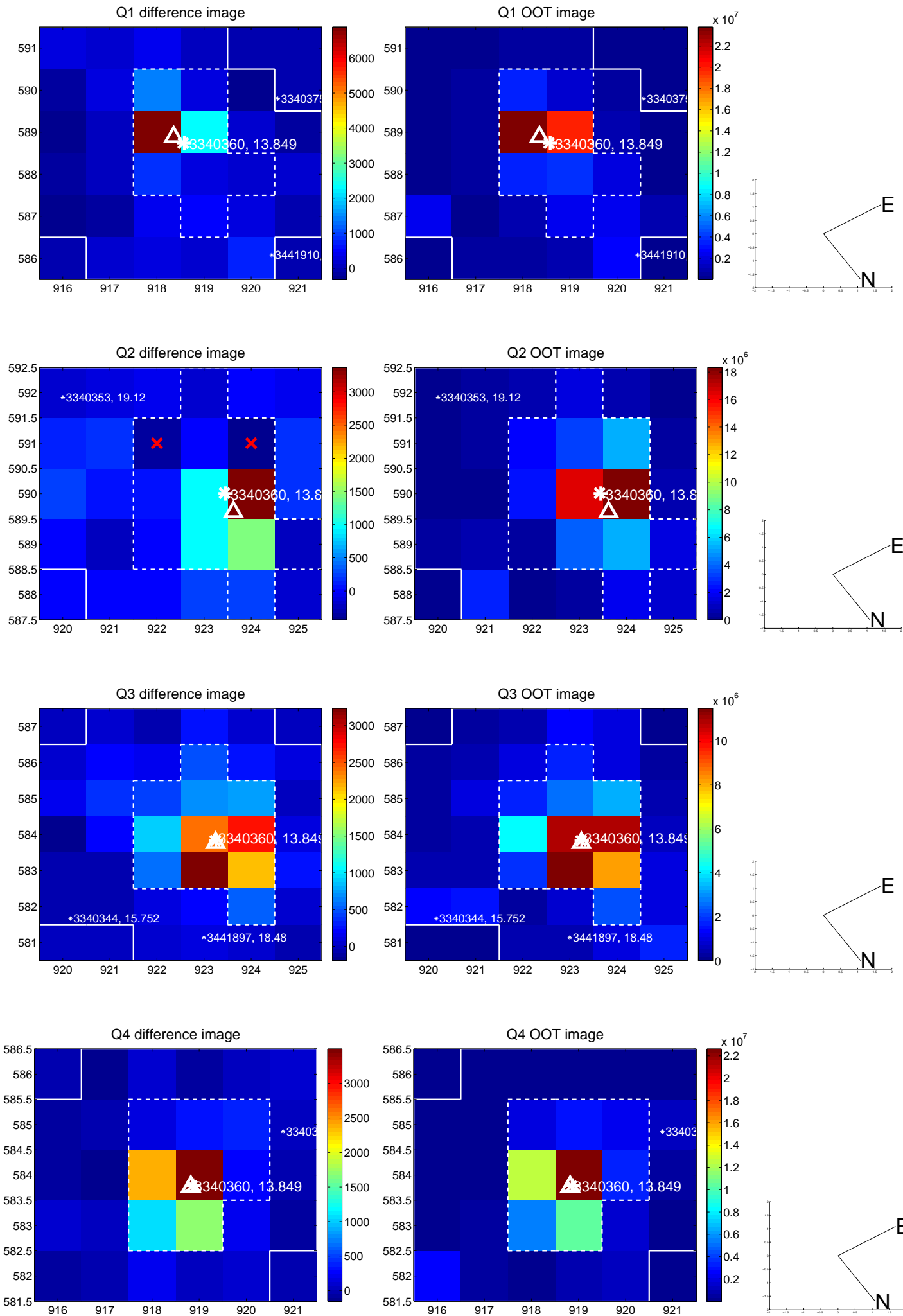
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.146 ± 0.147	0.99	0.033 ± 0.108	-0.142 ± 0.147
PRF-fit source offset from KIC position	0.177 ± 0.131	1.35	0.120 ± 0.106	-0.130 ± 0.148
photometric centroid source offset	0.66 ± 0.27	2.43	0.65 ± 0.27	-0.12 ± 0.31

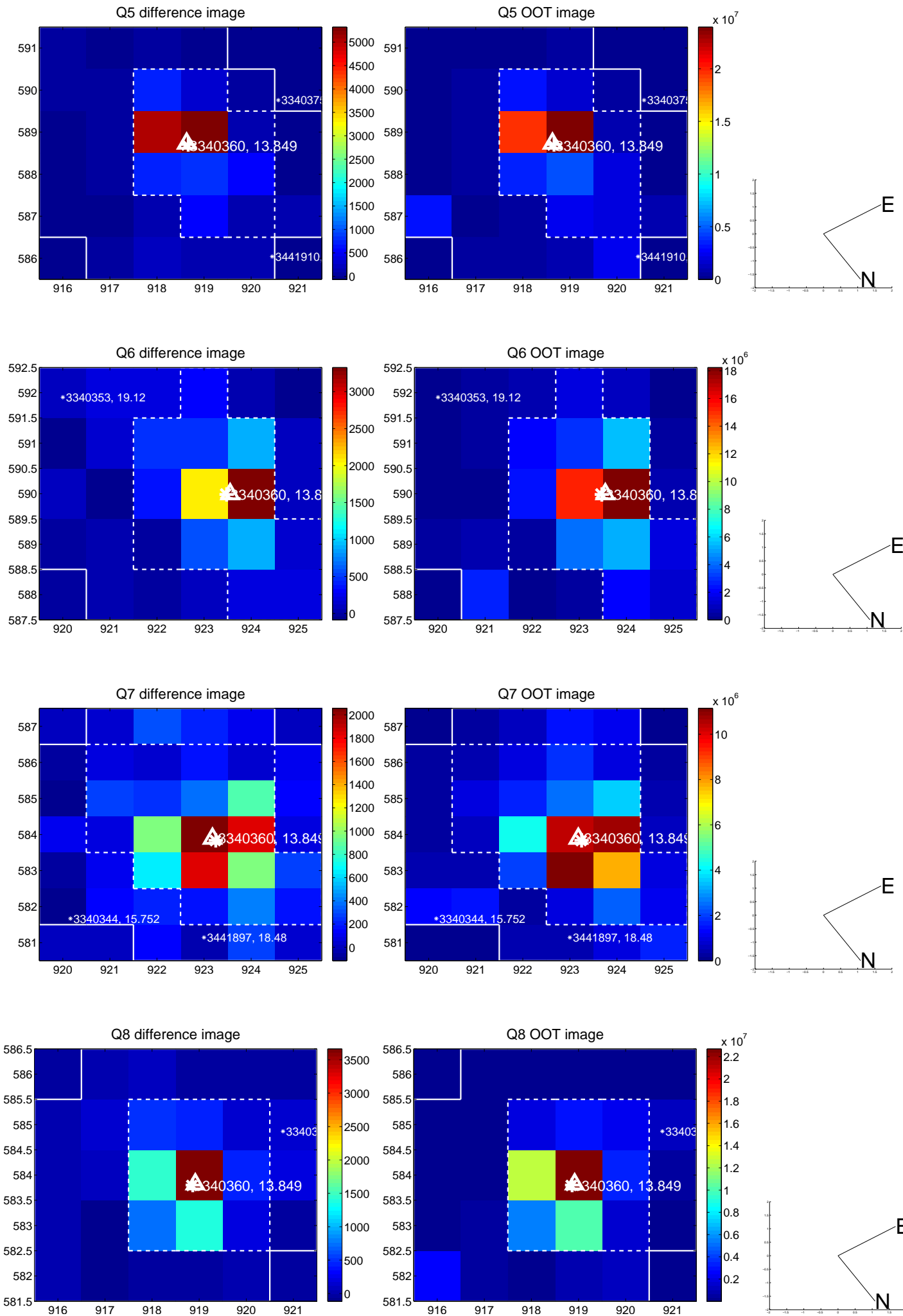


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

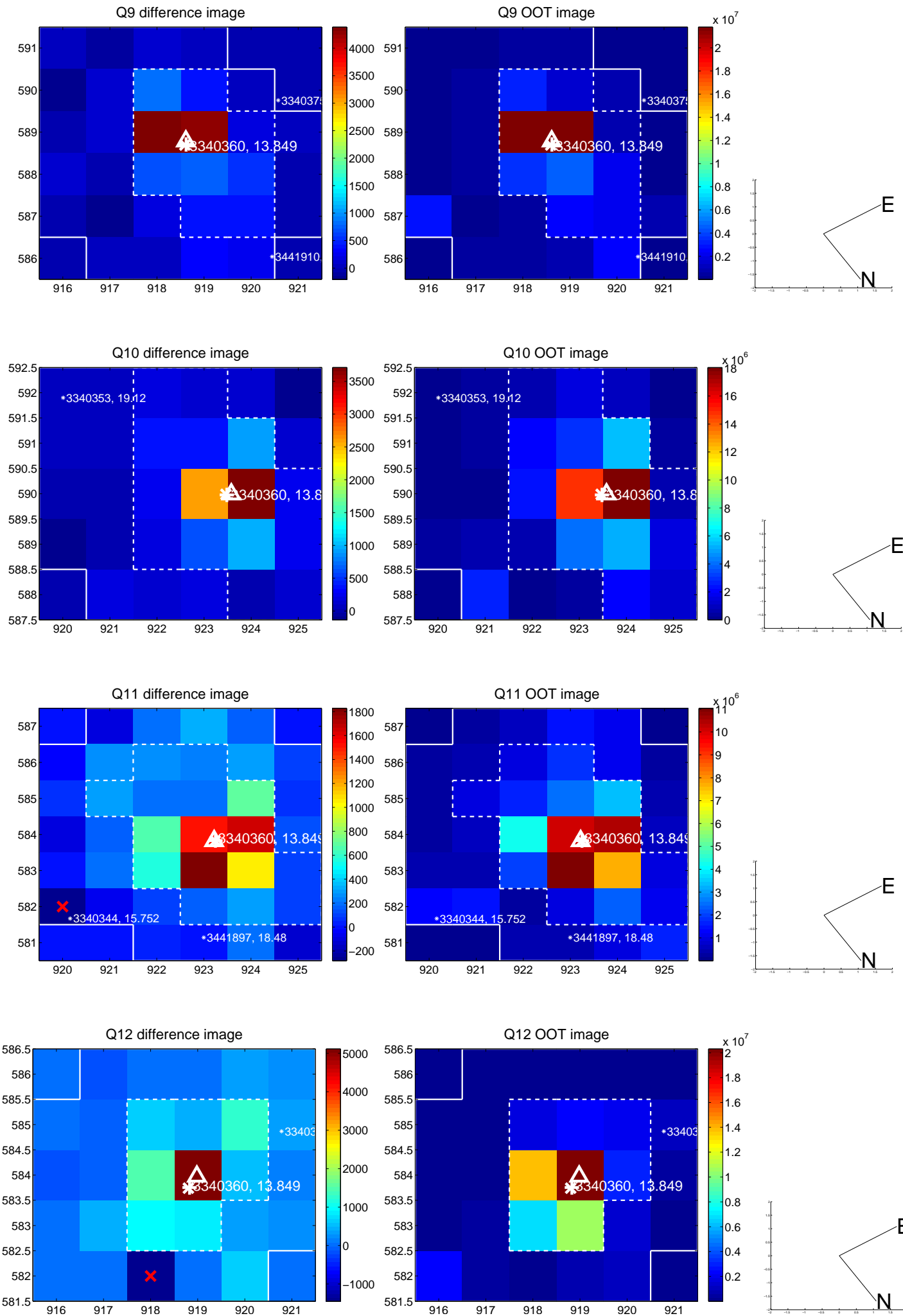
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



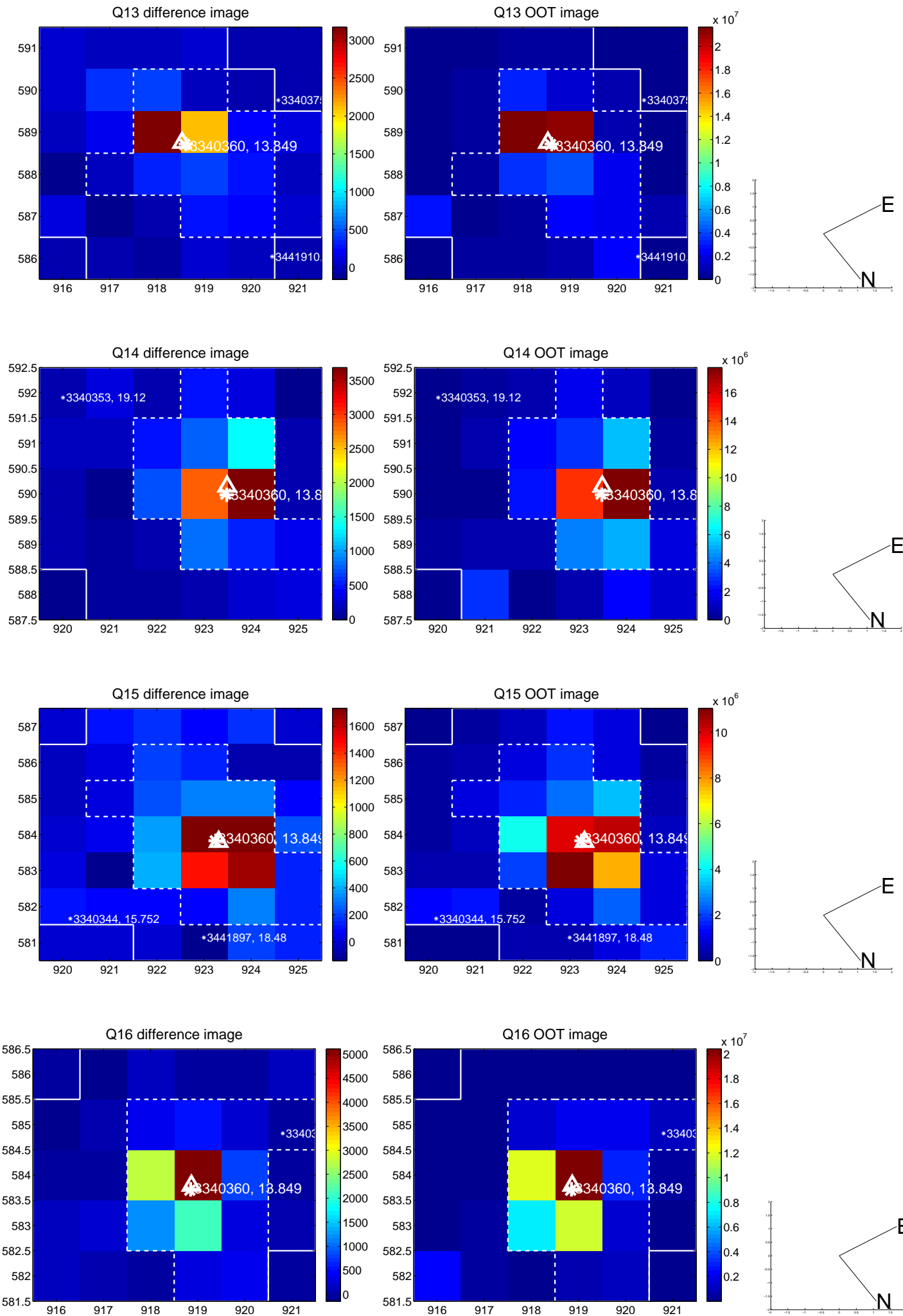
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



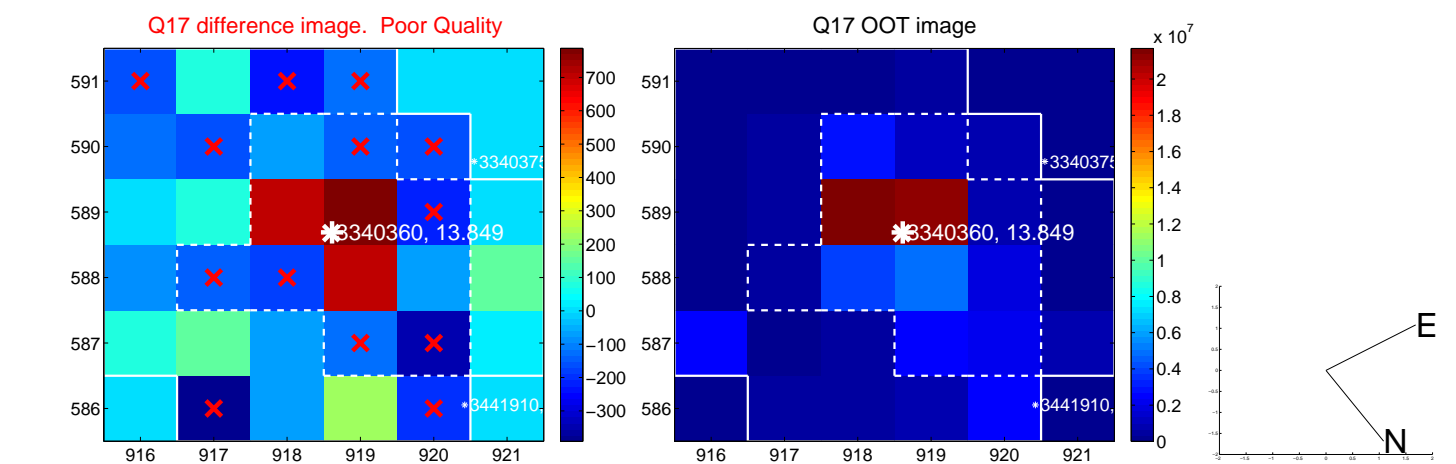
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



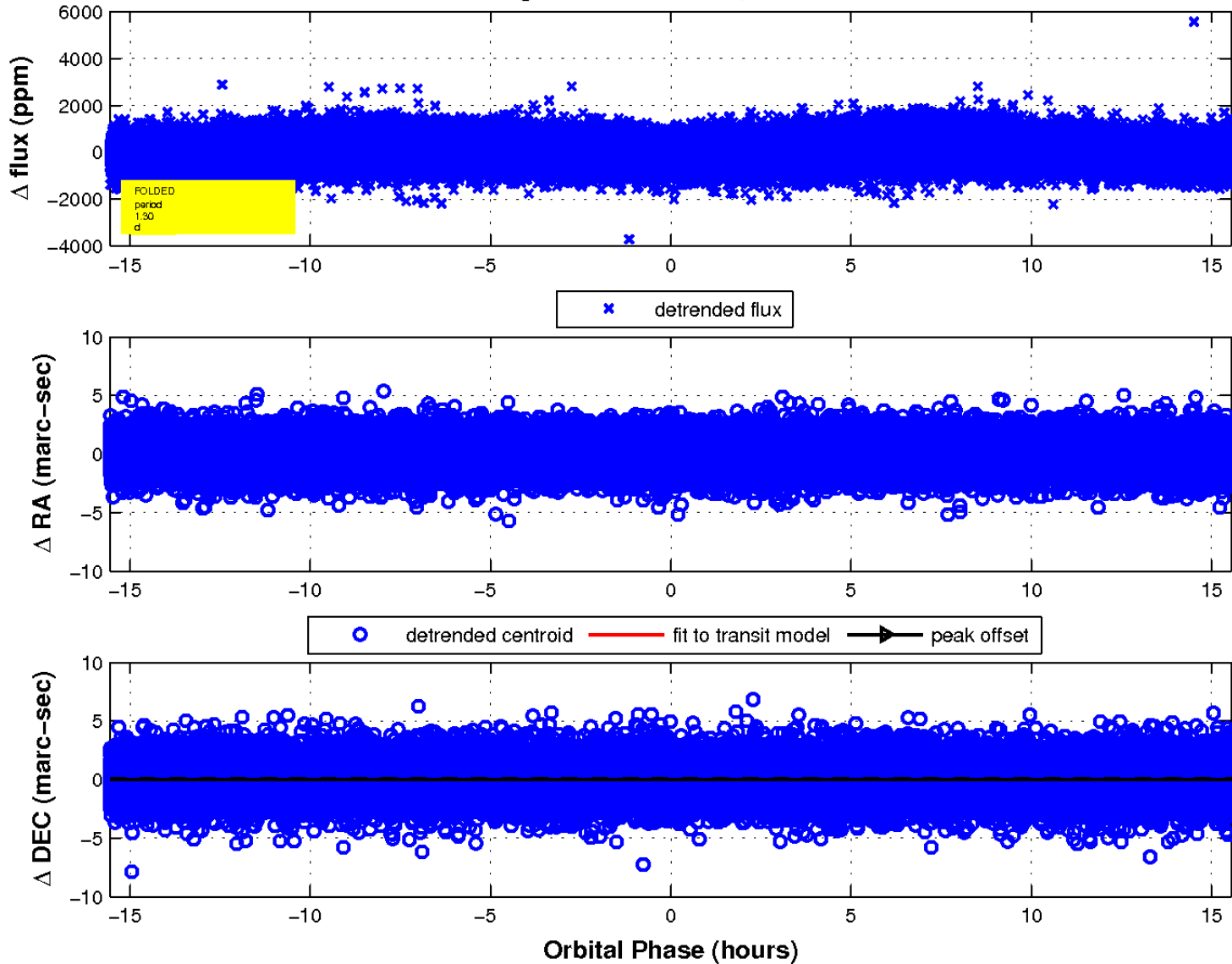
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

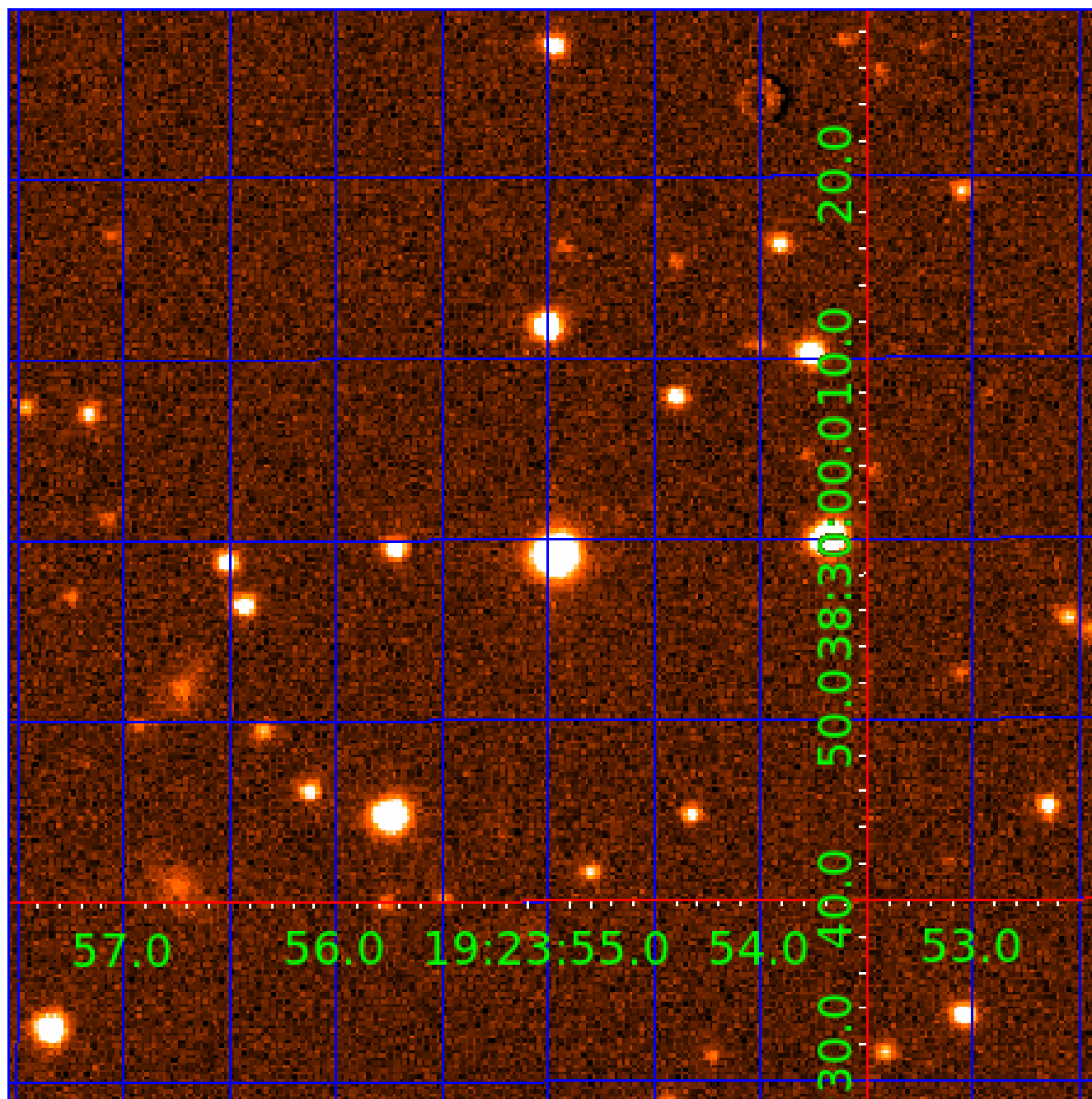


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 003340360

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})
003340360-01	OBS	No	0.949331	131.894299	26.0	1.847	10.7	3.8	1.65	7522	0.97	15504.16
003340360-02	OBS	No	0.949335	132.292905	48.5	2.037	9.5	7.0	1.65	7522	1.32	15504.06
003340360-03	OBS	No	1.296151	131.796513	92.7	7.750	8.0	10.0	1.65	7522	1.61	10236.01
003340360-04	OBS	No	1.394976	131.664246	374.2	5.000	13.9	-1.0	1.65	7522	3.23	9280.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340360-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003340360-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
003340360-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
003340360-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

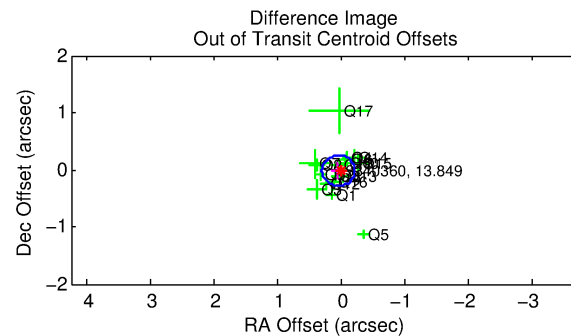
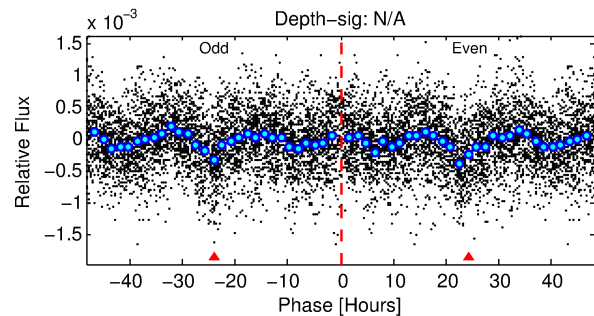
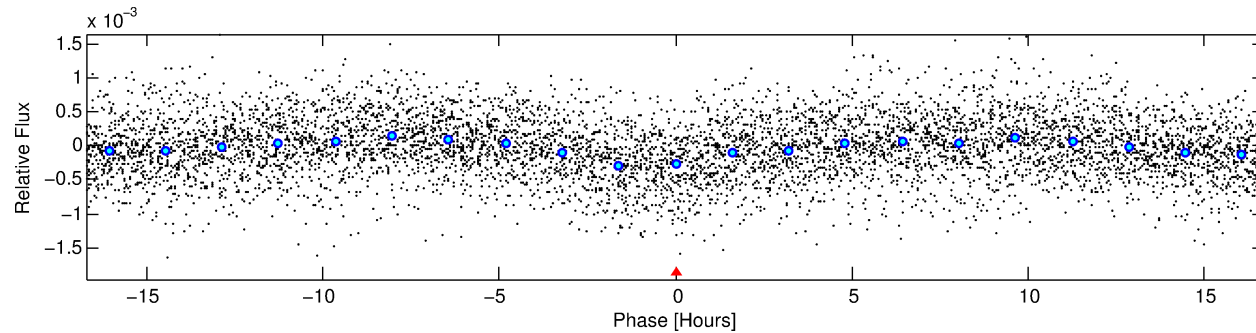
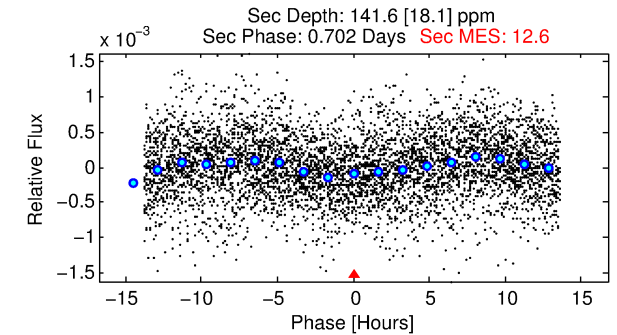
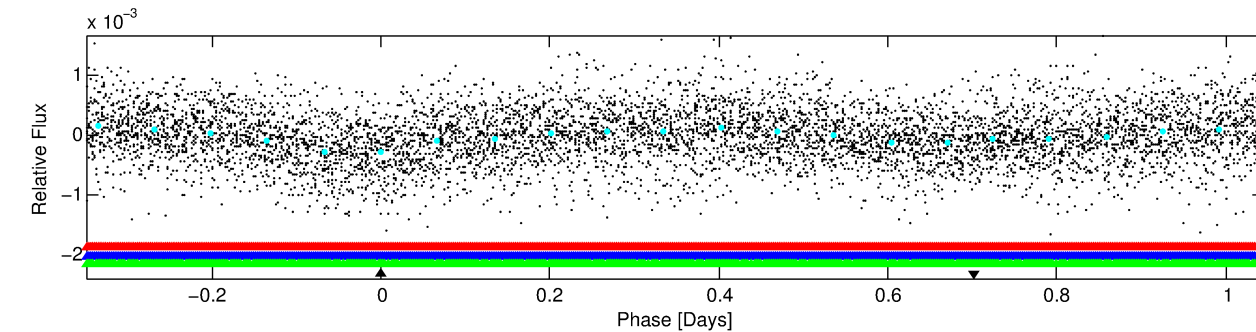
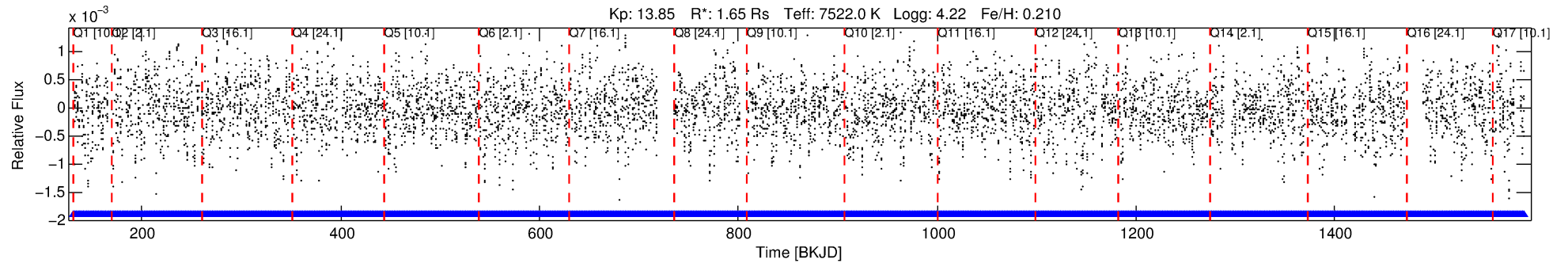
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003340360-04

No Significant Match Found

DV One-Page Summary

KIC: 3340360 Candidate: 4 of 4 Period: 1.395 d



TPS TCE Results:

Period = 1.39498 d
Epoch = 131.6642 BKJD

DV fit results are unavailable

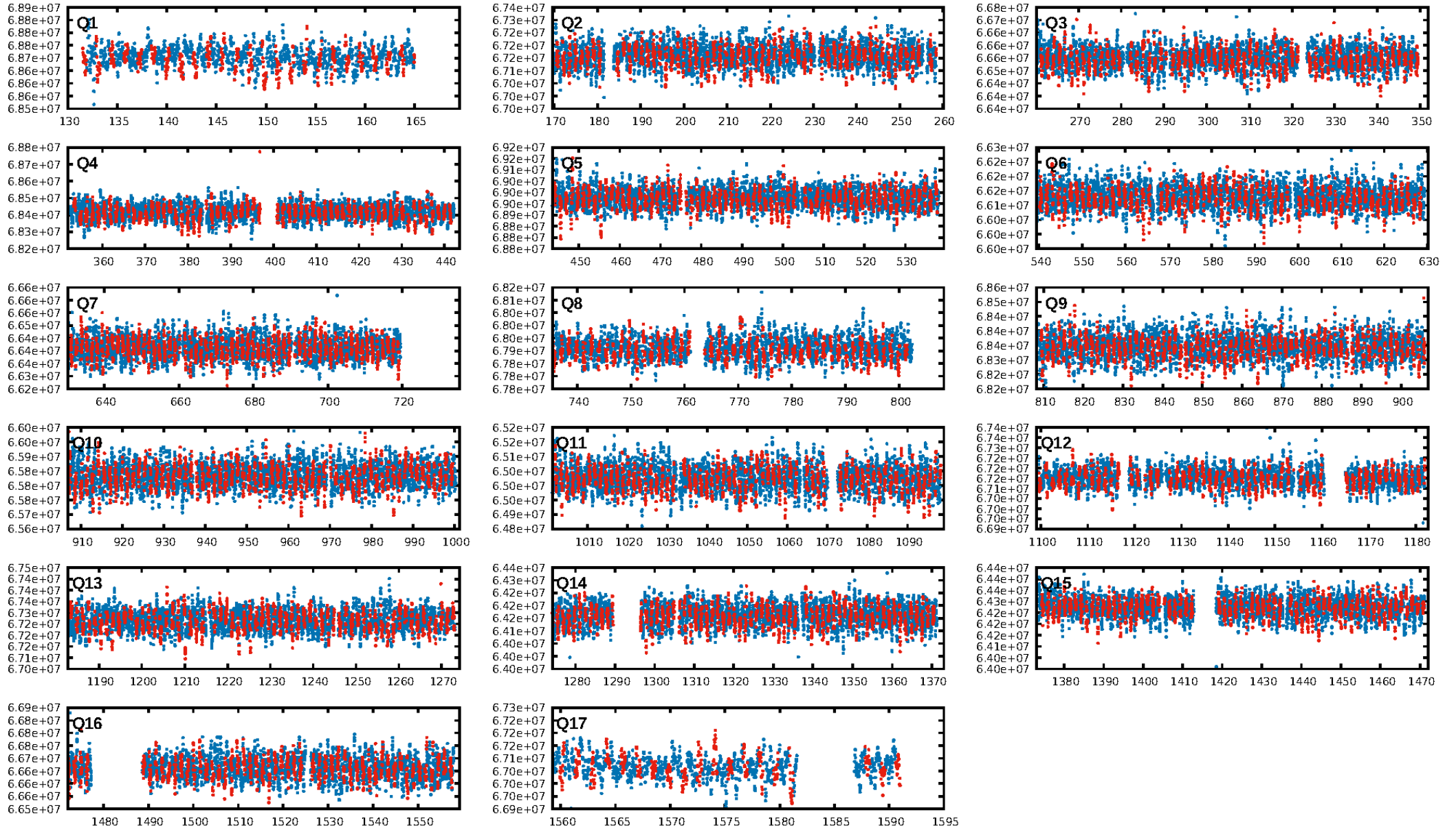
DV Diagnostic Results:

ShortPeriod-sig: 20.3% [0.26 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [339/339]
GhostDiagnostic-chr: 1.303
Centroid-sig: N/A
Centroid-so: 0.157 arcsec [1.32 σ]
OotOffset-rm: 0.051 arcsec [0.58 σ]
KicOffset-rm: 0.129 arcsec [1.48 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

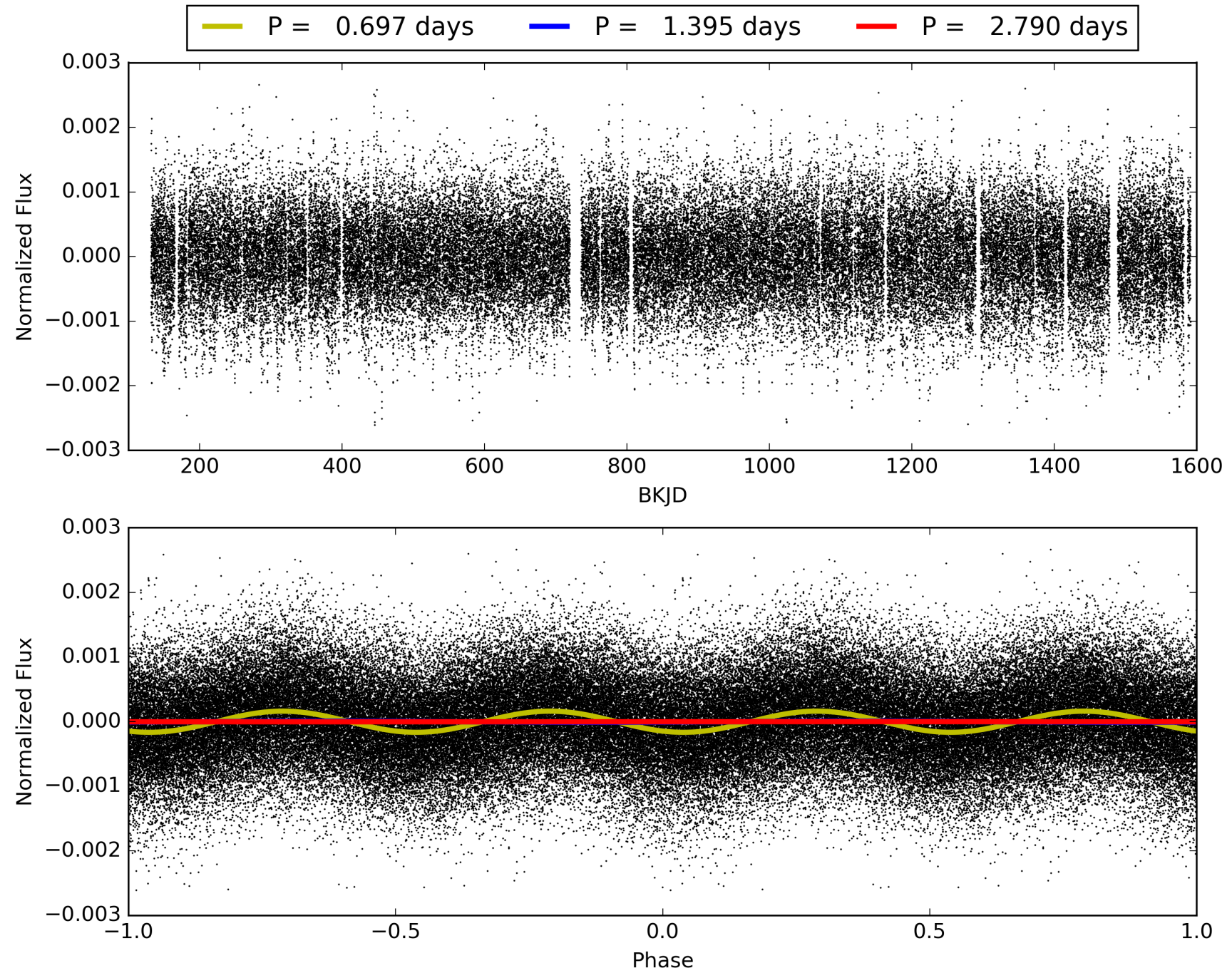
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:36:46 Z

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

TCE 003340360-04, PDC Light Curves

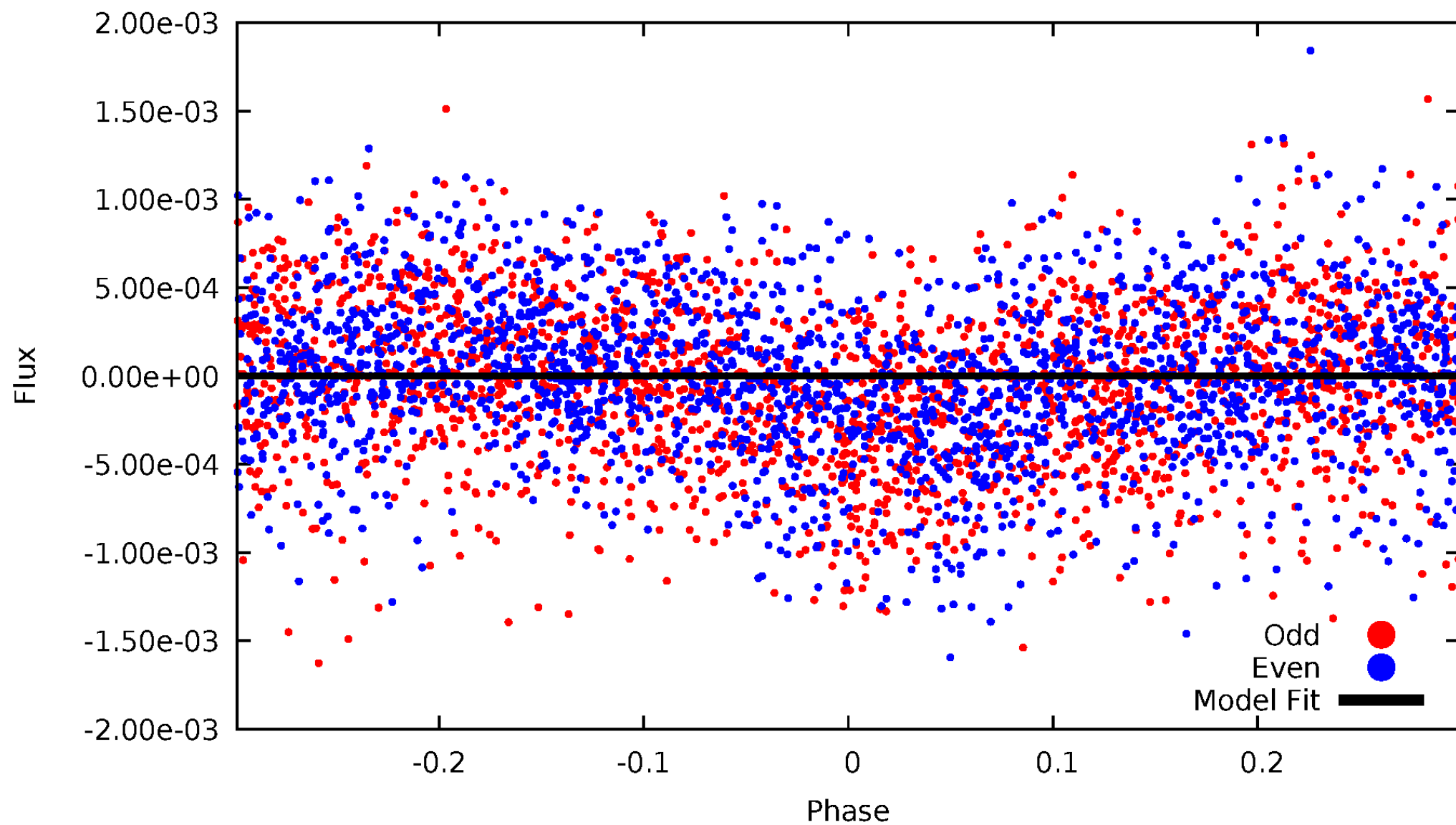


TCE 003340360-04



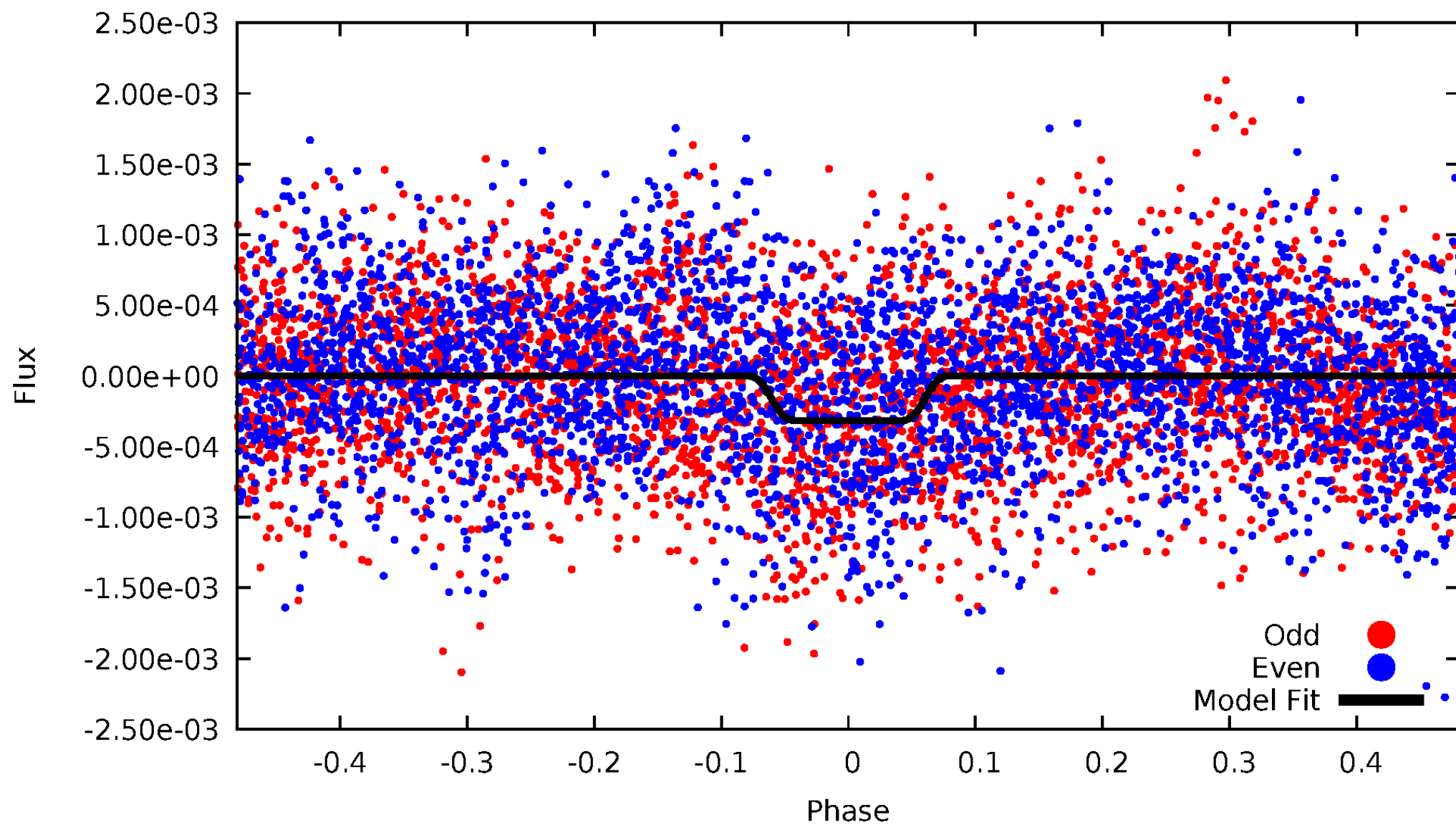
DV Odd/Even

TCE 003340360-04



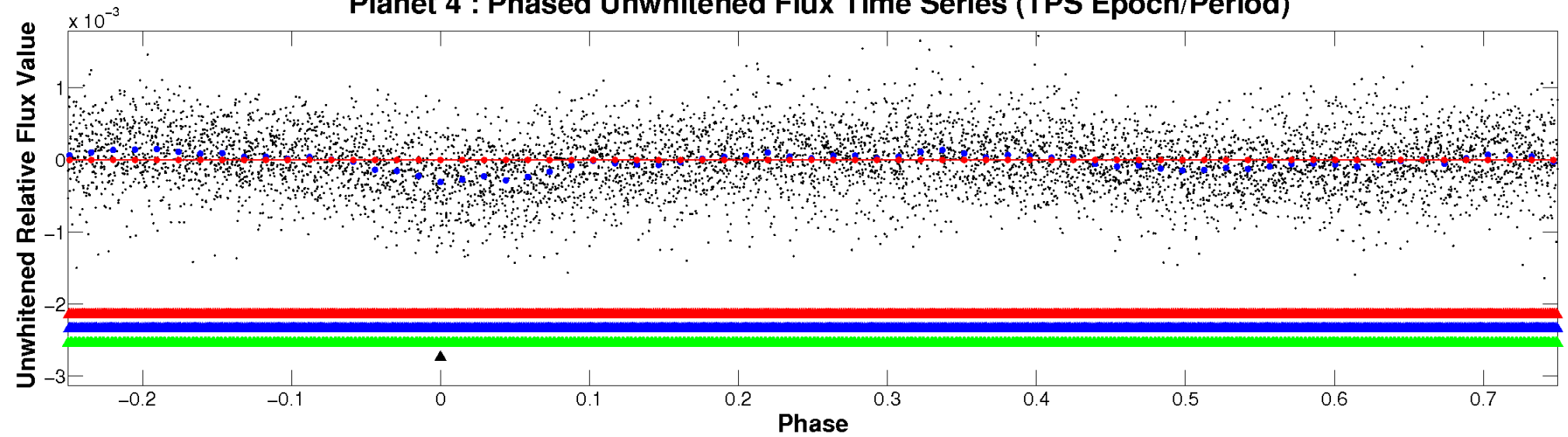
ALT Odd/Even

TCE 003340360-04

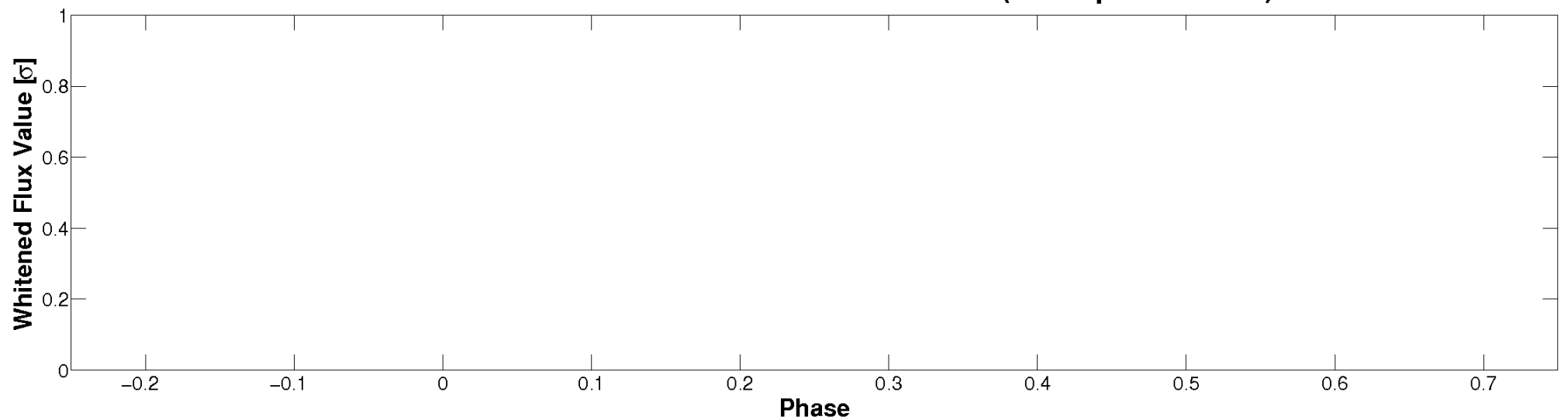


Non-Whitened Vs. Whitened Light Curve

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

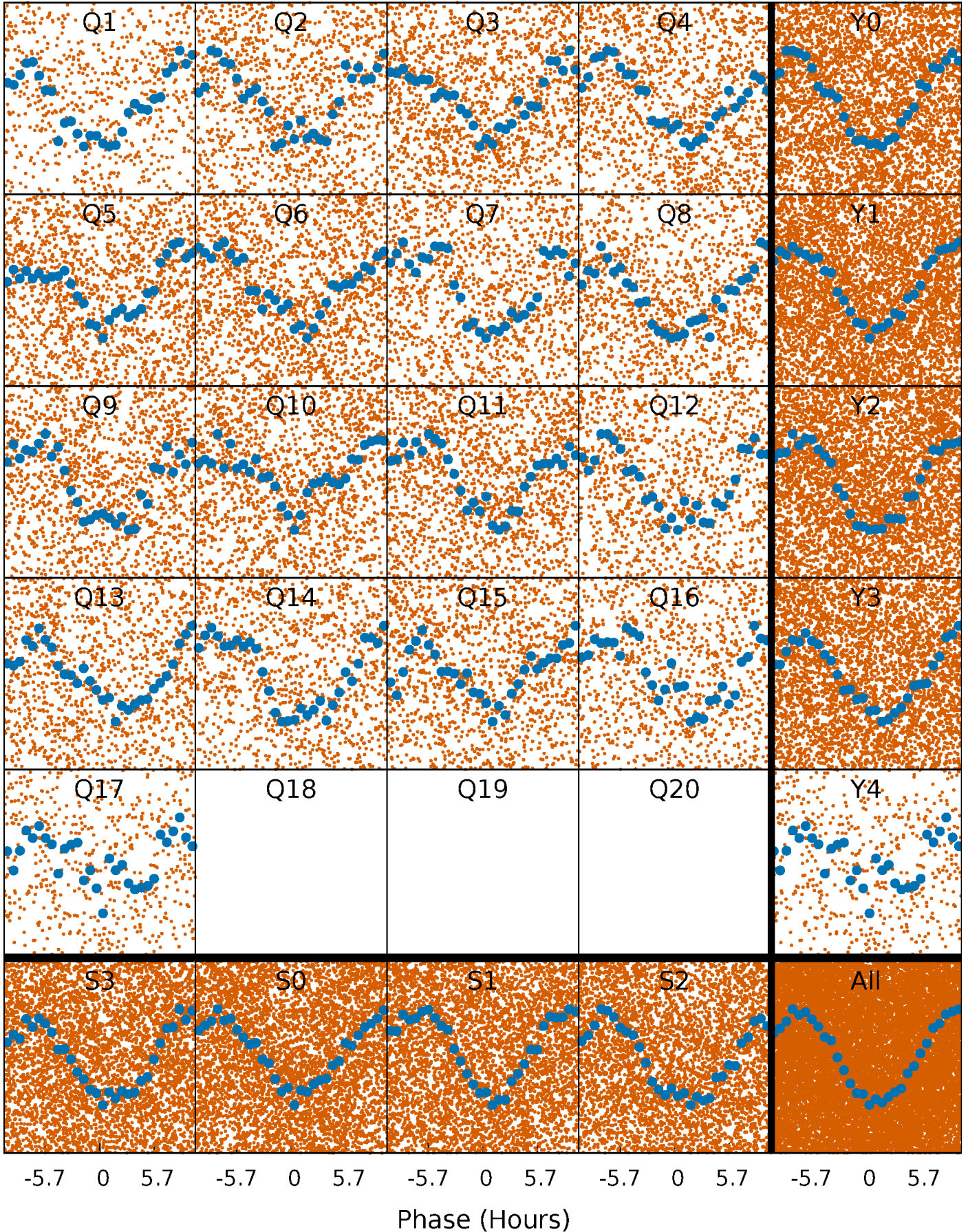


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



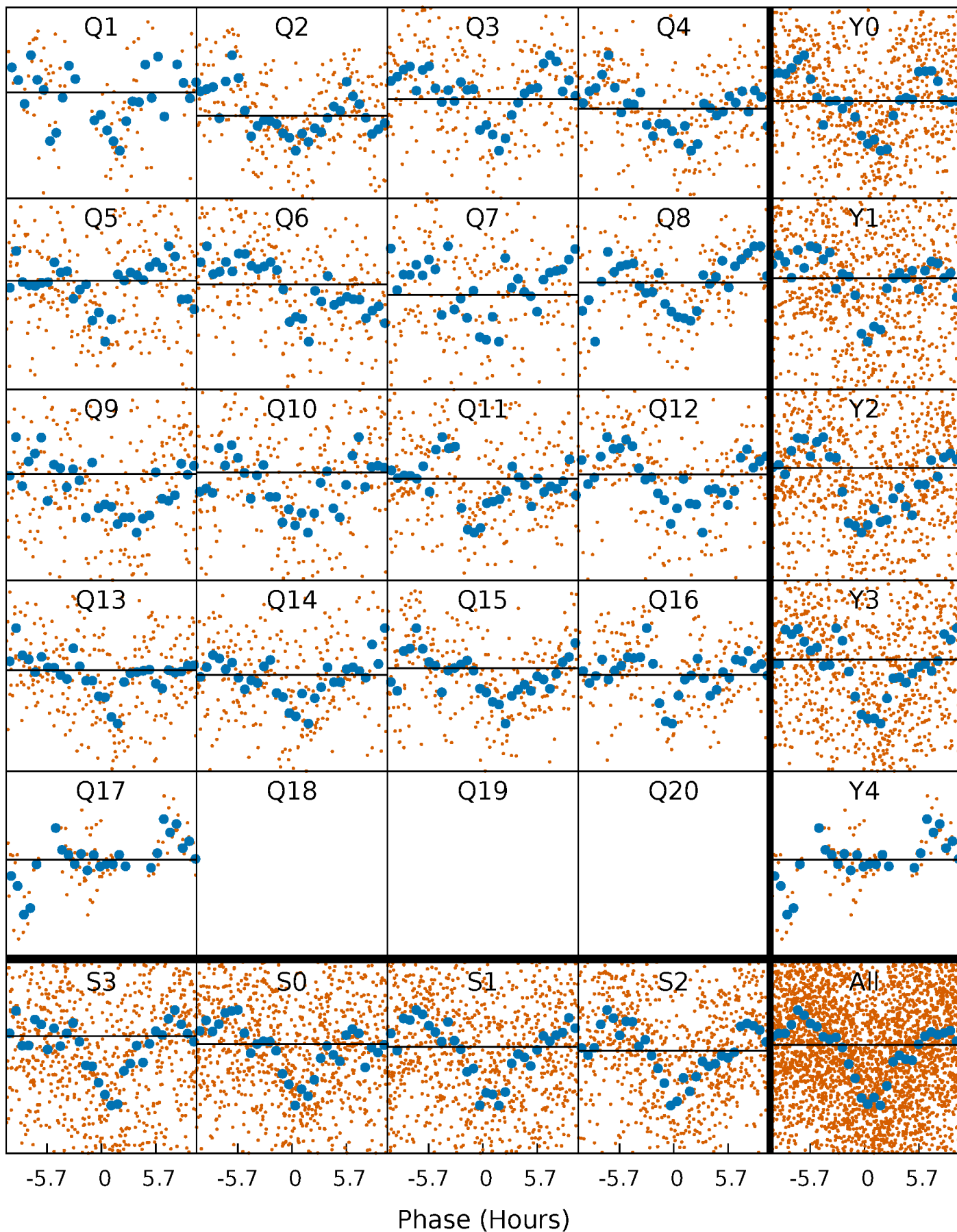
PDC Quarter-Phased Transit Curves

TCE 003340360-04 P= 1.394976 Days $T_0=131.664245$ (BKJD)



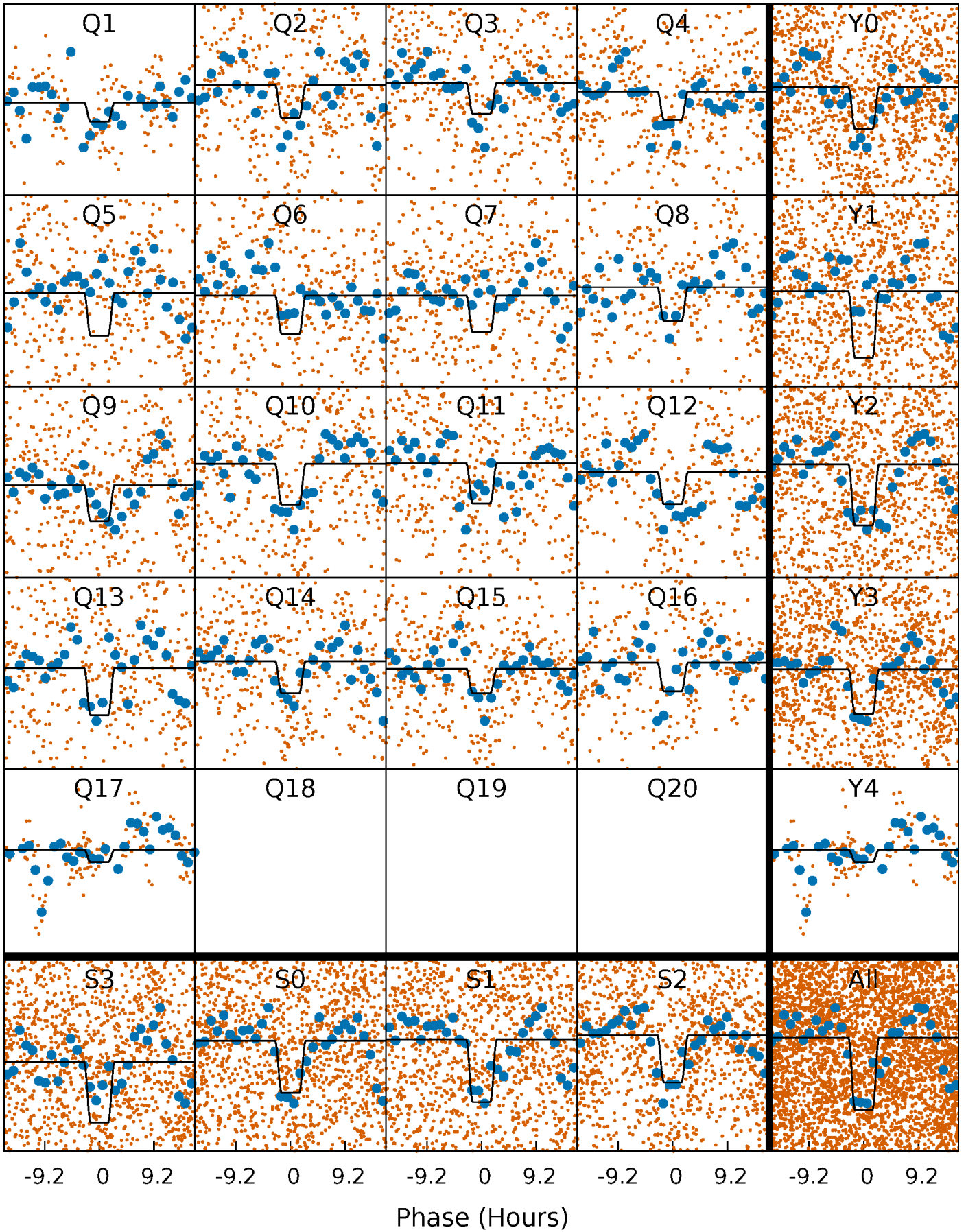
DV Quarter-Phased Transit Curves

TCE 003340360-04 P= 1.394976 Days $T_0=131.664245$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

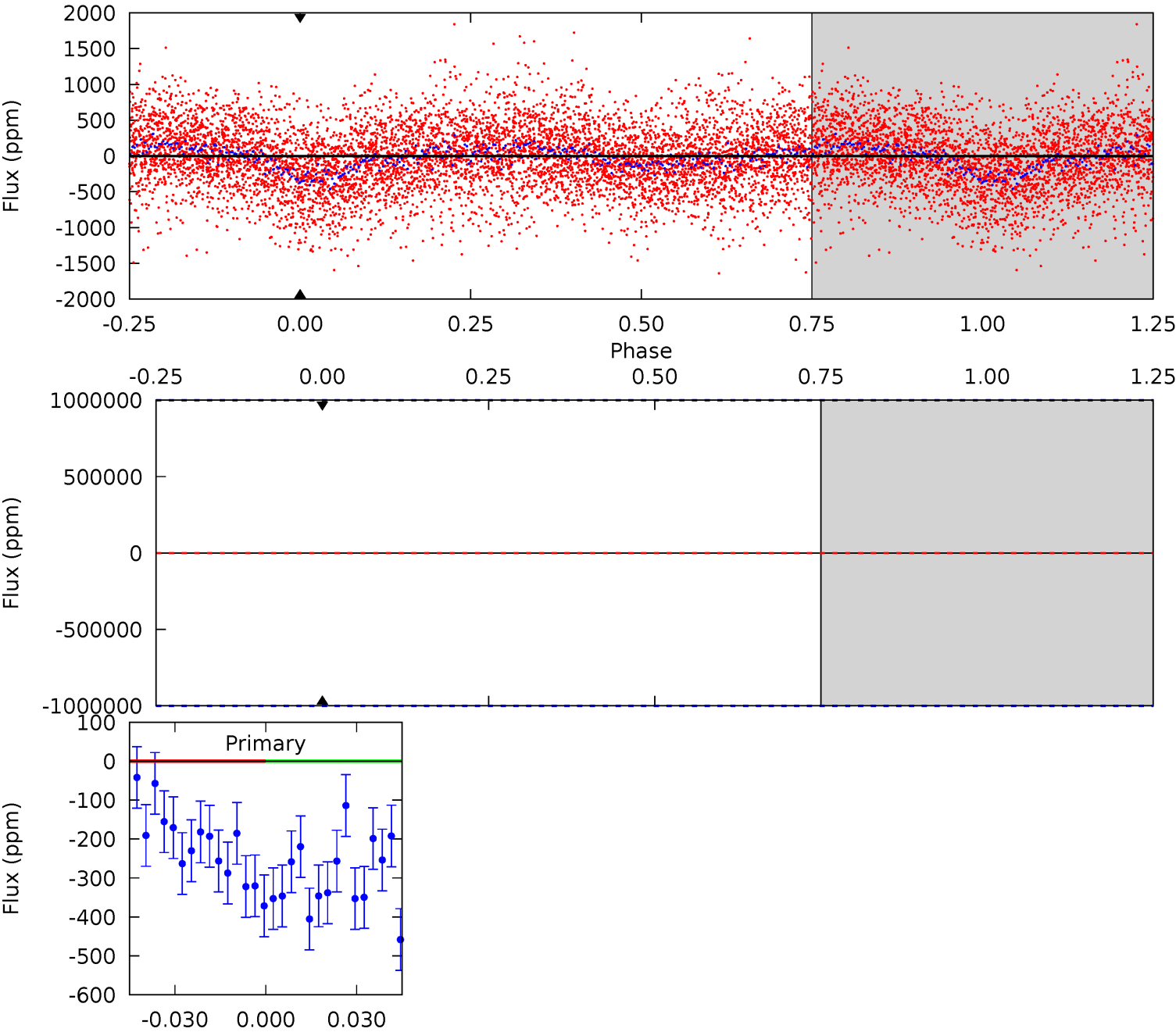
TCE 003340360-04 P= 1.394976 Days $T_0=131.727736$ (BKJD)



DV Model-Shift Uniqueness Test

003340360-04, P = 1.394976 Days, E = 131.664245 Days

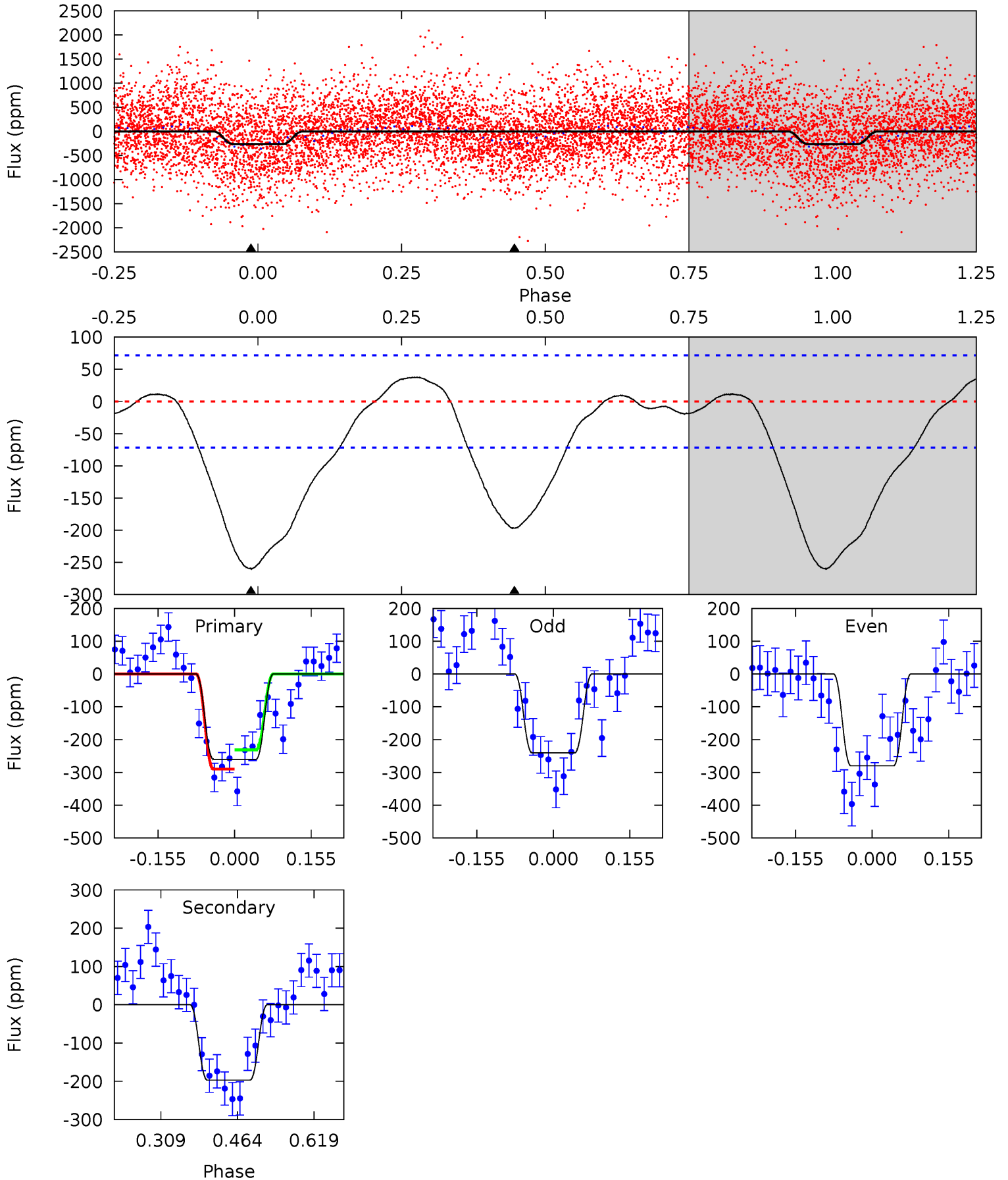
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003340360-04, P = 1.394976 Days, E = 131.727736 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	12.3	0	0	4.47	1.42	1.35	16.2	16.2	12.3	12.3	1.23	0.95	0.13	1.81



Stellar Parameters For KIC 003340360

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7522^{+210}_{-330}	$4.225^{+0.073}_{-0.218}$	$0.210^{+0.150}_{-0.400}$	$1.645^{+0.586}_{-0.195}$	$1.676^{+0.205}_{-0.251}$	$0.530^{+0.164}_{-0.293}$
	+3%/-4%	+2%/-5%	+71%/-190%	+36%/-12%	+12%/-15%	+31%/-55%
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 003340360-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$13.65^{+14.34}_{-9.62}$	3566^{+311}_{-220}	-5535^{+52150}_{-29762}	$-3.360^{+546.960}_{-333.723}$
Alt.	-197 ± 16	$13.39^{+14.66}_{-9.55}$	3549^{+261}_{-214}	3179^{+2846}_{-6333}	$0.496^{+5.482}_{-0.382}$

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 $A_{obs} \gg 1.0$

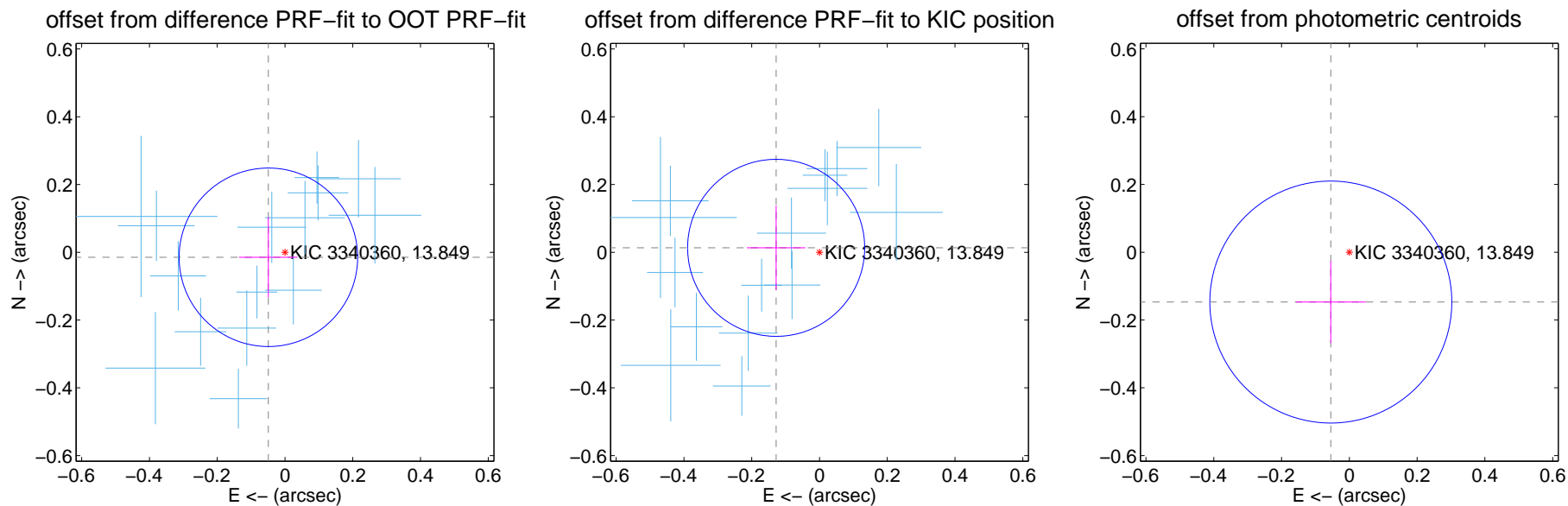
DV Centroid Data

Supplemental centroid analysis for 003340360-04. Kepler magnitude: 13.85. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

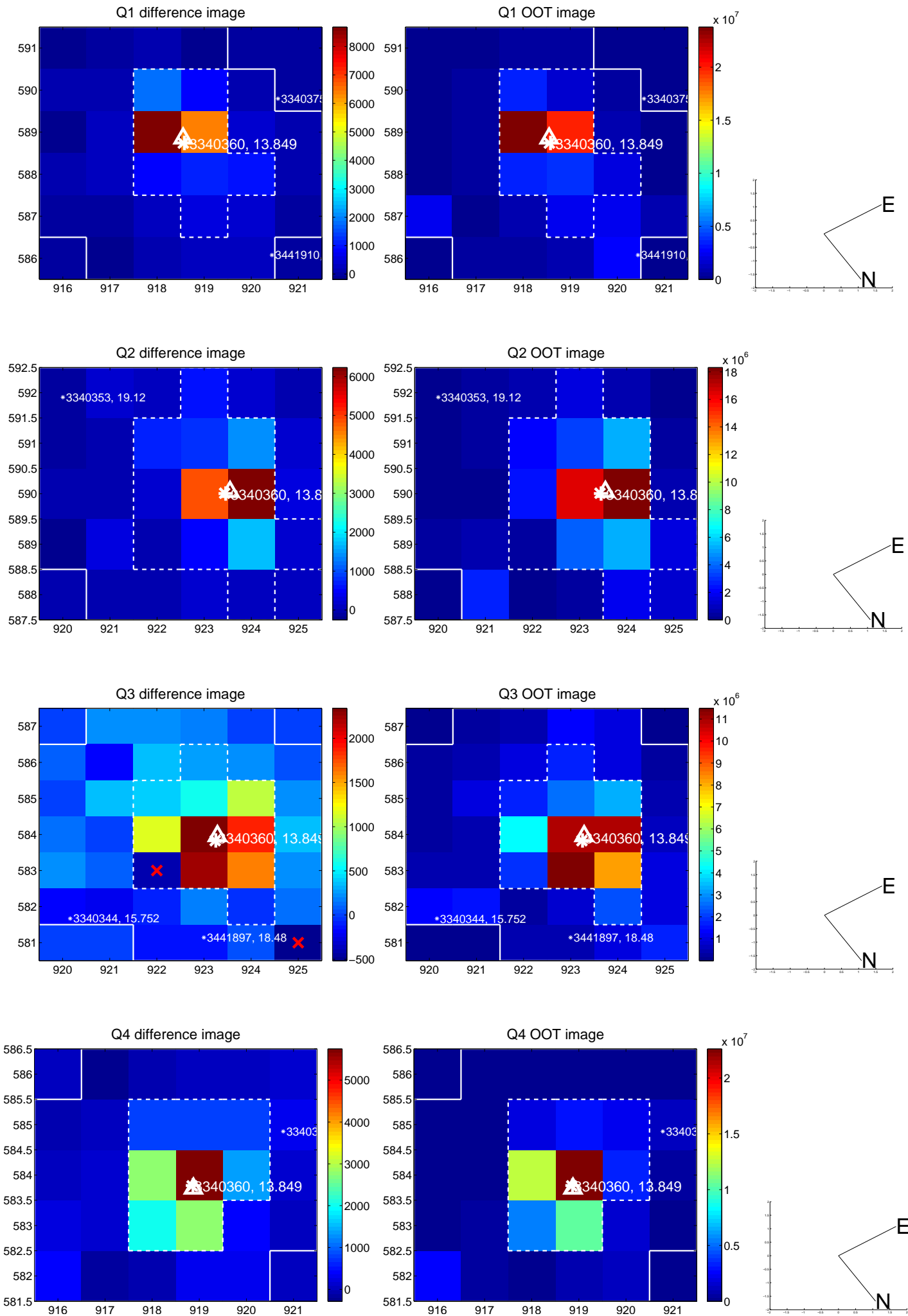
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.088	0.58	0.049 ± 0.086	-0.015 ± 0.118
PRF-fit source offset from KIC position	0.129 ± 0.087	1.48	0.128 ± 0.086	0.013 ± 0.124
photometric centroid source offset	0.16 ± 0.12	1.32	0.05 ± 0.10	-0.15 ± 0.12

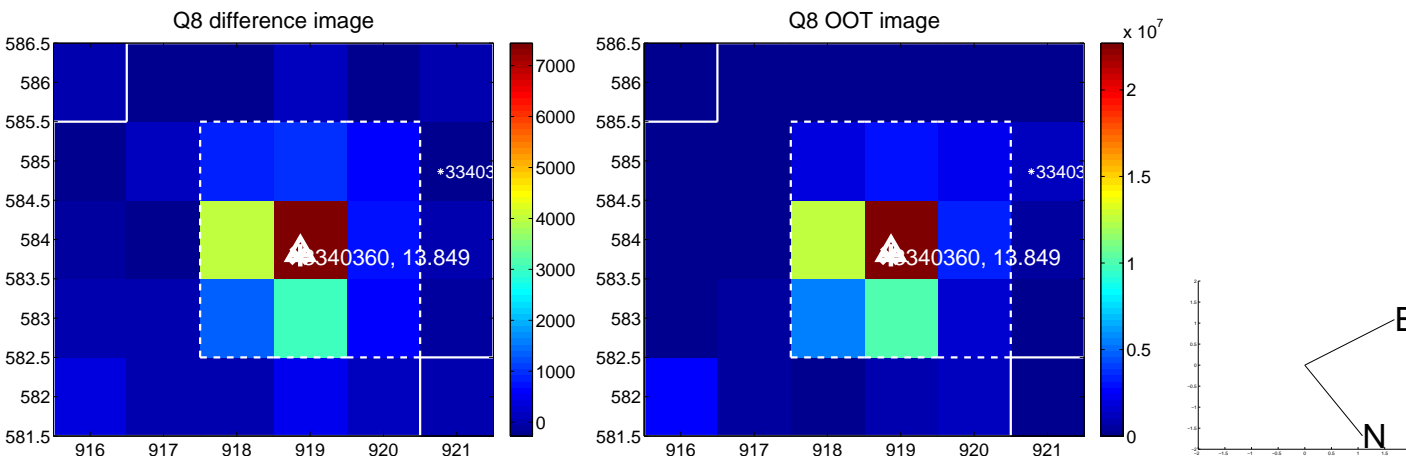
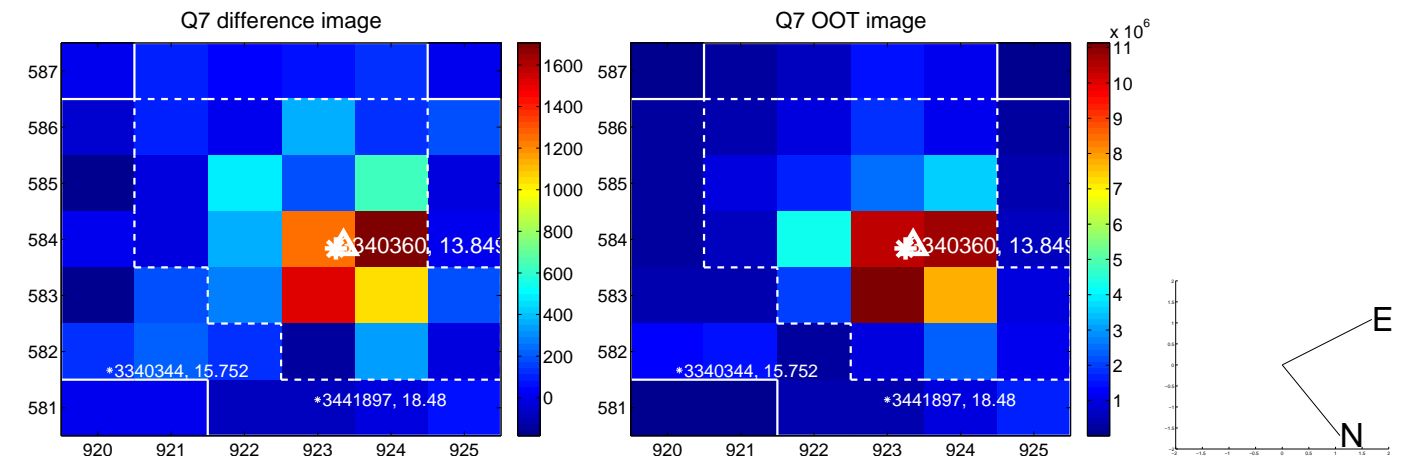
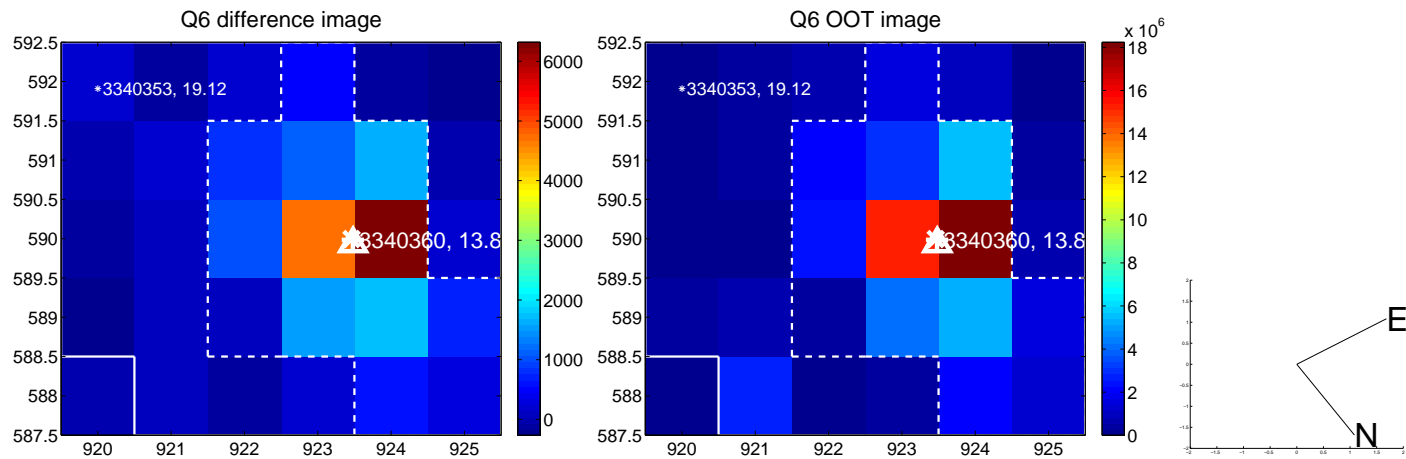
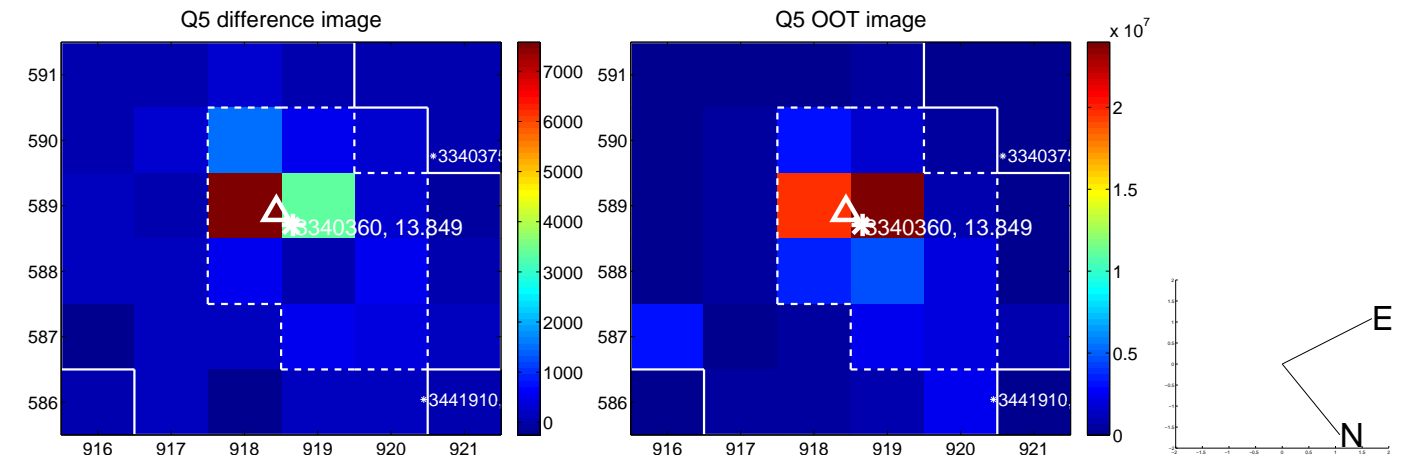


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

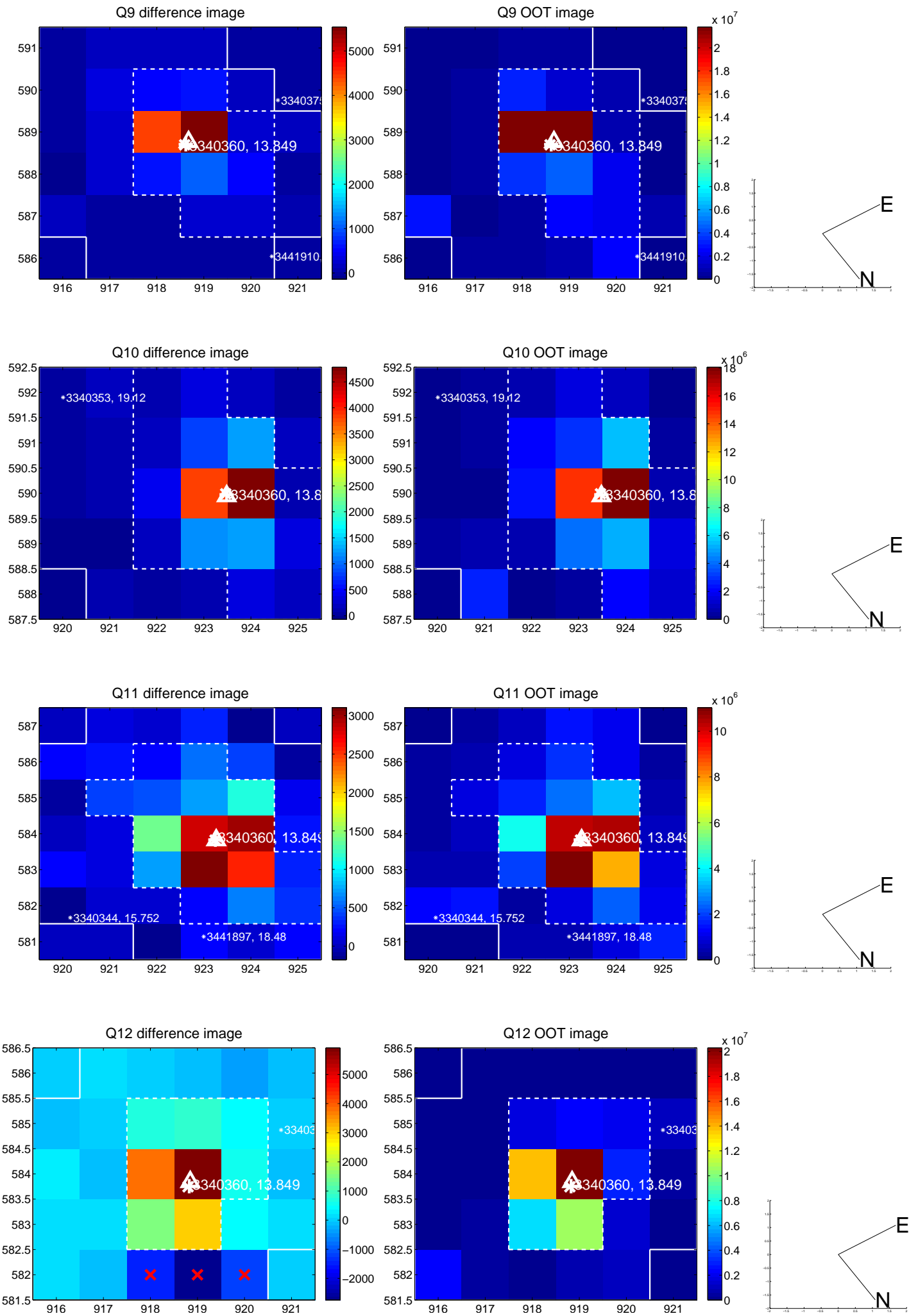
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



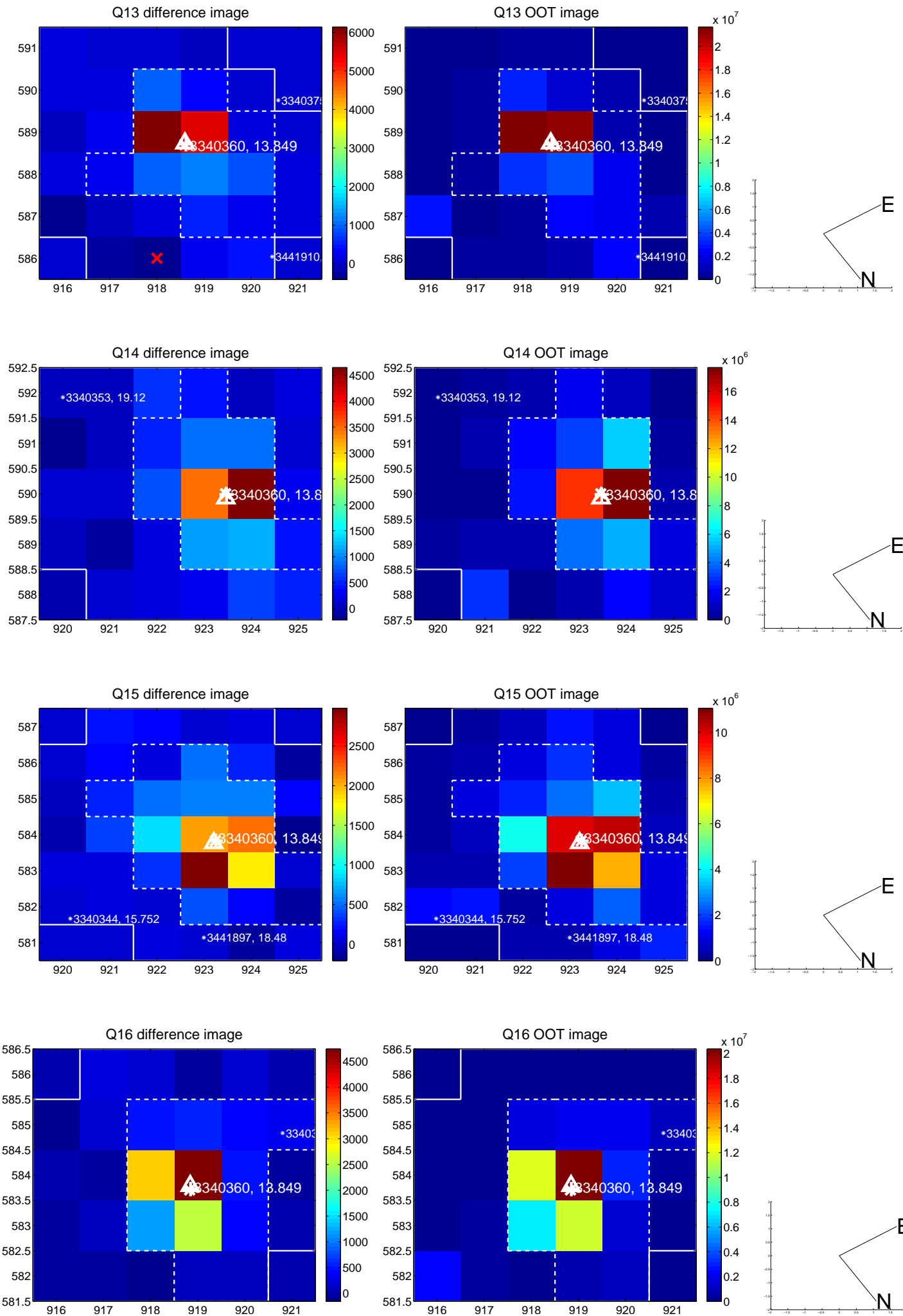
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



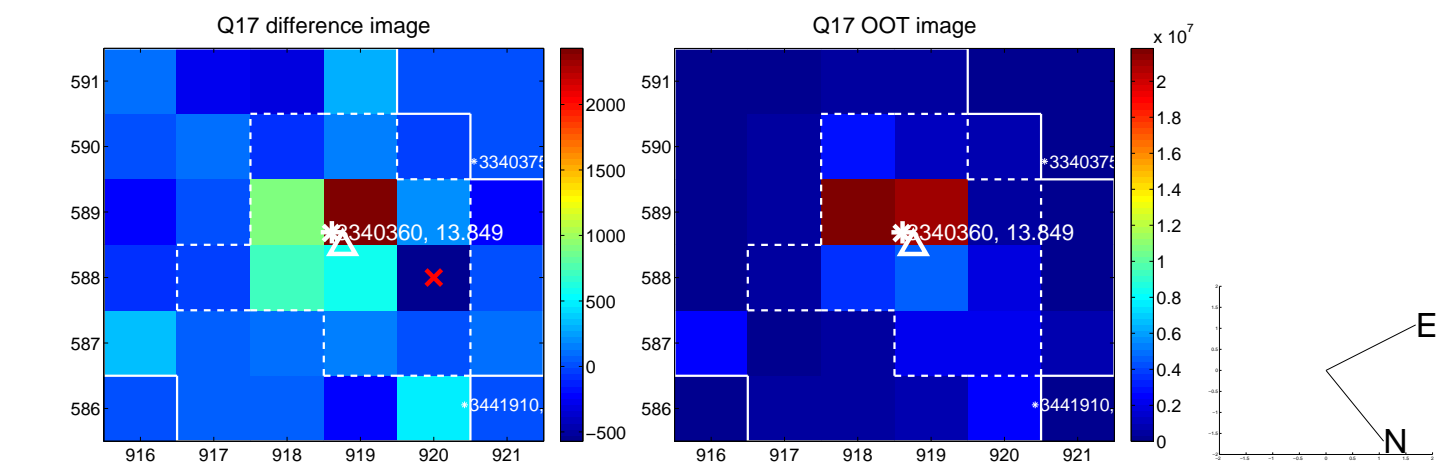
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



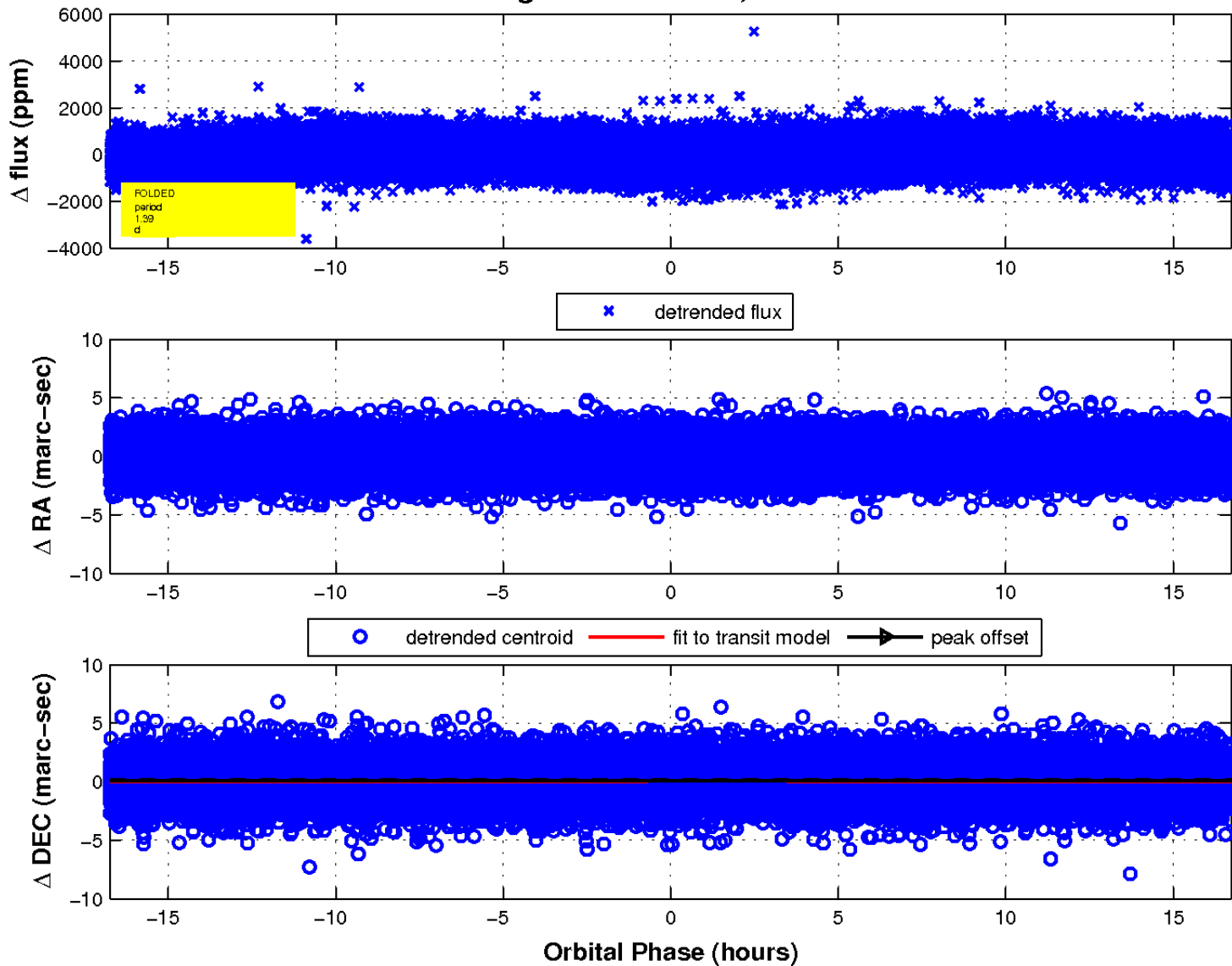
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

