

KIC 003337002

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})
003337002-01	OBS	No	0.527005	131.803625	153.5	0.862	10.4	13.9	3.55	7419	4.59	0.00
003337002-02	OBS	No	1.074396	132.068629	518.1	4.911	8.4	9.9	3.55	7419	15.43	50947.20
003337002-03	OBS	No	1.289711	131.967343	113.8	3.500	13.0	-1.0	3.55	7419	3.81	39934.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337002-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003337002-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
003337002-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_SATURATED

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

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

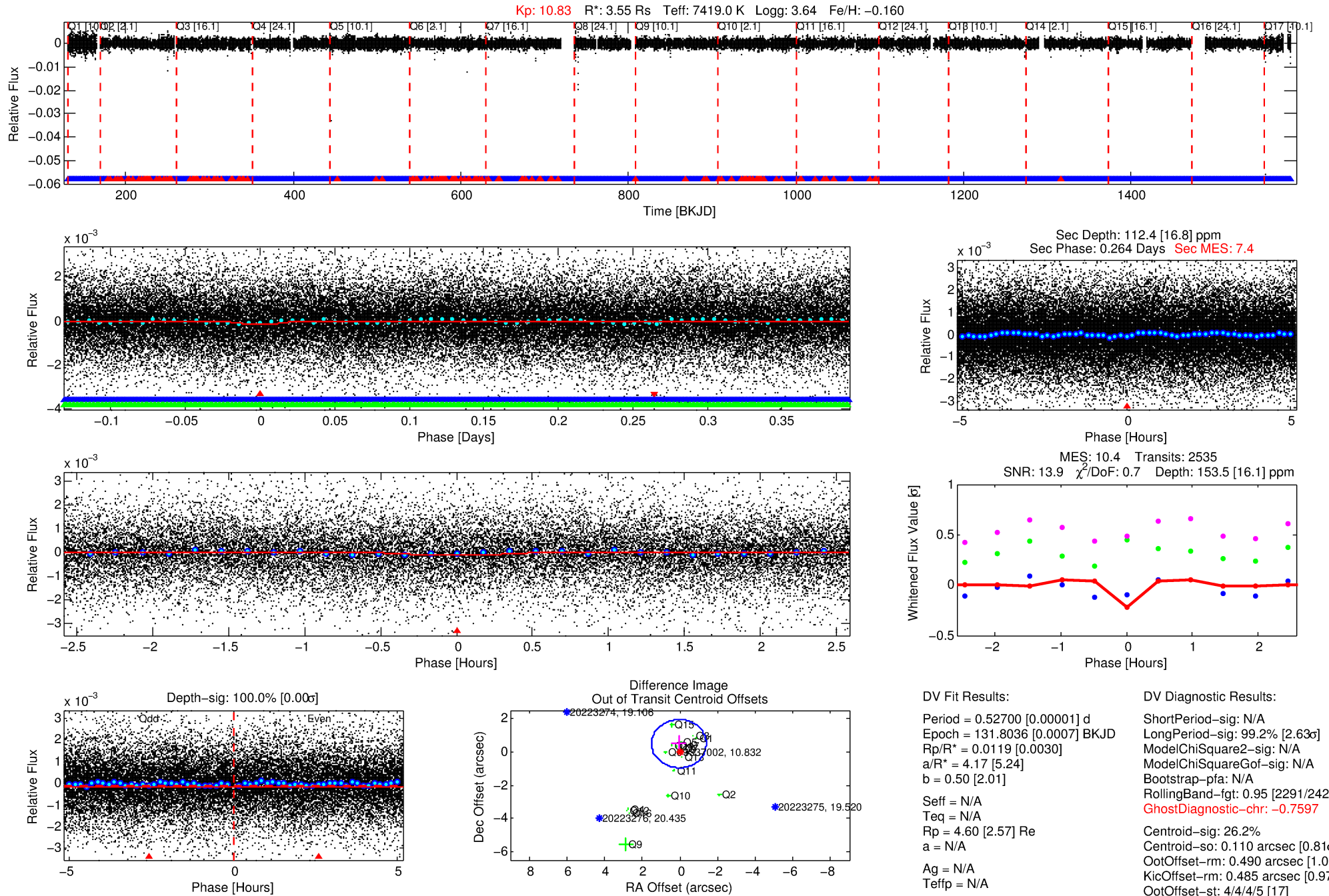
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003337002-01

No Significant Match Found

DV One-Page Summary

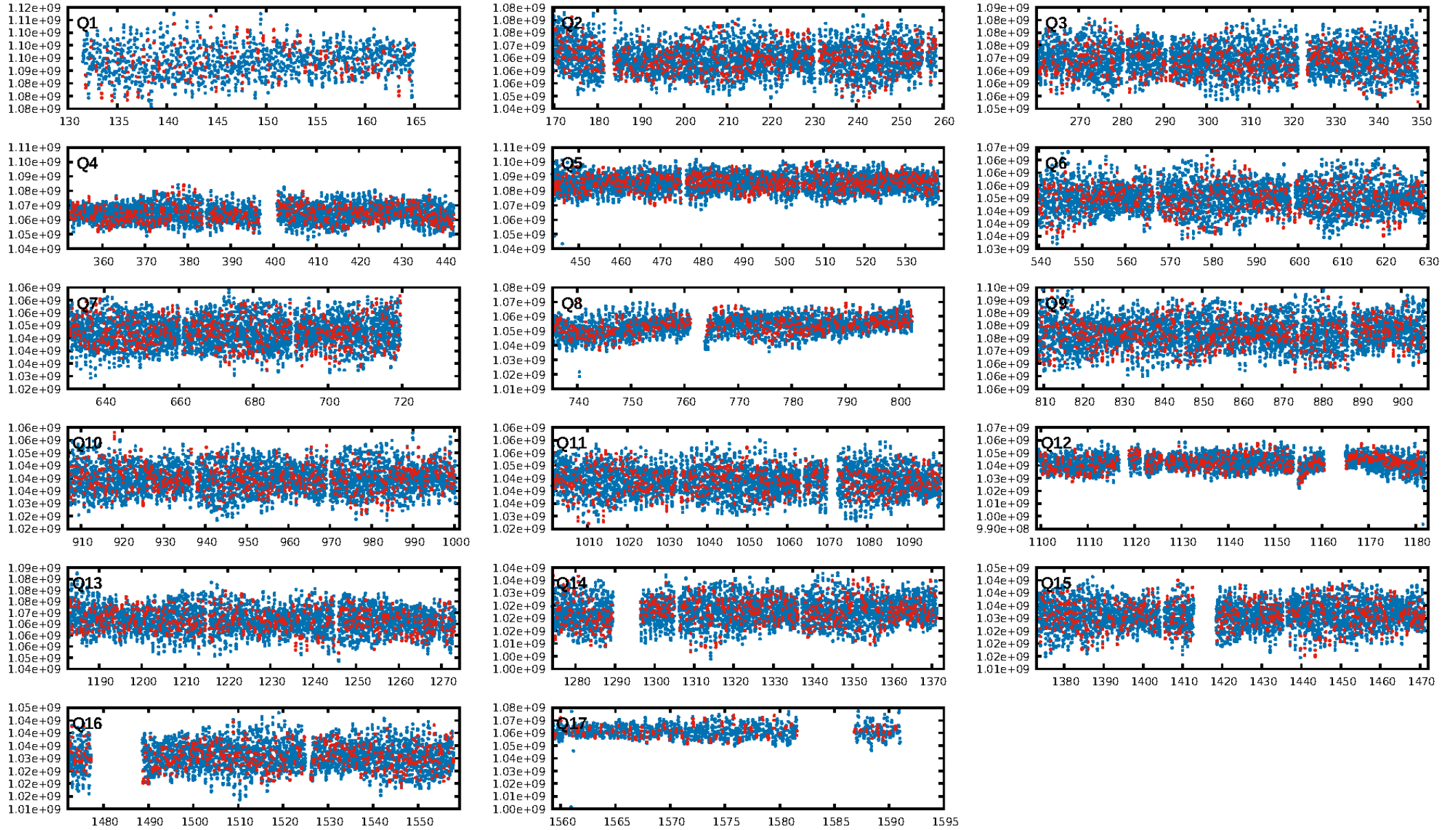
KIC: 3337002 Candidate: 1 of 3 Period: 0.527 d



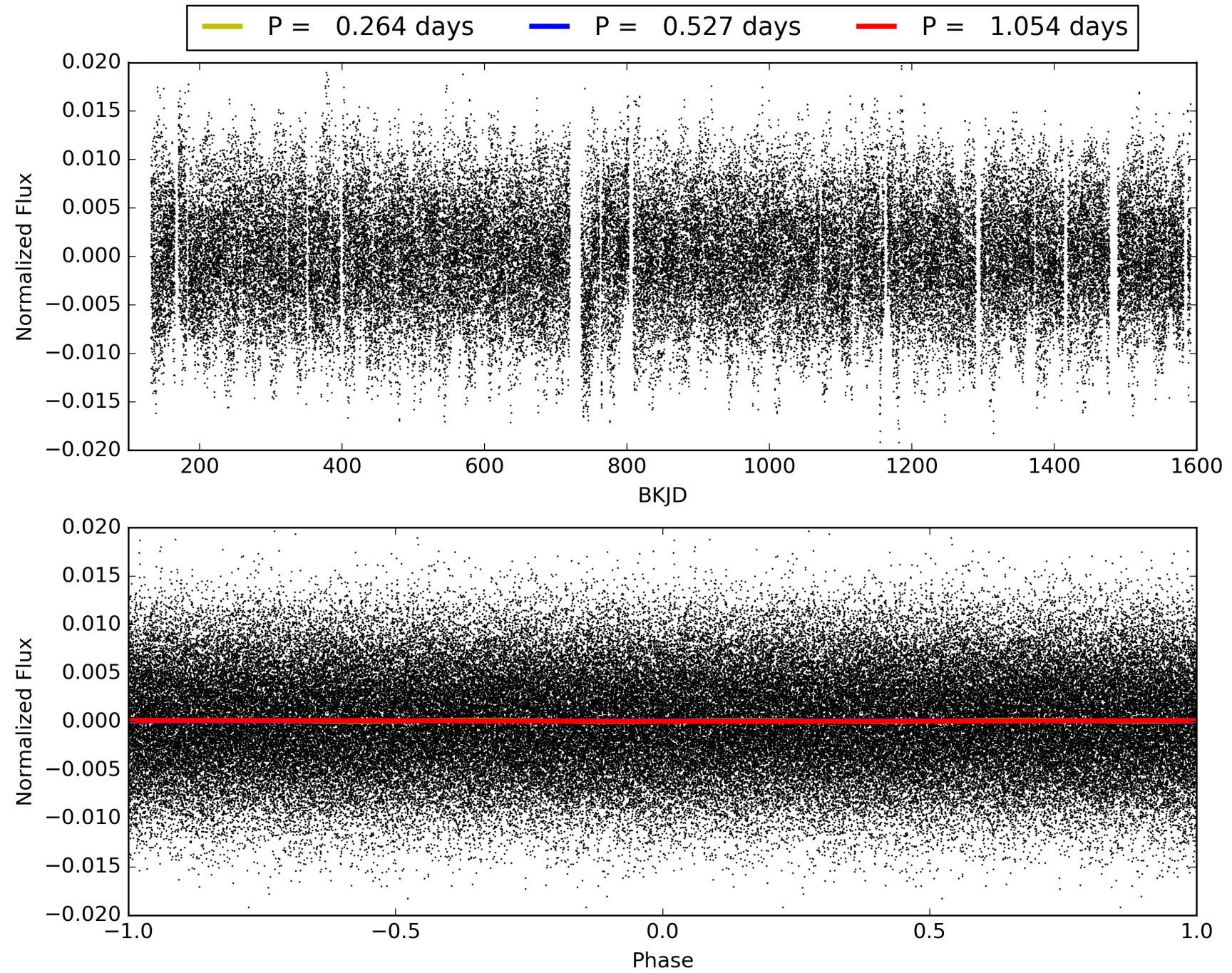
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:52:40 Z

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

TCE 003337002-01, PDC Light Curves

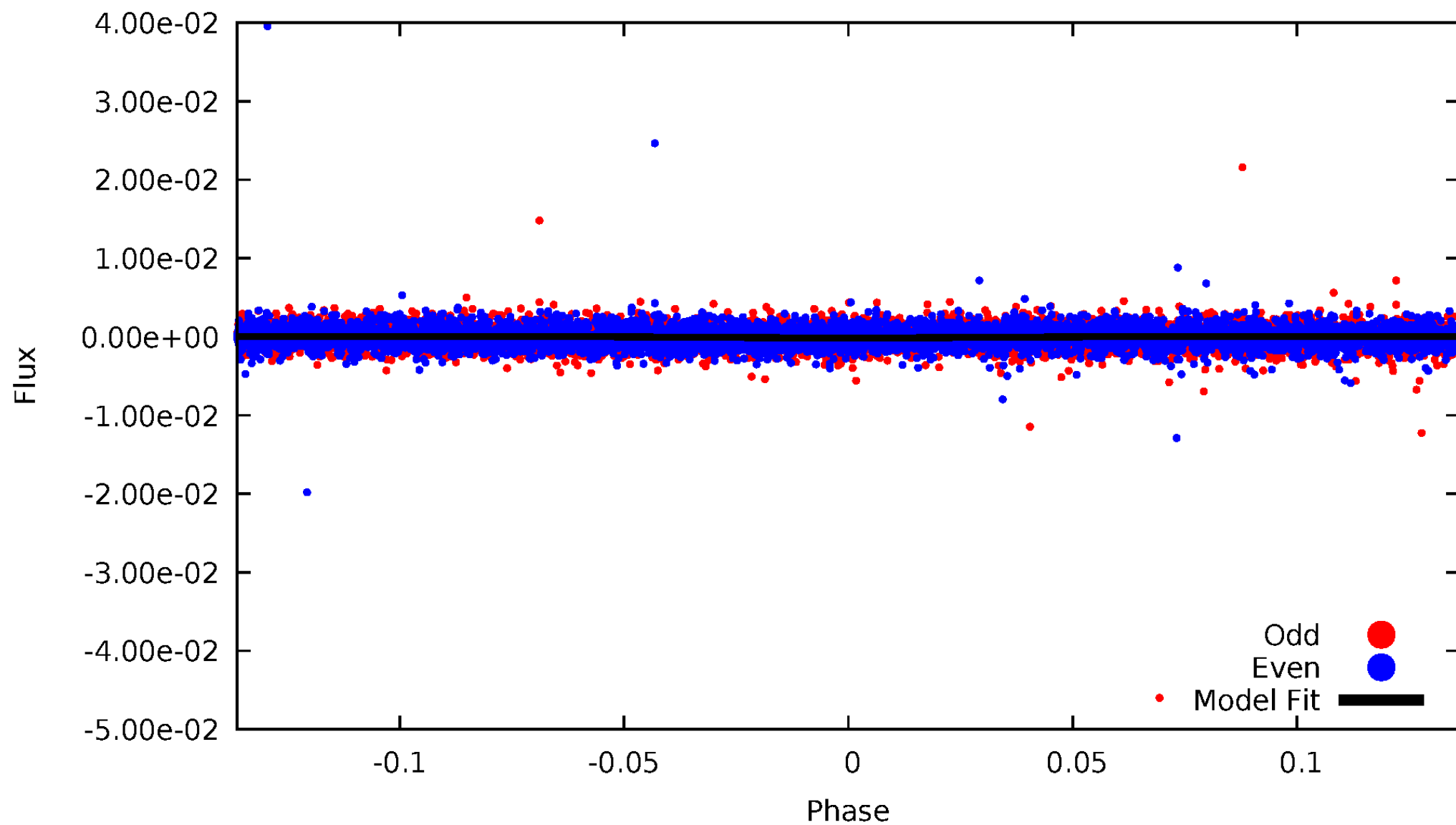


TCE 003337002-01



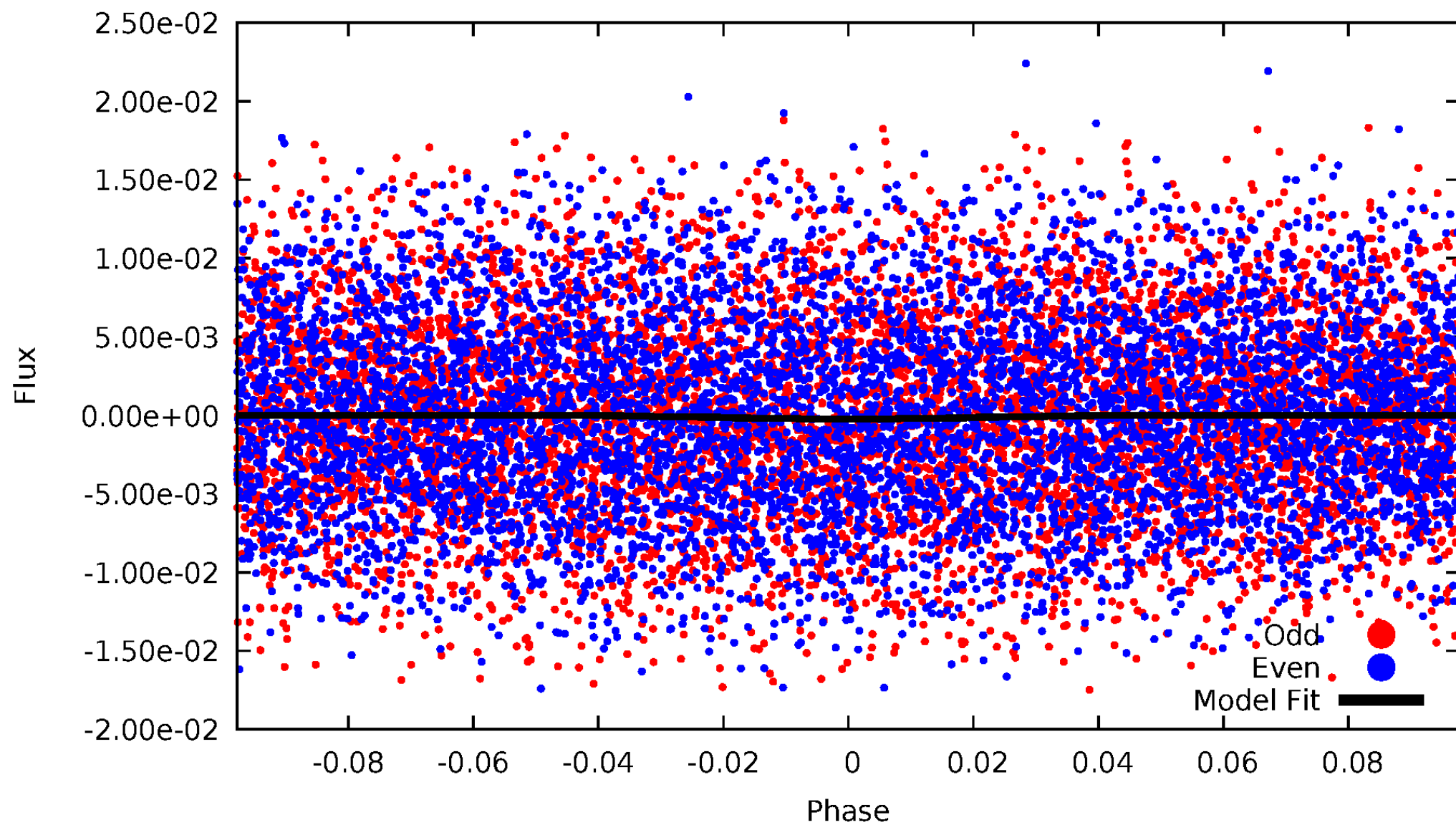
DV Odd/Even

TCE 003337002-01



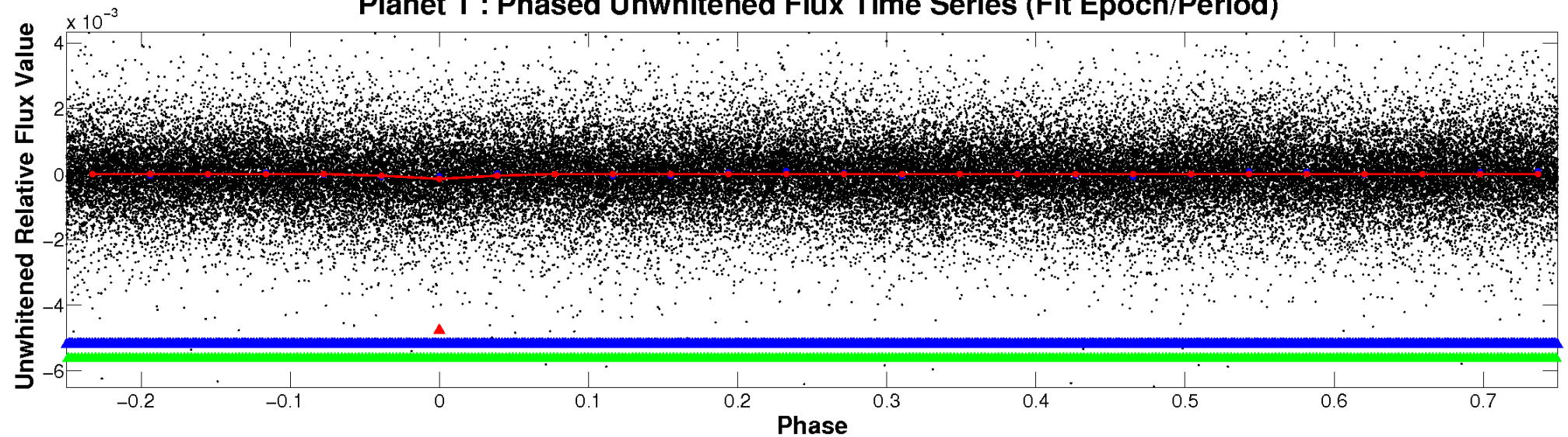
ALT Odd/Even

TCE 003337002-01

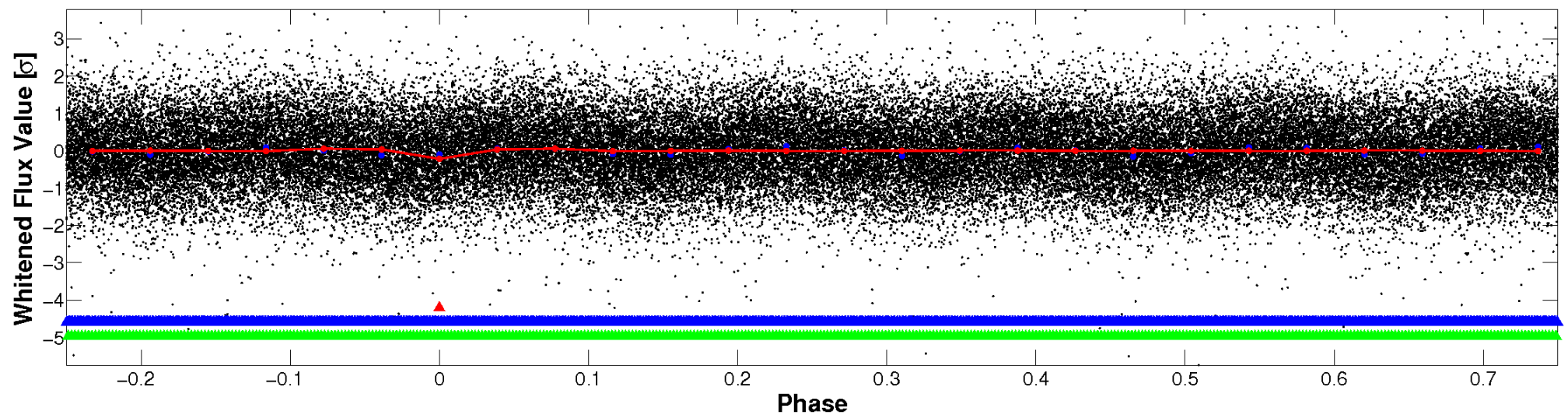


Non-Whitened Vs. Whitened Light Curve

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

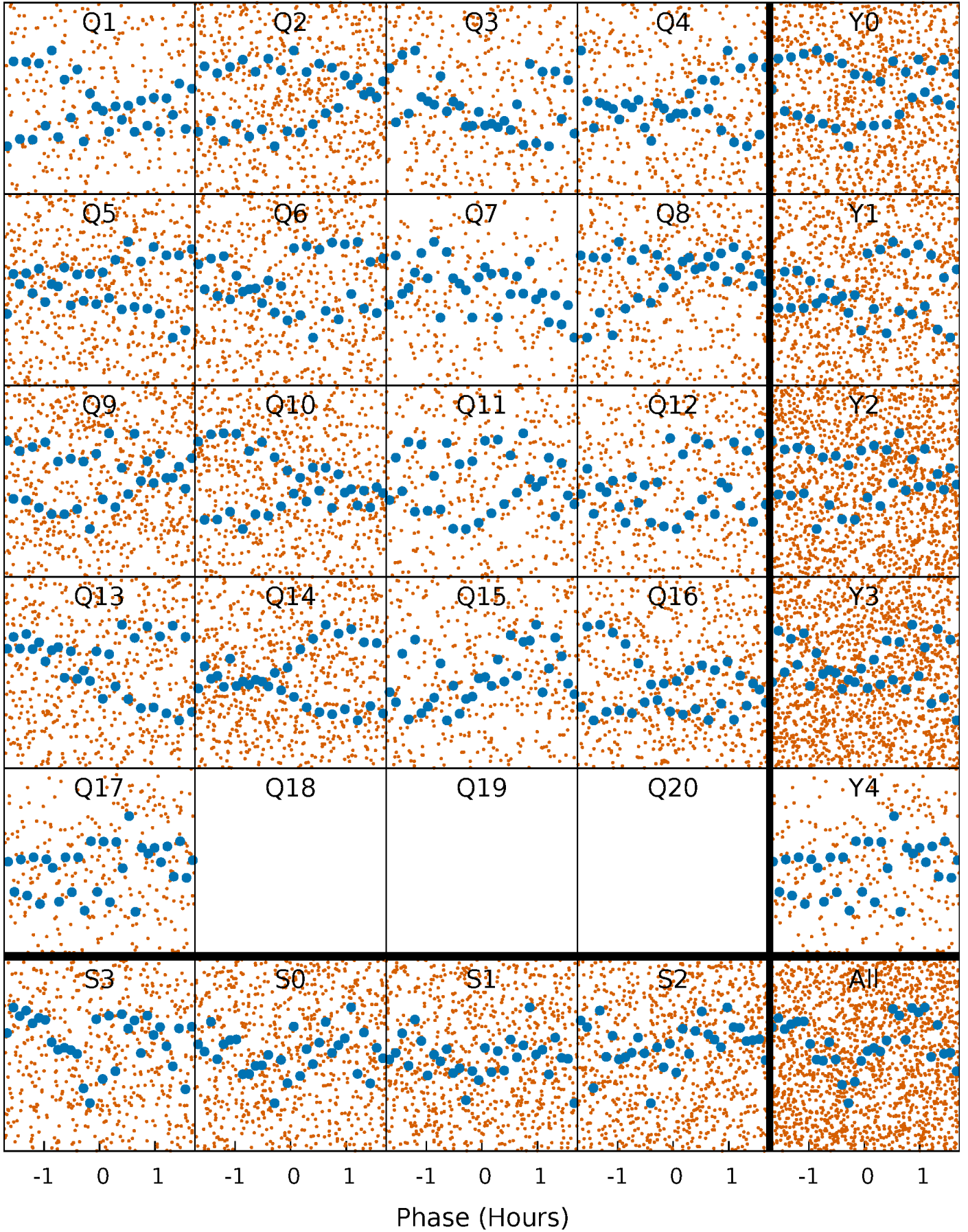


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



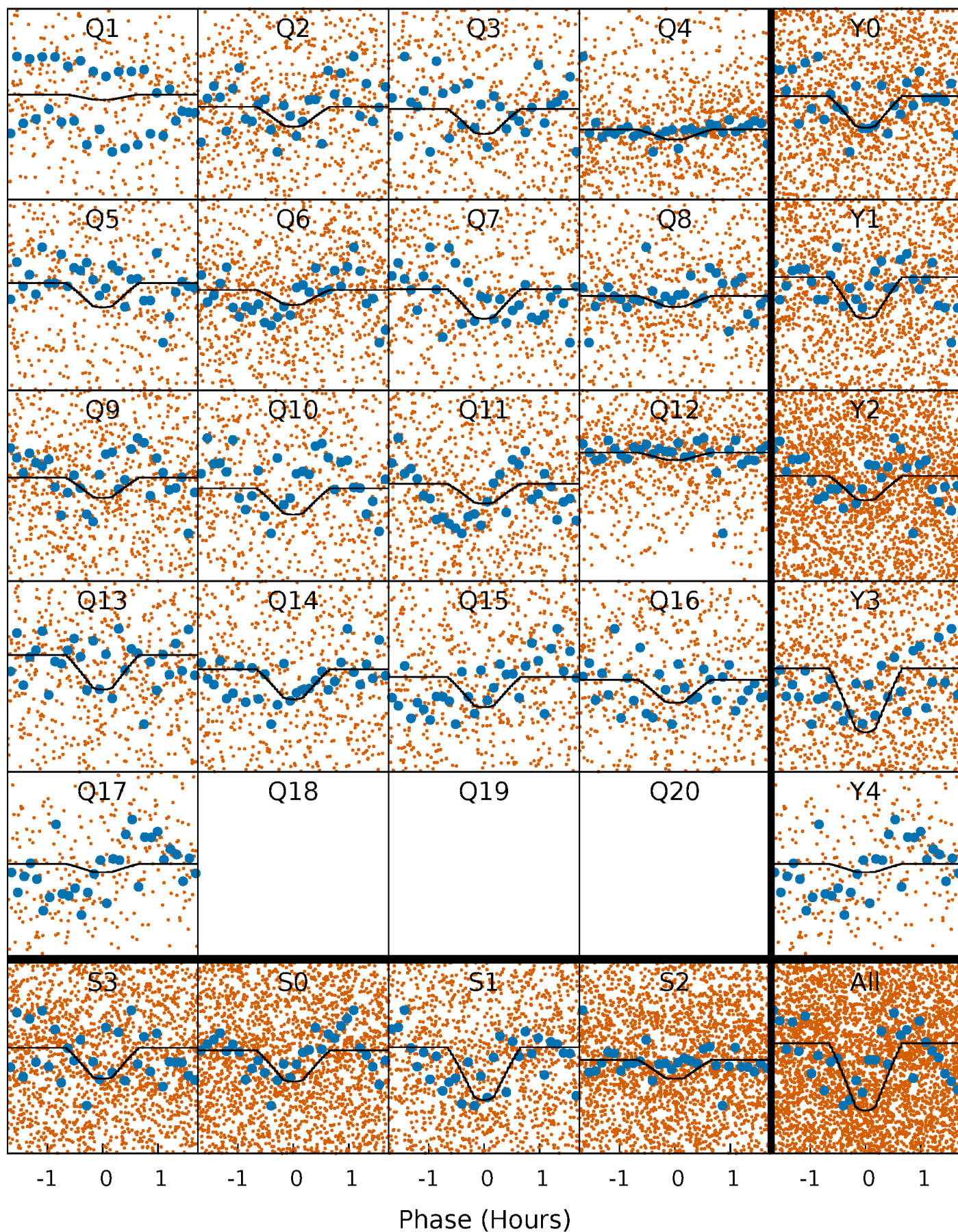
PDC Quarter-Phased Transit Curves

TCE 003337002-01 P= 0.527005 Days $T_0=131.803625$ (BKJD)



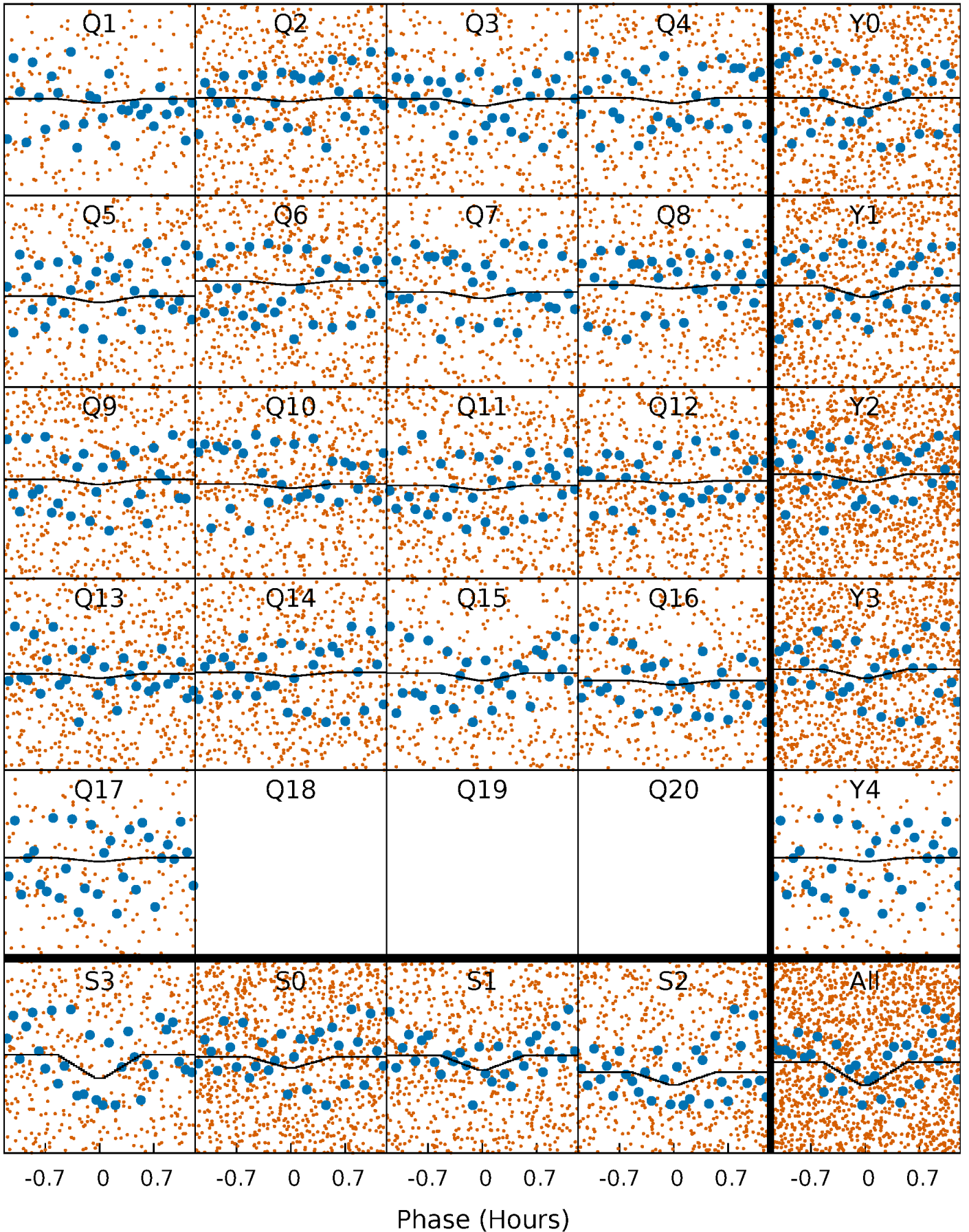
DV Quarter-Phased Transit Curves

TCE 003337002-01 P= 0.527005 Days $T_0=131.803625$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

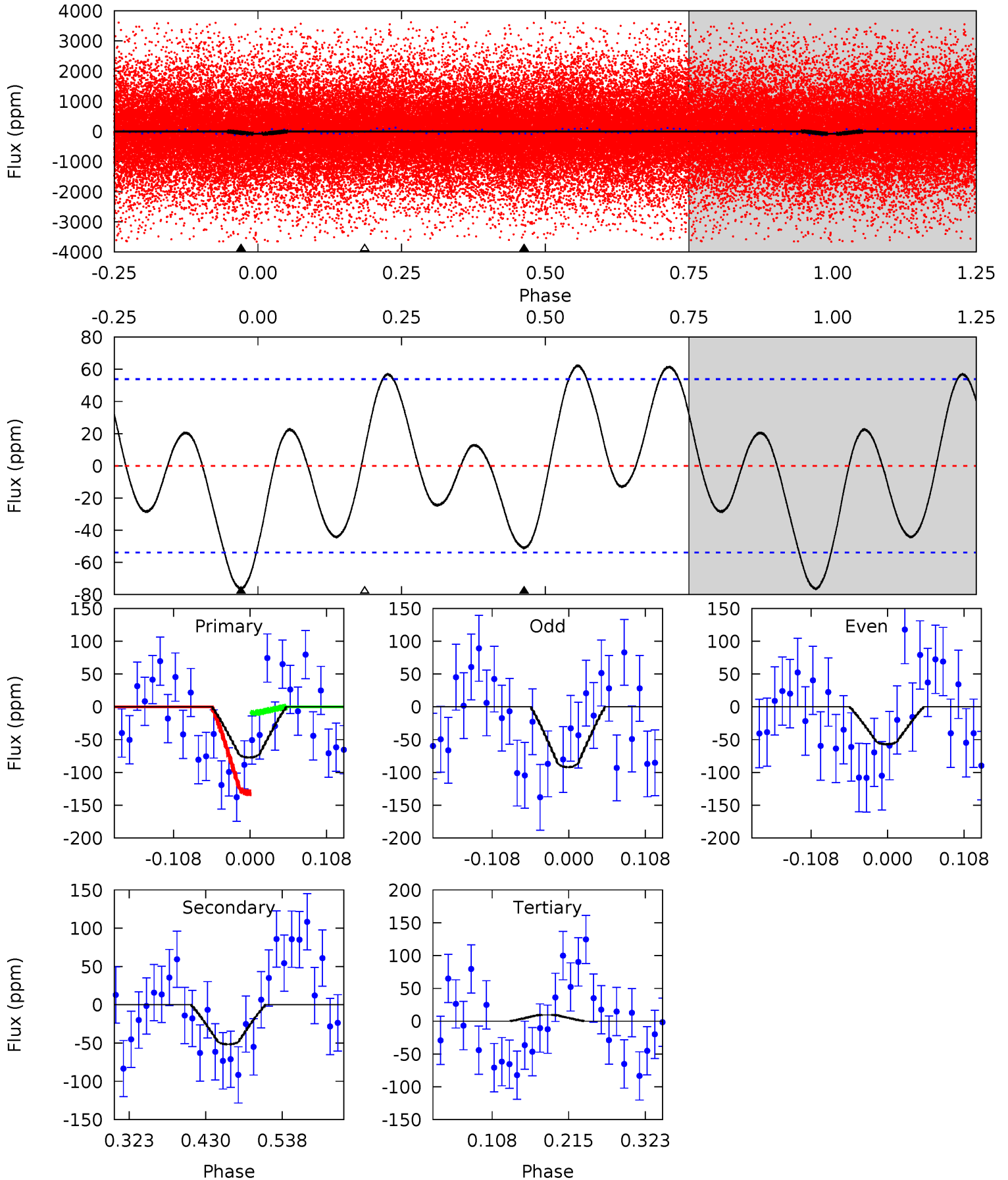
TCE 003337002-01 P= 0.526996 Days $T_0=131.803967$ (BKJD)



DV Model-Shift Uniqueness Test

003337002-01, P = 0.527005 Days, E = 131.276620 Days

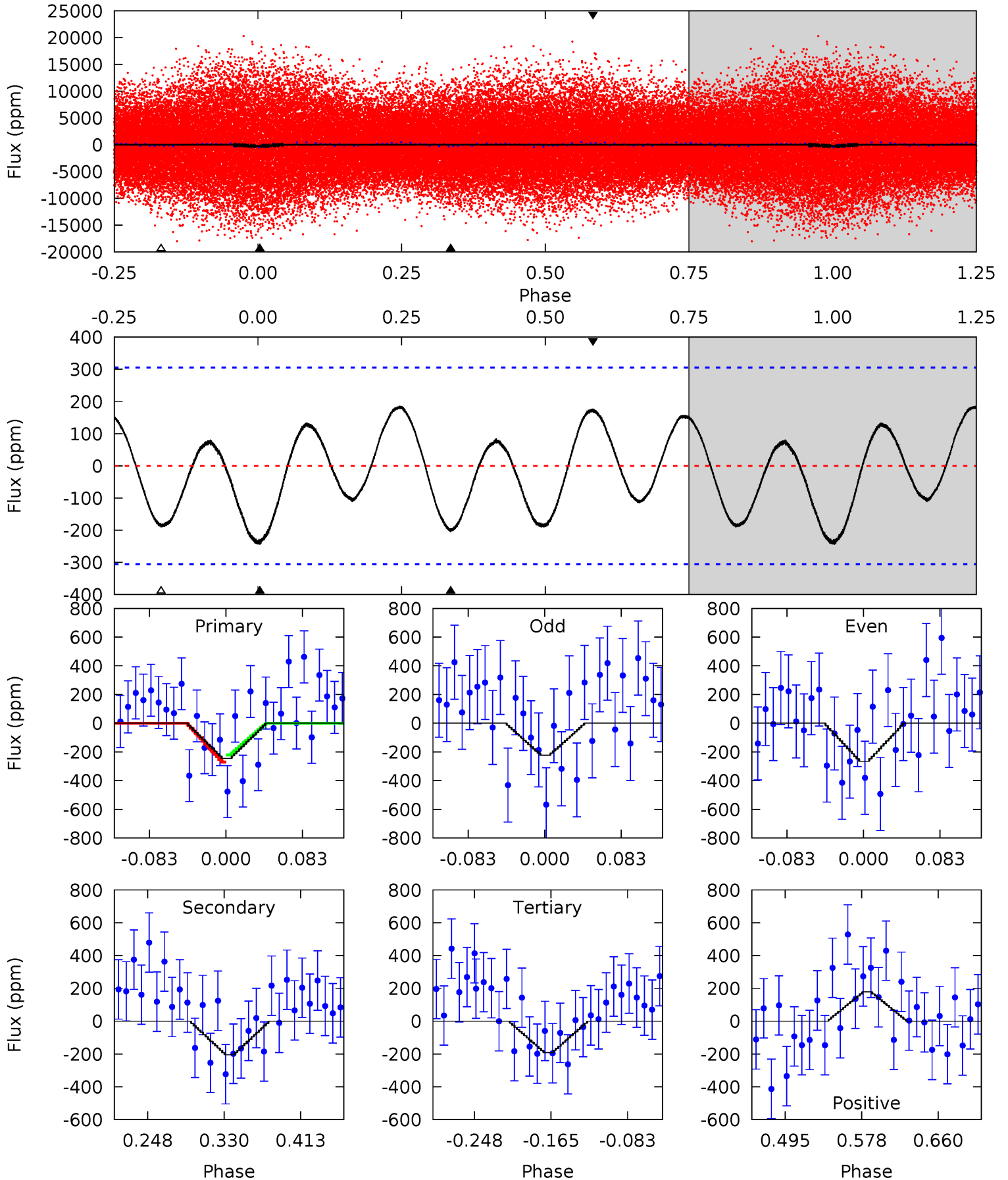
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.51	4.36	-0.81	0	4.55	1.61	2.56	7.32	6.51	5.16	4.36	1.48	0.64	0.45	5.17



Alt Model-Shift Uniqueness Test

003337002-01, P = 0.526996 Days, E = 131.276971 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.69	3.09	2.88	2.69	4.60	1.74	1.64	0.82	1.01	0.21	0.40	0.32	0.66	0.43	0.38



Stellar Parameters For KIC 003337002

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7419^{+230}_{-307}	$3.641^{+0.495}_{-0.055}$	$-0.160^{+0.250}_{-0.300}$	$3.553^{+0.331}_{-1.763}$	$2.017^{+0.100}_{-0.601}$	$0.063^{+0.357}_{-0.012}$
	+3%/-4%	+14%/-2%	+156%/-188%	+9%/-50%	+5%/-30%	+563%/-19%
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 003337002-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-52 ± 12	$3.99^{+1.40}_{-1.35}$	6517^{+461}_{-799}	4533^{+1527}_{-8454}	$0.452^{+0.601}_{-0.212}$
Alt.	-205 ± 66	$5.43^{+1.53}_{-1.69}$	6483^{+463}_{-822}	6260^{+1337}_{-1224}	$0.956^{+0.994}_{-0.433}$

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 $A_{obs} \gg 1.0$

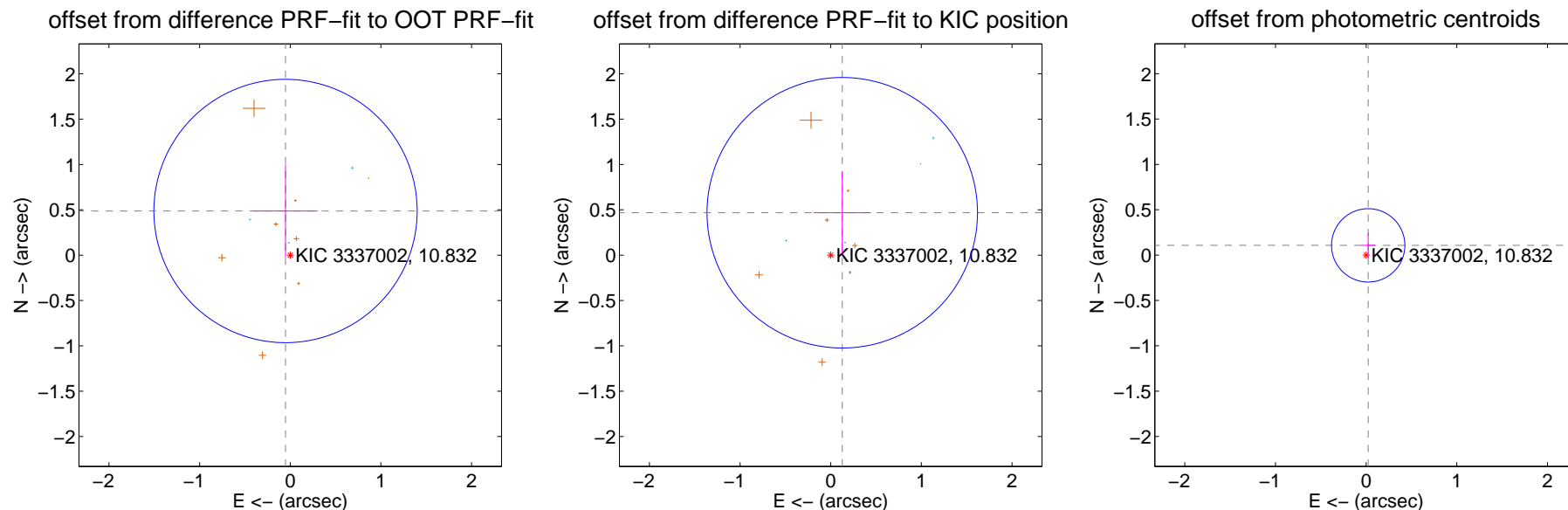
DV Centroid Data

Supplemental centroid analysis for 003337002-01. **Kepler magnitude: 10.83.** Transit SNR 13.91

There are 5 quarters with good PRF difference image offsets

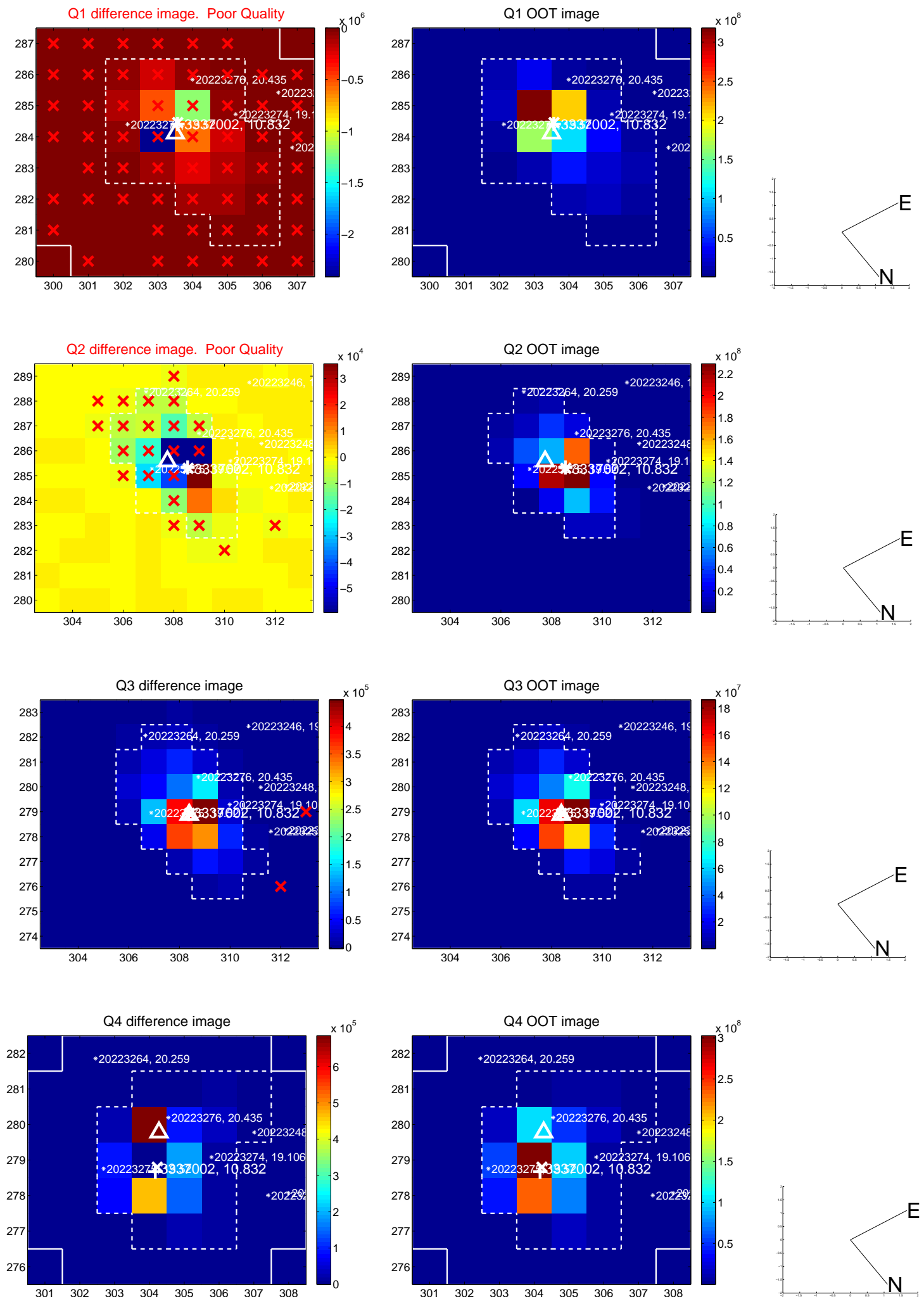
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.490 ± 0.484	1.01	0.052 ± 0.355	0.487 ± 0.511
PRF-fit source offset from KIC position	0.485 ± 0.497	0.97	-0.127 ± 0.316	0.468 ± 0.454
photometric centroid source offset	0.11 ± 0.13	0.81	-0.02 ± 0.08	0.11 ± 0.14

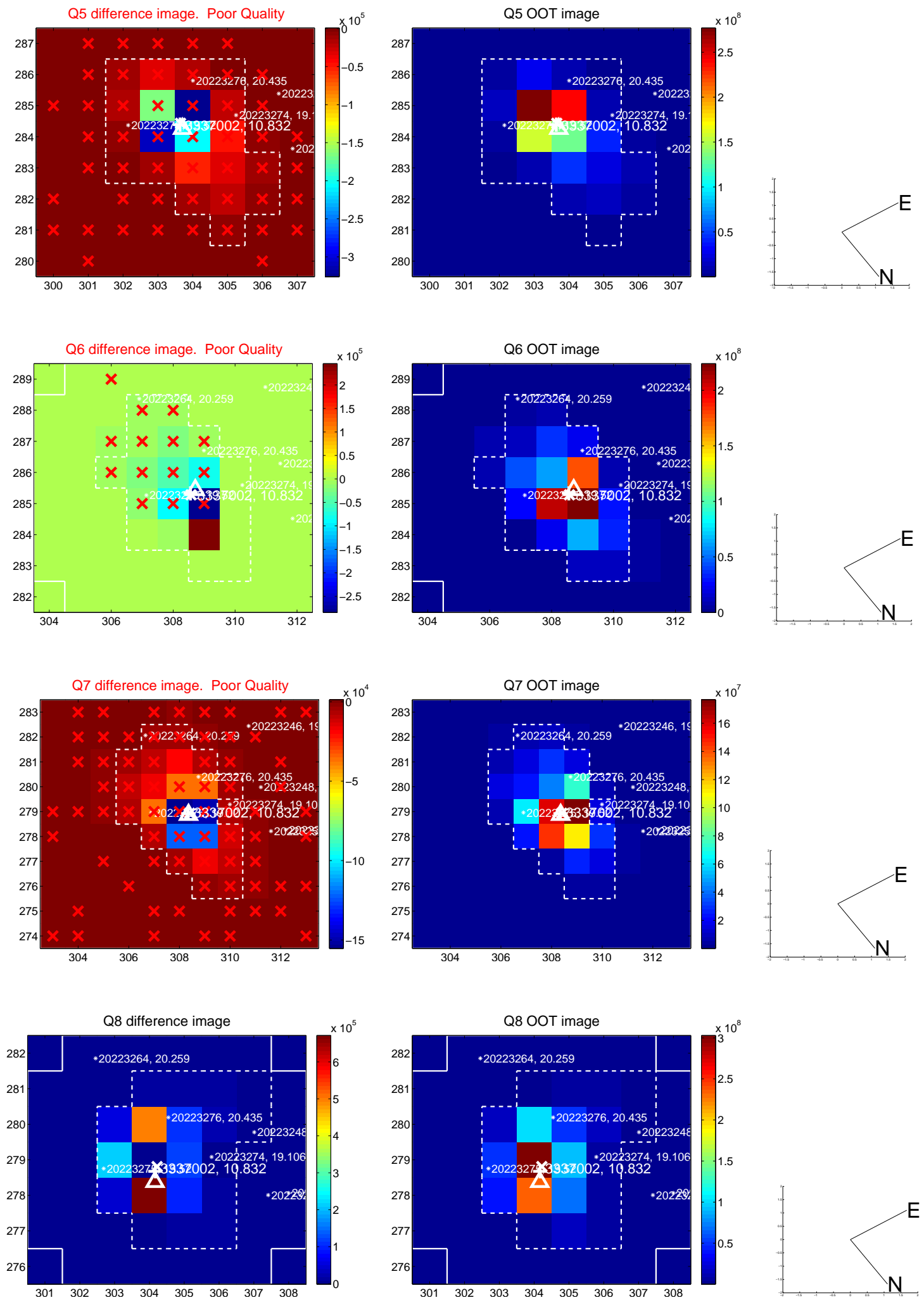


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

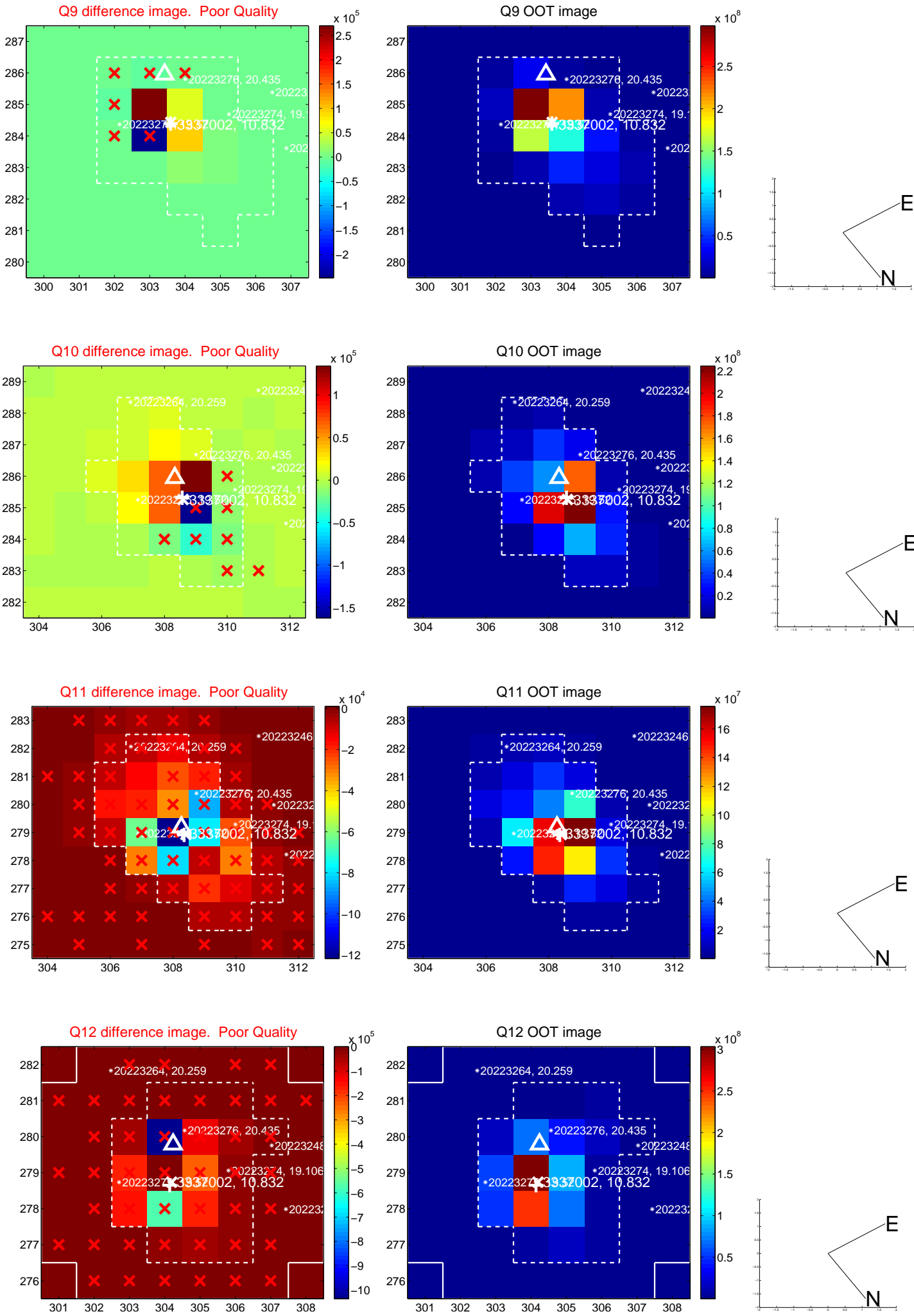
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



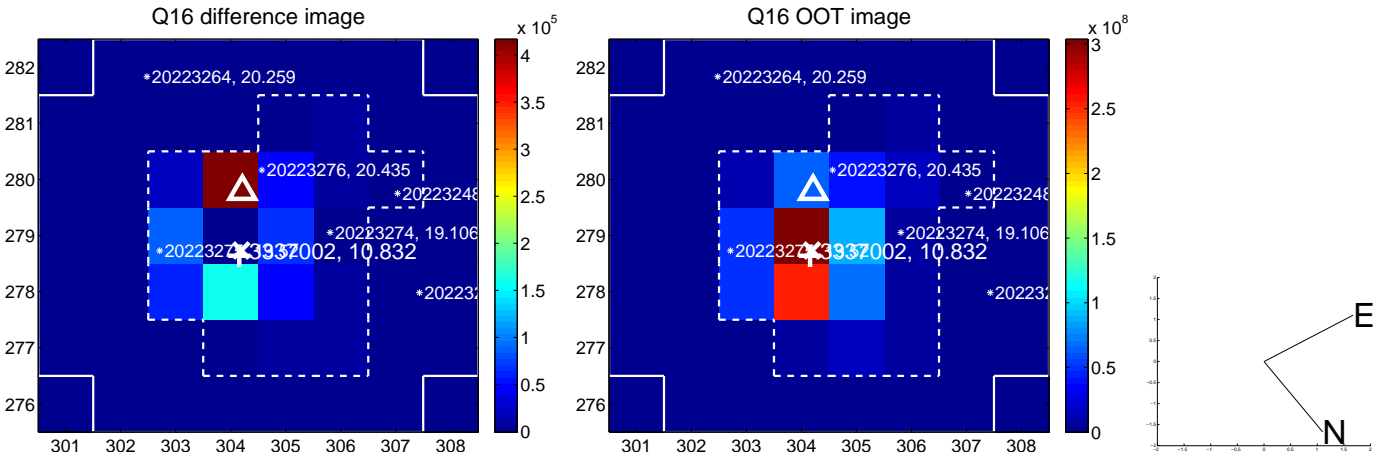
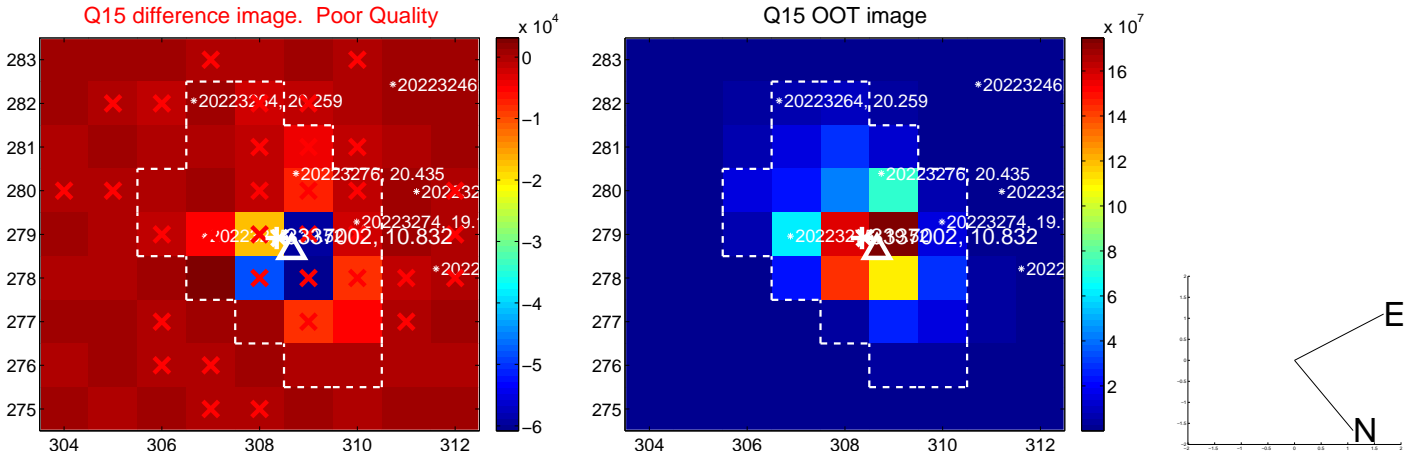
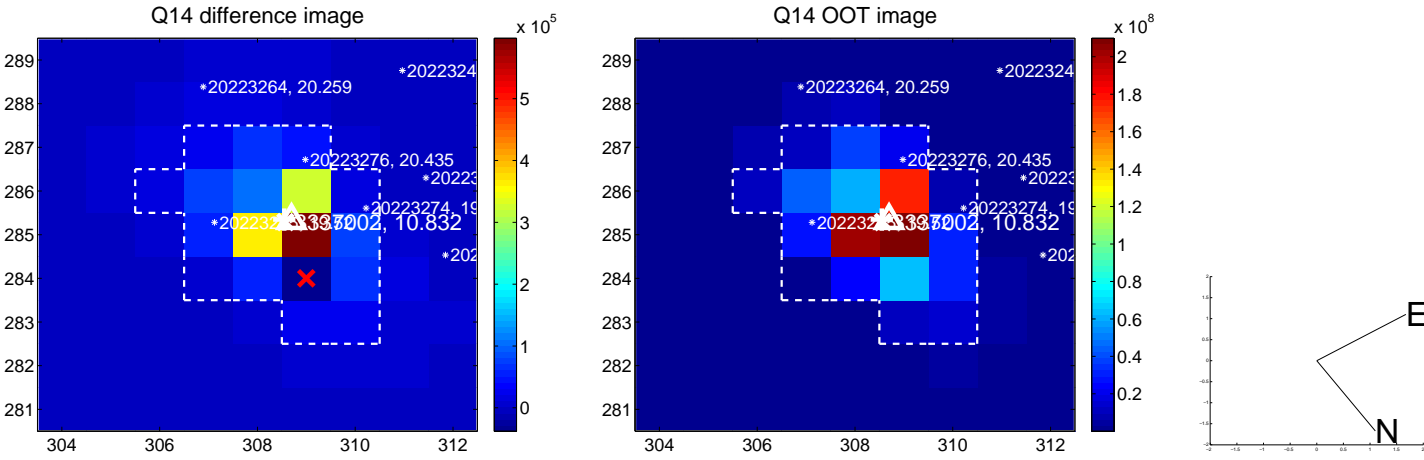
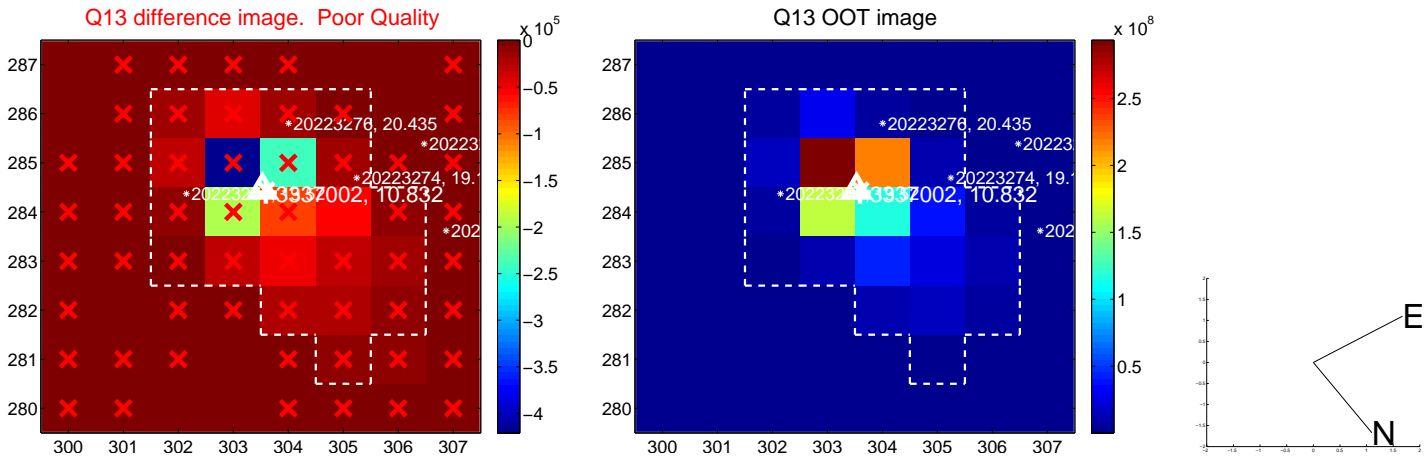
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



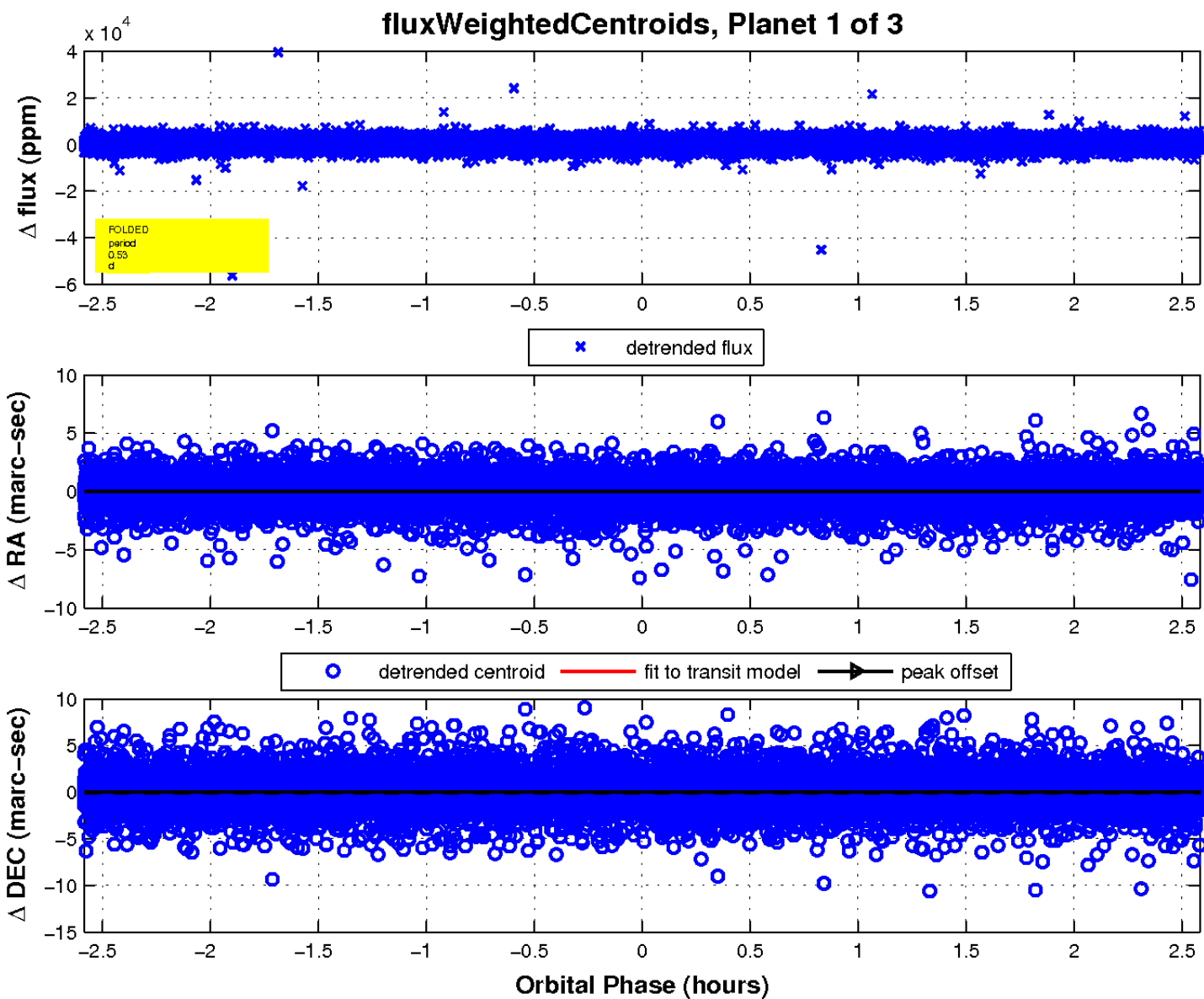
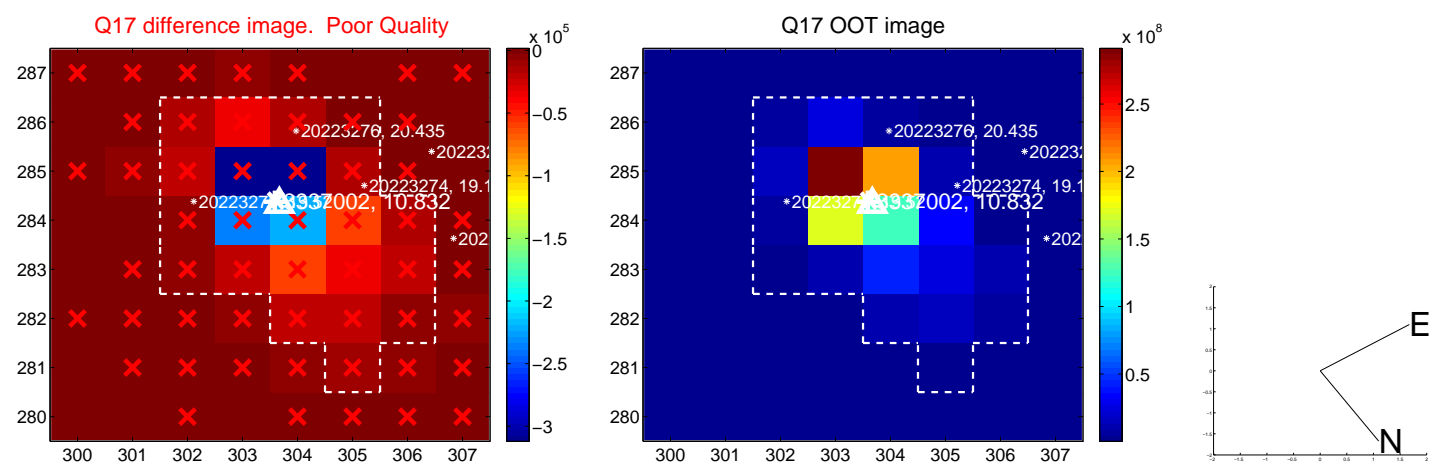
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

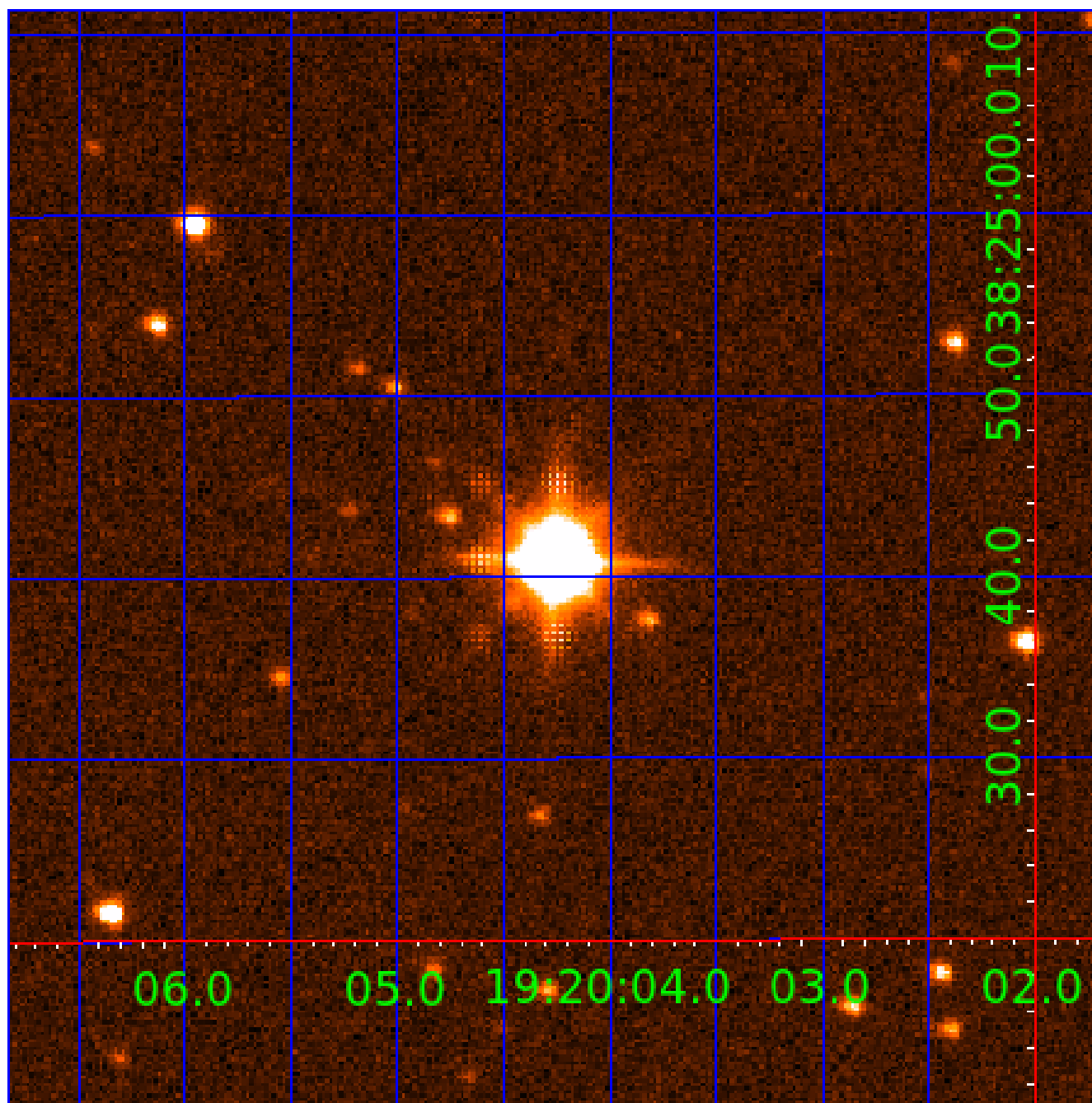


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003337002

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})
003337002-01	OBS	No	0.527005	131.803625	153.5	0.862	10.4	13.9	3.55	7419	4.59	0.00
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003337002-03	OBS	No	1.289711	131.967343	113.8	3.500	13.0	-1.0	3.55	7419	3.81	39934.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337002-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003337002-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
003337002-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_SATURATED

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

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

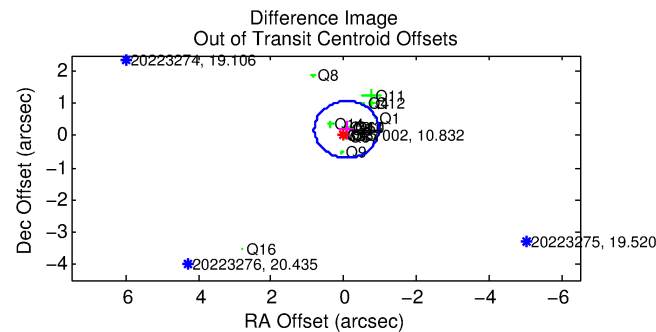
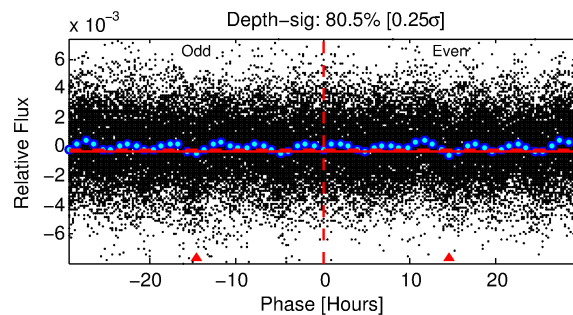
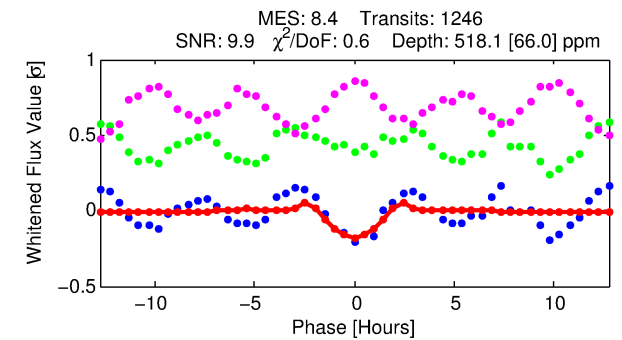
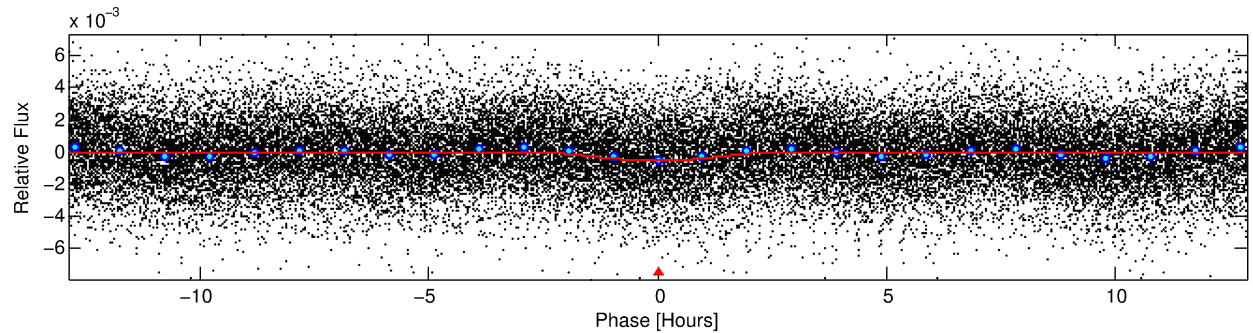
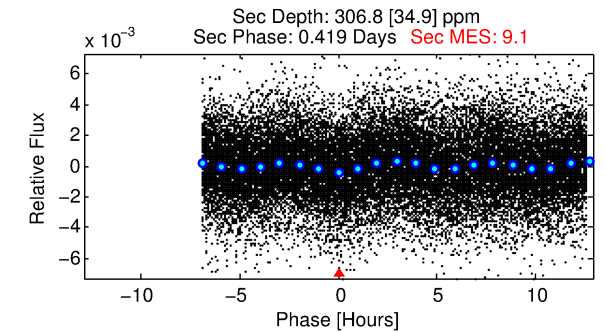
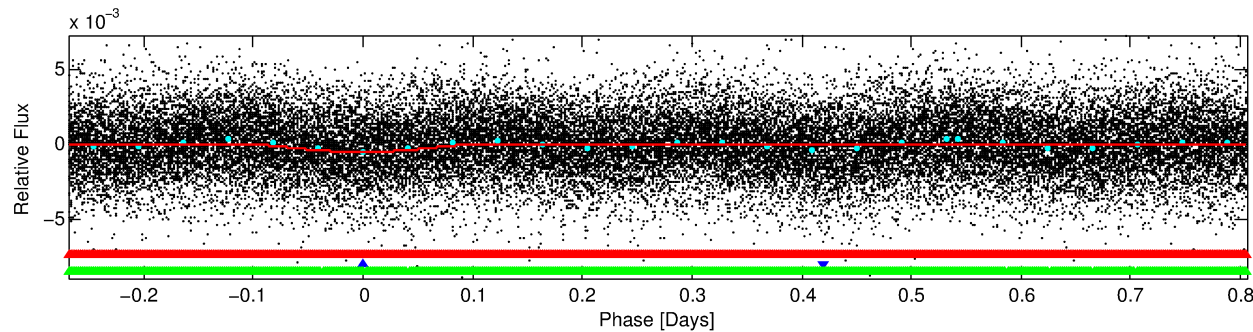
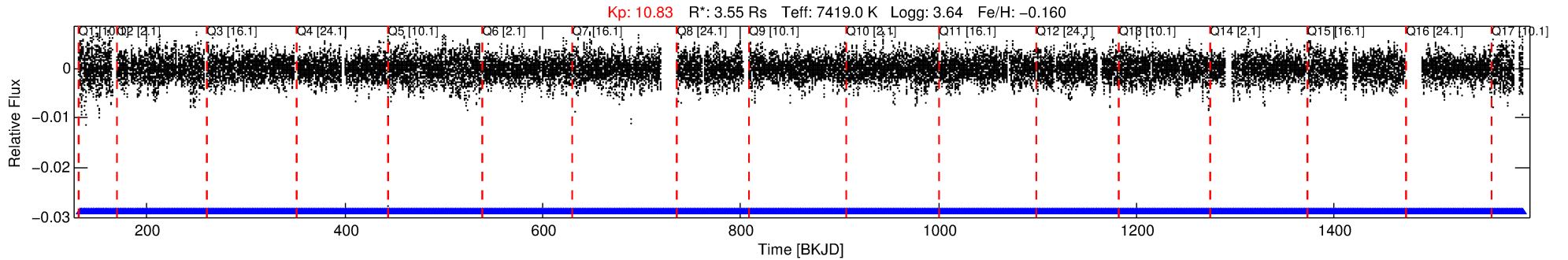
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003337002-02

No Significant Match Found

DV One-Page Summary

KIC: 3337002 Candidate: 2 of 3 Period: 1.074 d



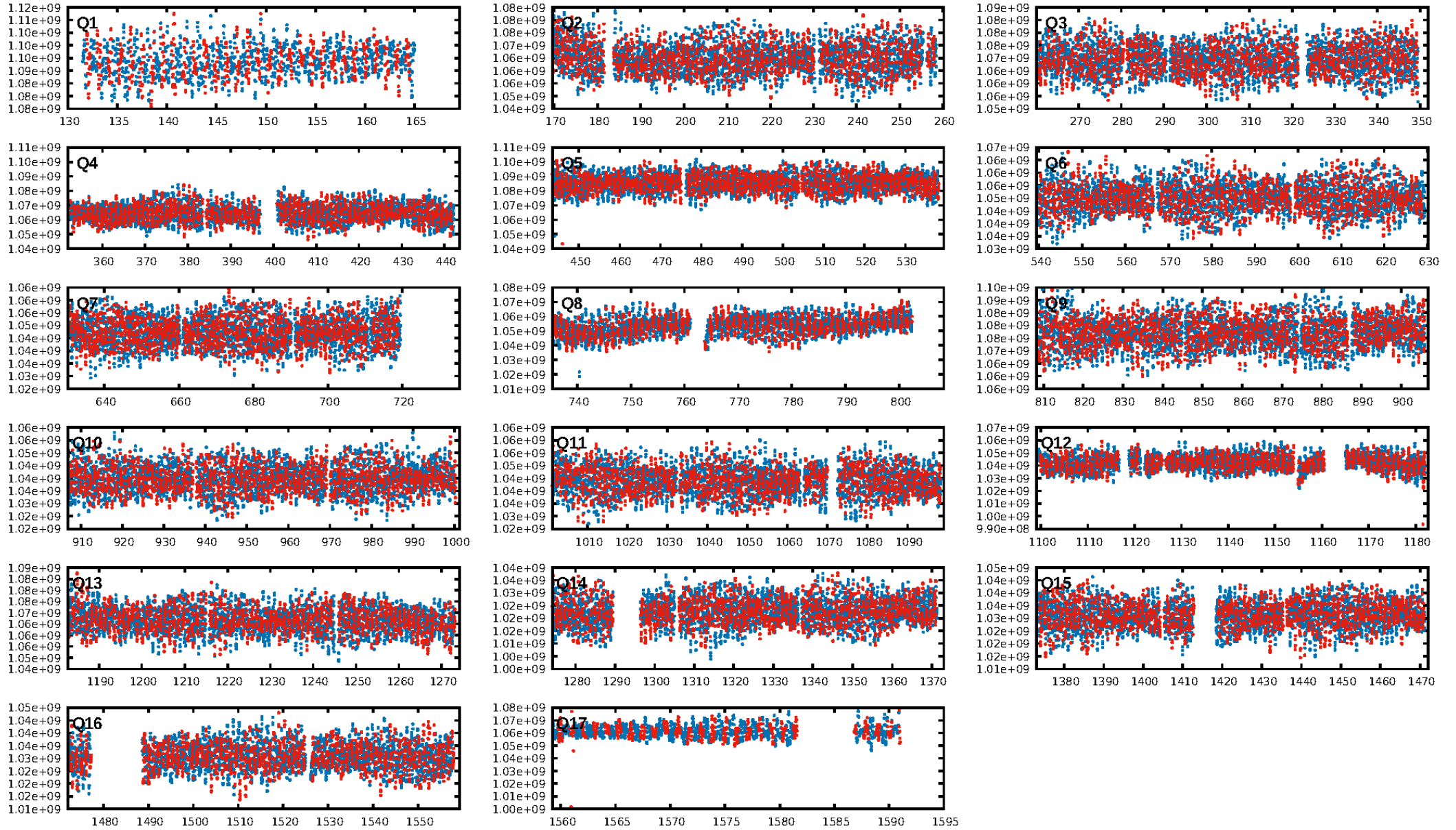
DV Fit Results:

Period = 1.07440 [0.00001] d
Epoch = 132.0686 [0.0036] BKJD
Rp/R* = 0.0398 [0.0355]
a/R* = 1.12 [0.01]
b = 1.00 [0.05]
Seff = 50947.20 [43055.74]
Teq = 3831 [809] K
Rp = 15.43 [15.74] Re
a = 0.0259 [0.0131] AU
Ag = 0.48 [0.94] [-0.56σ]
Teffp = 4922 [2208] K [0.46σ]

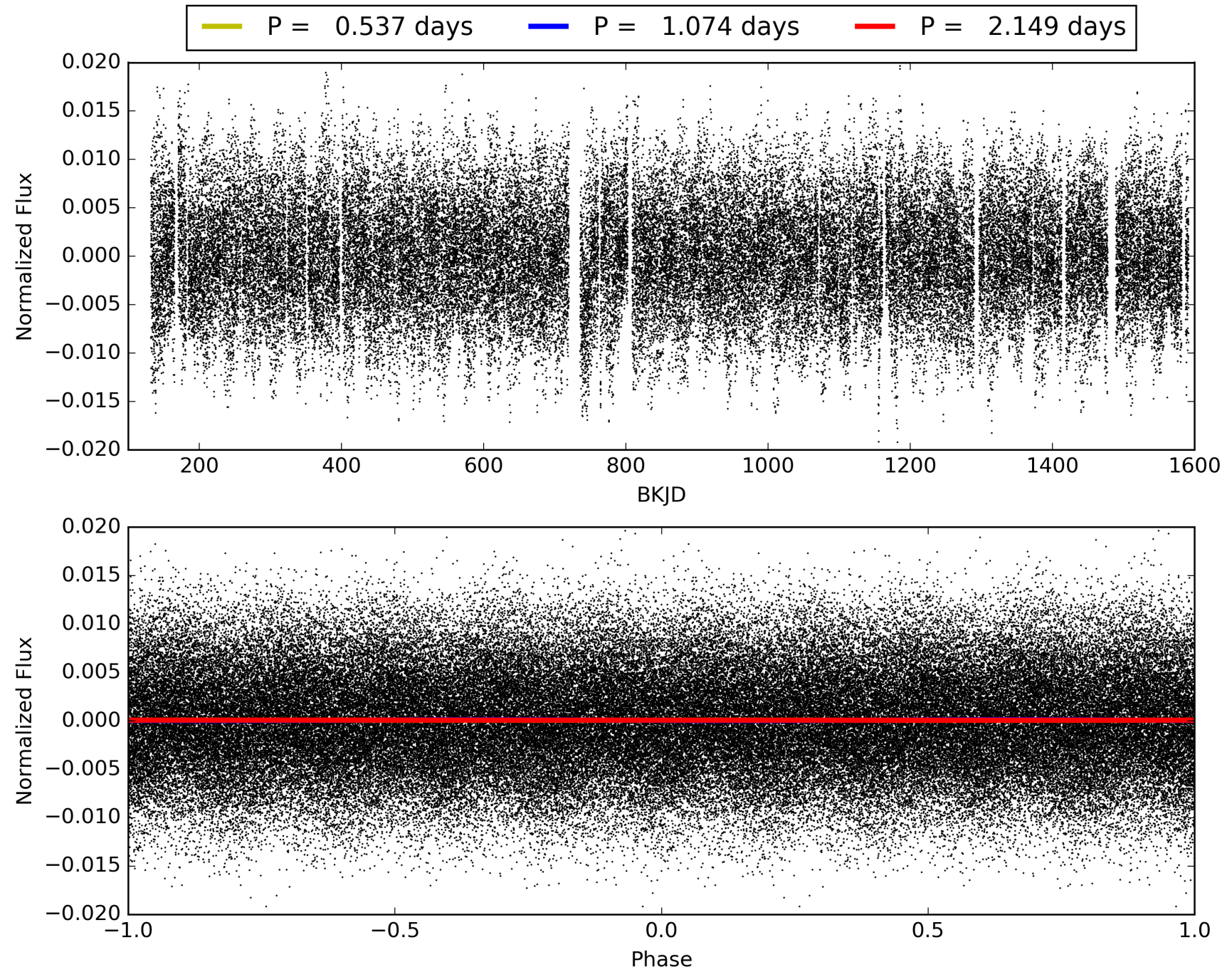
DV Diagnostic Results:

ShortPeriod-sig: 99.2% [2.63σ]
LongPeriod-sig: 60.8% [0.86σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1192/1192]
GhostDiagnostic-chr: 0.1111
Centroid-sig: 55.7%
Centroid-so: 0.032 arcsec [1.25σ]
OotOffset-rm: 0.204 arcsec [0.69σ]
KicOffset-rm: 0.282 arcsec [0.93σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003337002-02, PDC Light Curves

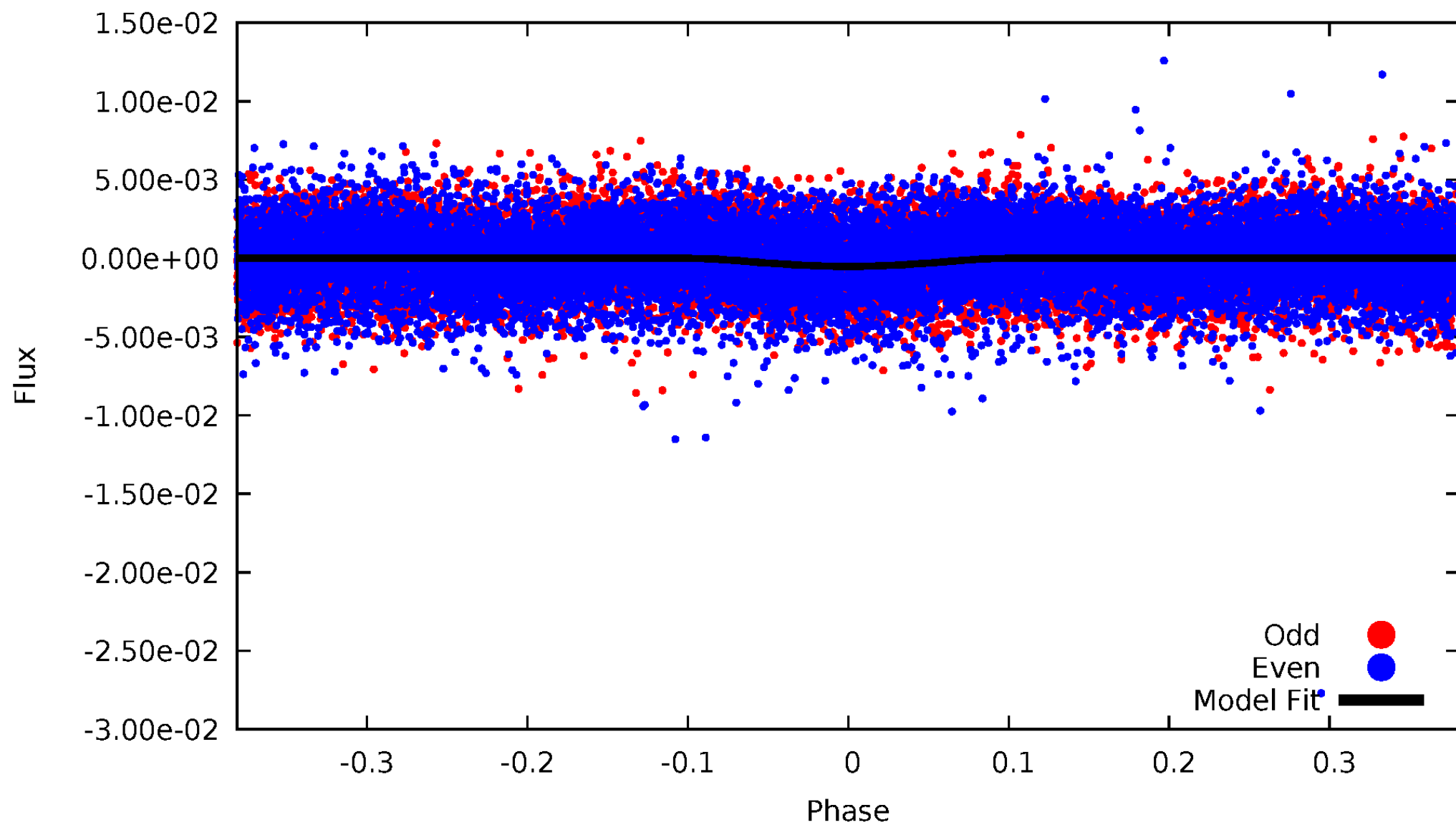


TCE 003337002-02



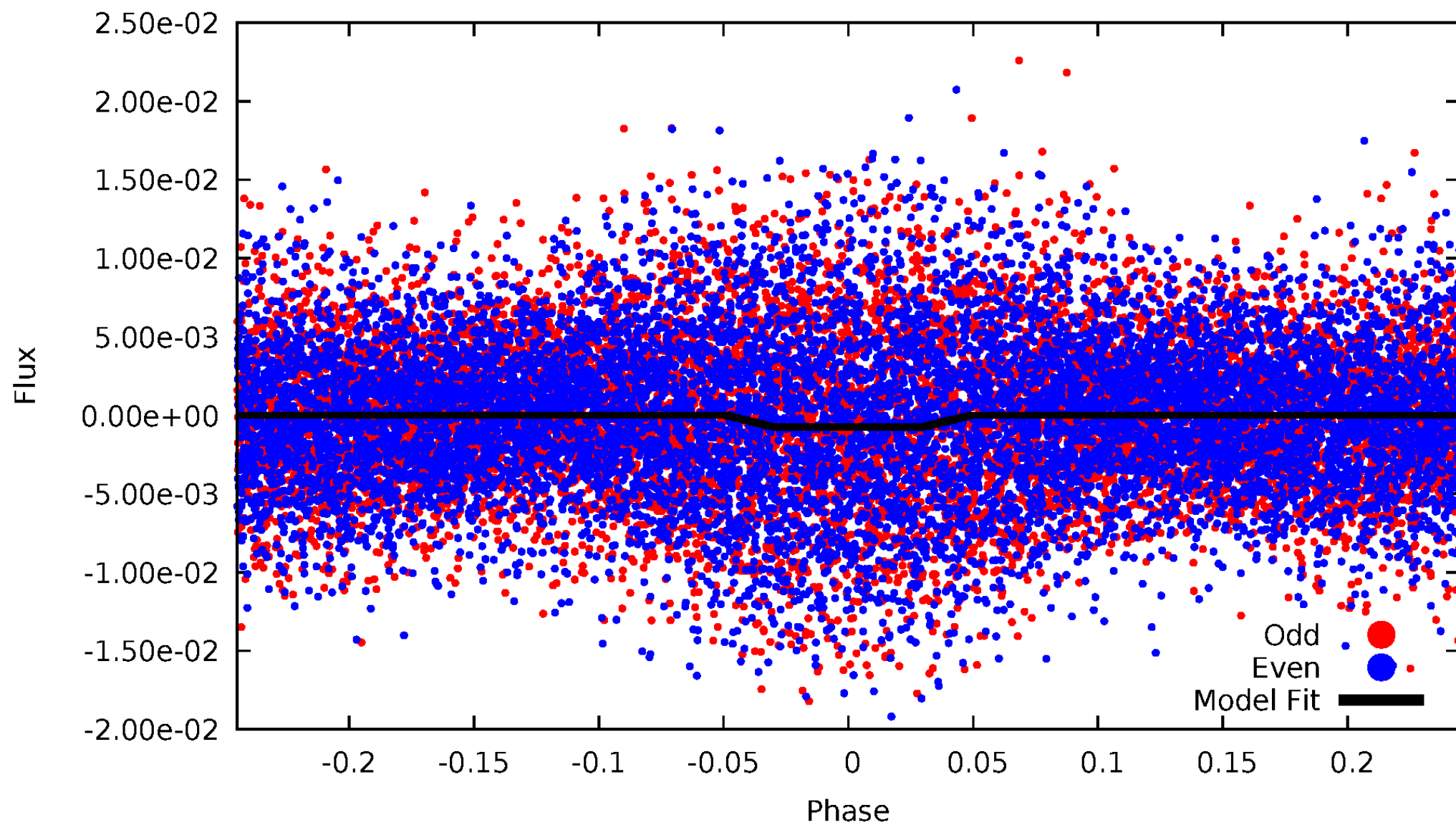
DV Odd/Even

TCE 003337002-02



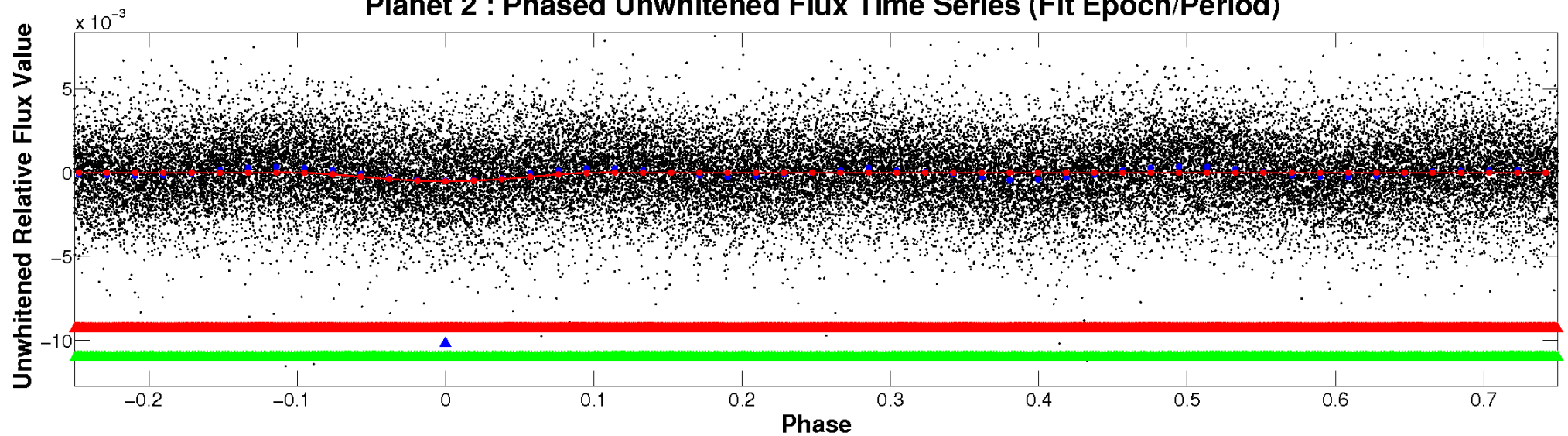
ALT Odd/Even

TCE 003337002-02

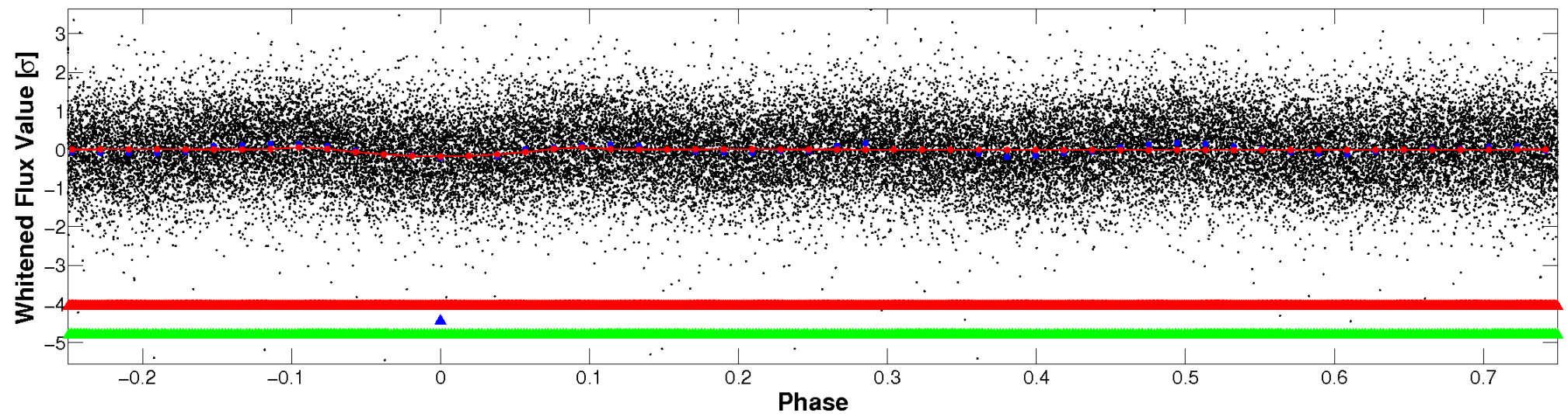


Non-Whitened Vs. Whitened Light Curve

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

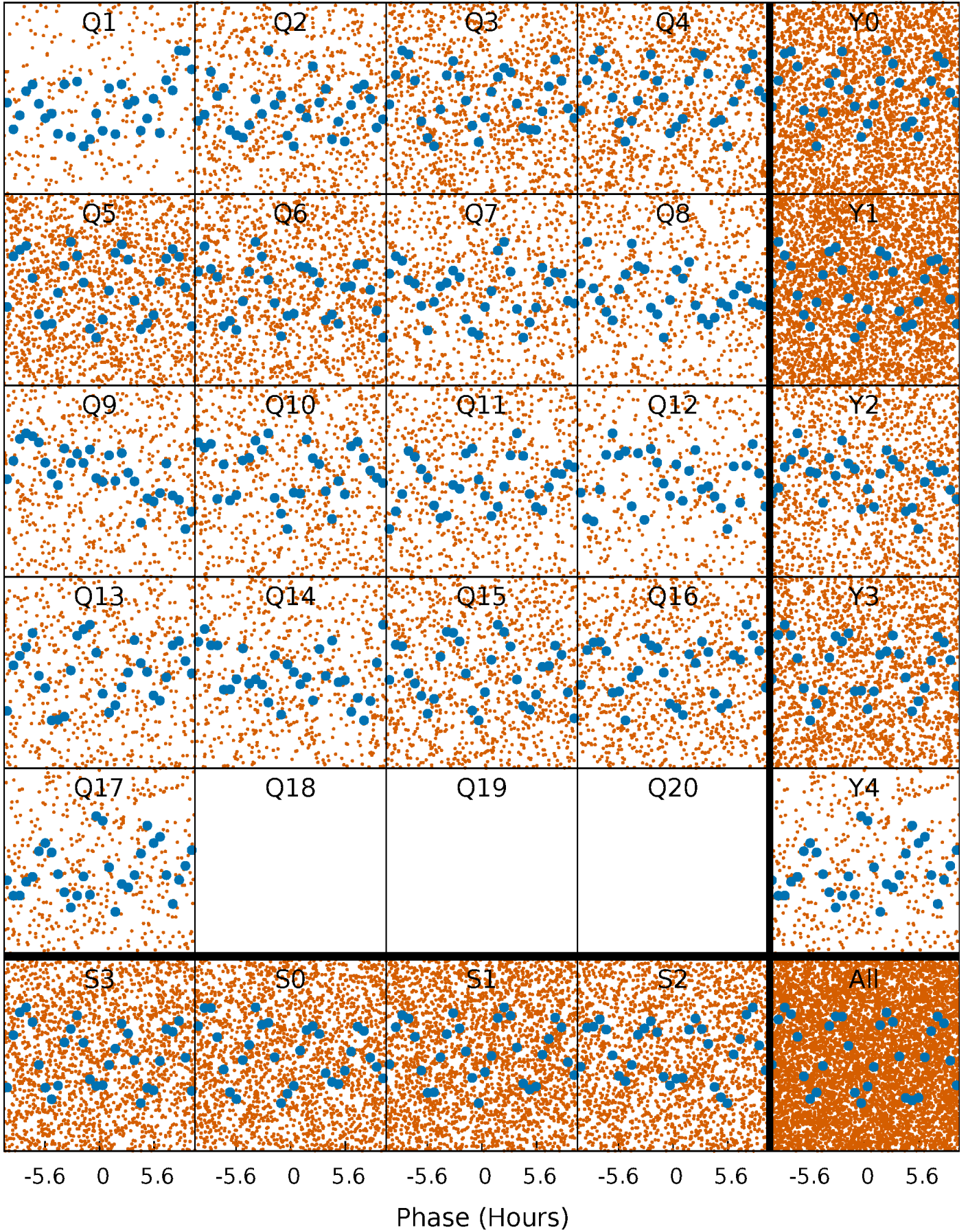


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



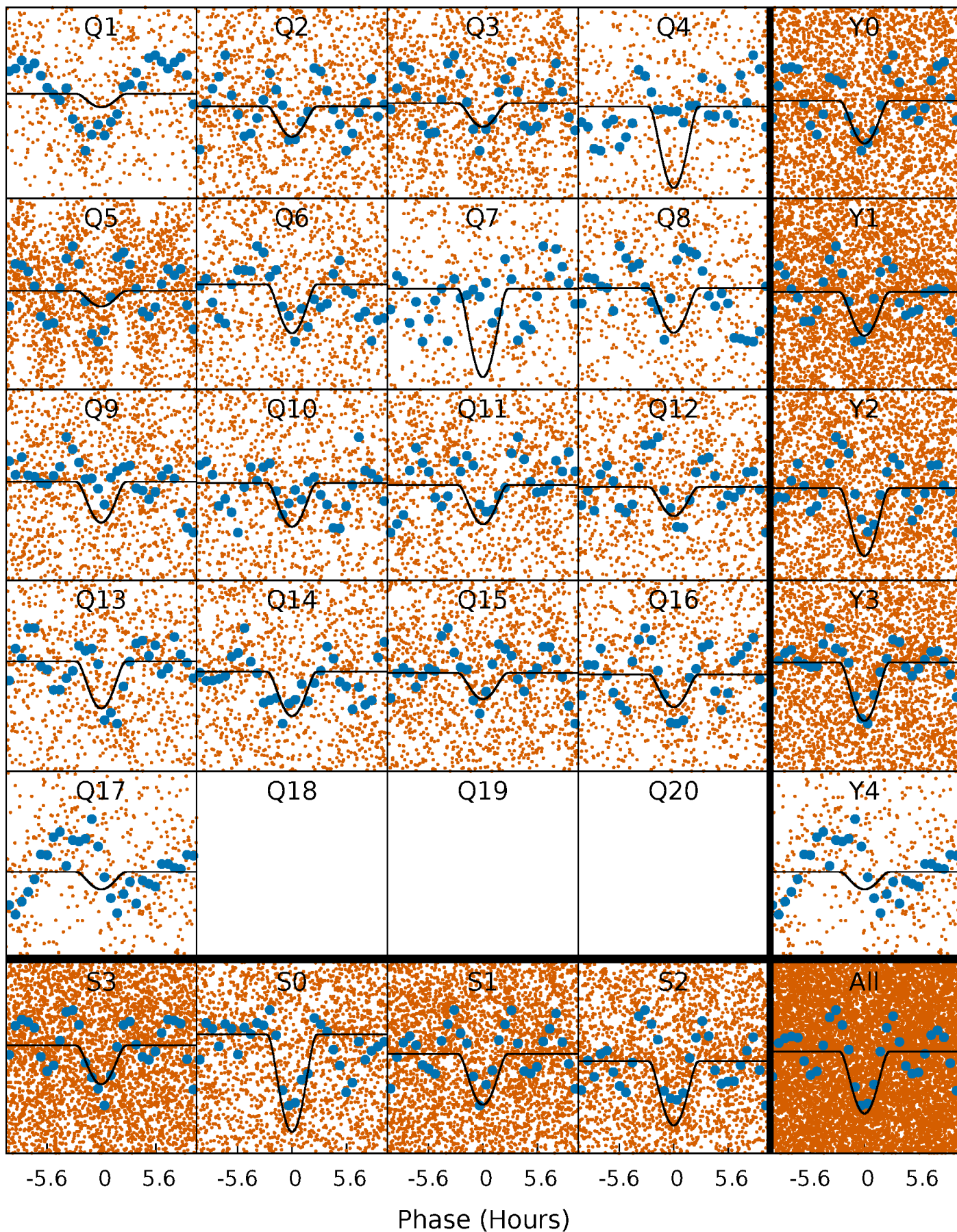
PDC Quarter-Phased Transit Curves

TCE 003337002-02 P= 1.074396 Days $T_0=132.068629$ (BKJD)



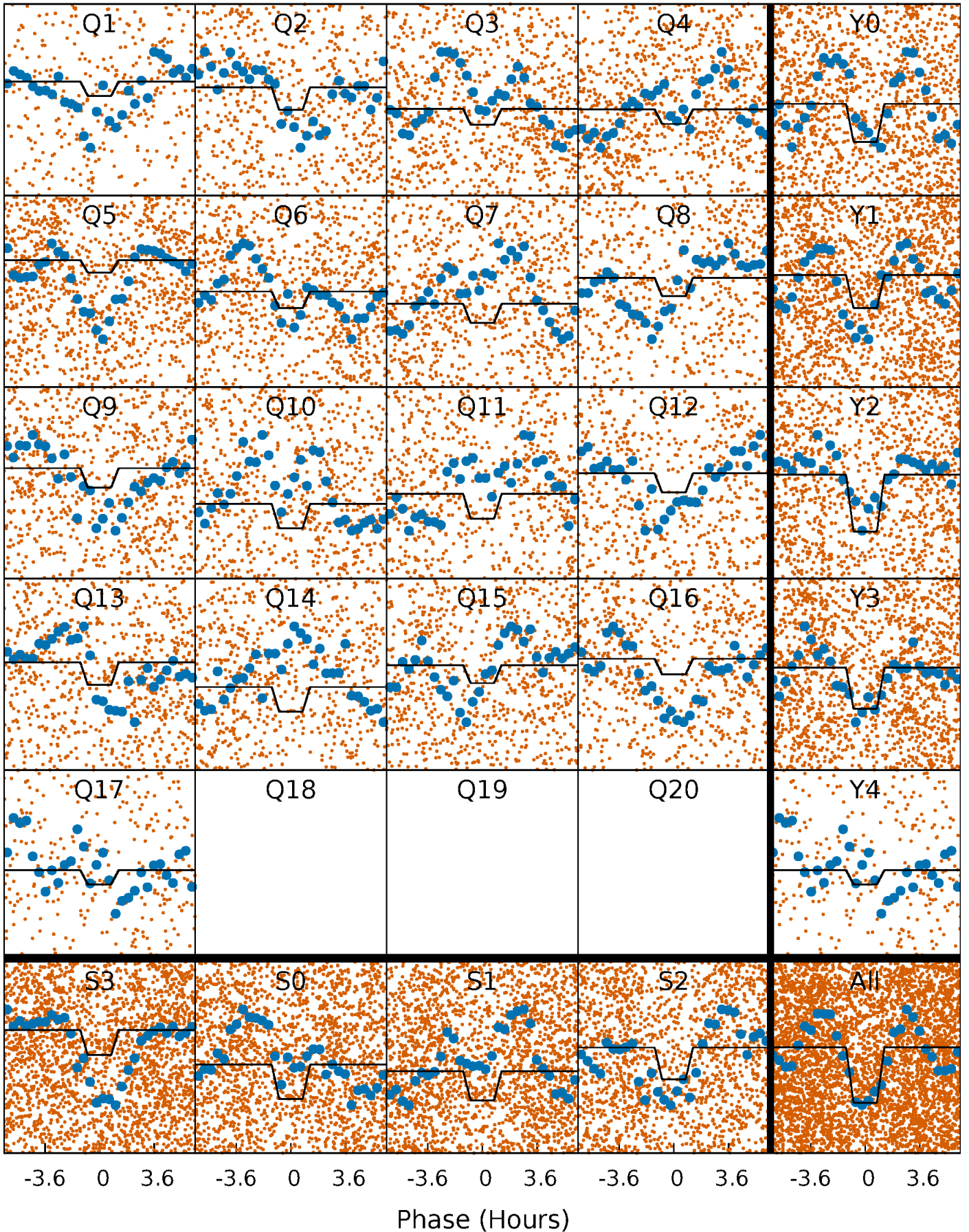
DV Quarter-Phased Transit Curves

TCE 003337002-02 P= 1.074396 Days $T_0=132.068629$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

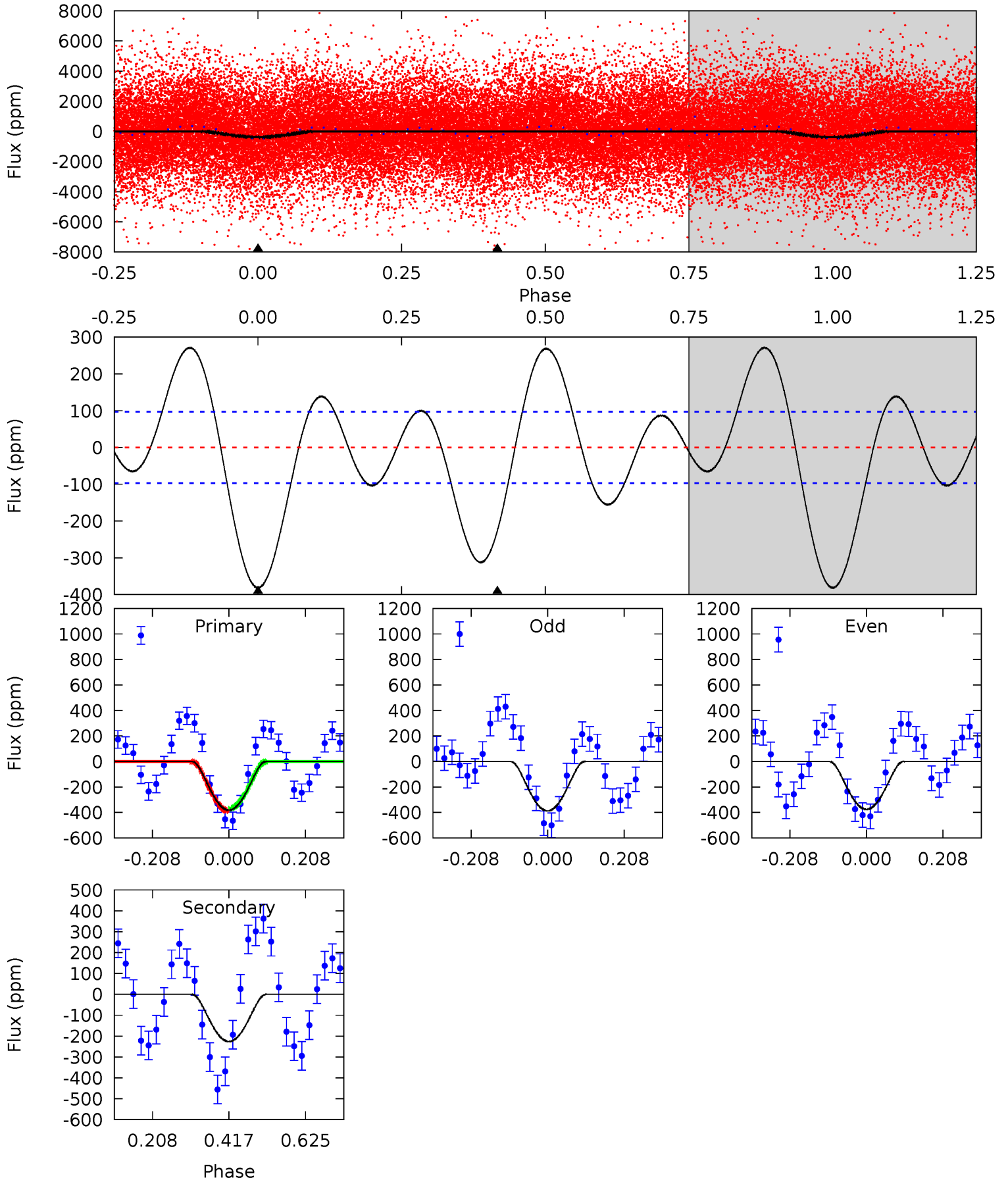
TCE 003337002-02 P= 1.074431 Days $T_0=132.041223$ (BKJD)



DV Model-Shift Uniqueness Test

003337002-02, P = 1.074396 Days, E = 130.994233 Days

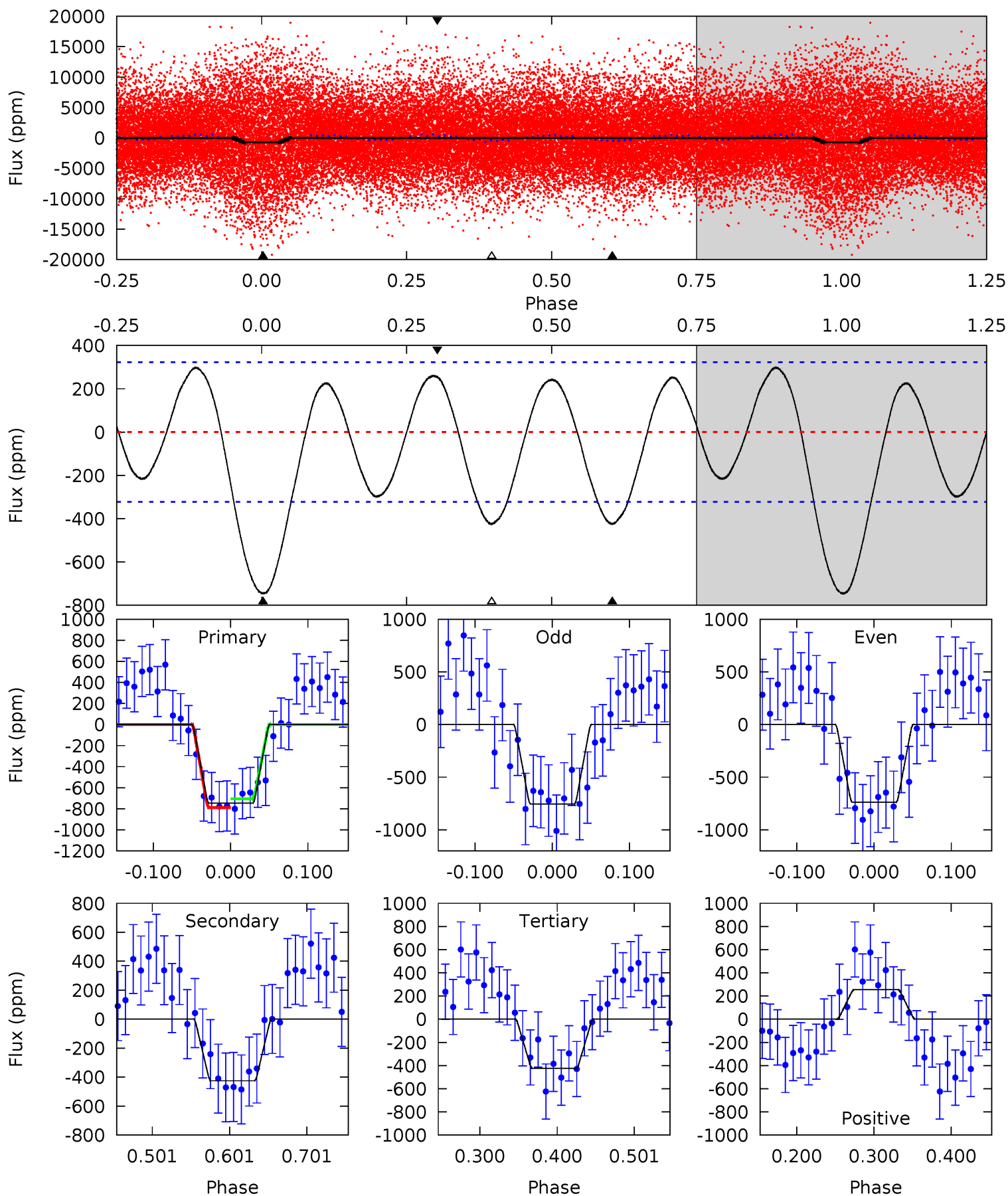
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	10.3	0	0	4.41	1.26	2.93	17.4	17.4	10.3	10.3	0.27	0.81	0.42	0.43



Alt Model-Shift Uniqueness Test

003337002-02, P = 1.074431 Days, E = 130.966792 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	6.01	6.01	3.61	4.56	1.64	3.03	4.55	6.96	0.00	2.41	0.11	0.93	0.29	0.60



Stellar Parameters For KIC 003337002

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7419^{+230}_{-307}	$3.641^{+0.495}_{-0.055}$	$-0.160^{+0.250}_{-0.300}$	$3.553^{+0.331}_{-1.763}$	$2.017^{+0.100}_{-0.601}$	$0.063^{+0.357}_{-0.012}$
	+3%/-4%	+14%/-2%	+156%/-188%	+9%/-50%	+5%/-30%	+563%/-19%
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 003337002-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-226 ± 22	$14.78^{+13.67}_{-9.16}$	5111^{+362}_{-635}	3326^{+2917}_{-7389}	$0.373^{+2.004}_{-0.269}$
Alt.	-425 ± 71	$12.10^{+11.18}_{-7.75}$	5131^{+367}_{-653}	5010^{+4924}_{-8049}	$1.039^{+6.462}_{-0.772}$

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 $A_{obs} \gg 1.0$

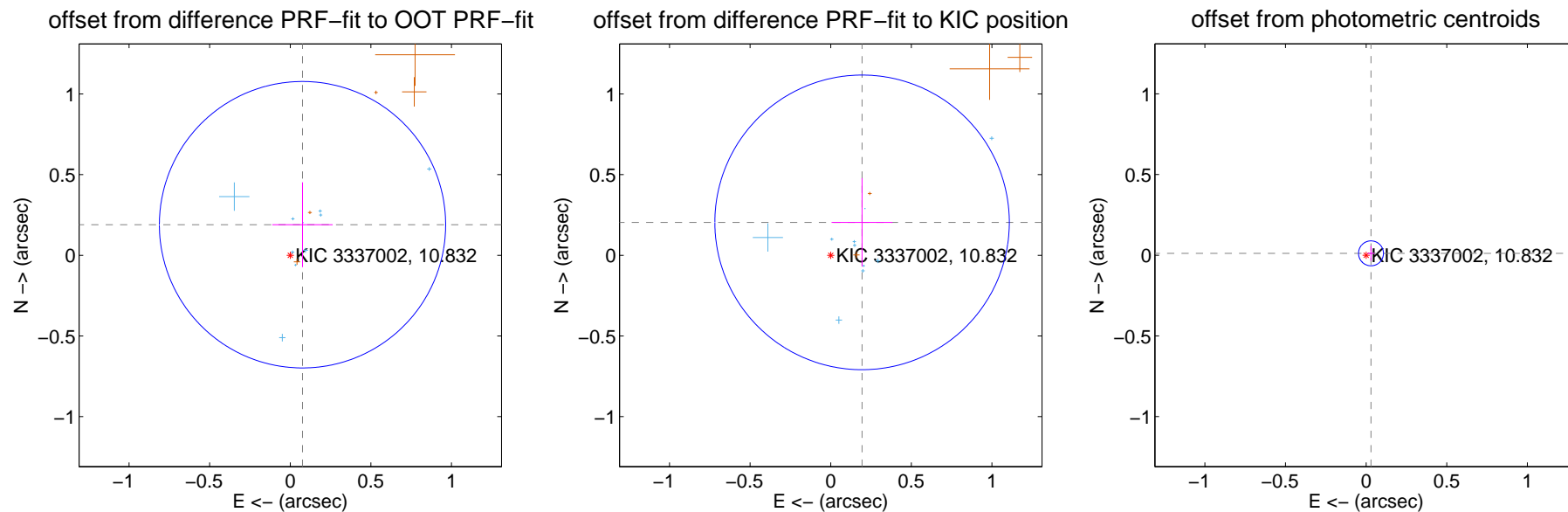
DV Centroid Data

Supplemental centroid analysis for 003337002-02. **Kepler magnitude: 10.83.** Transit SNR 9.92

There are 11 quarters with good PRF difference image offsets

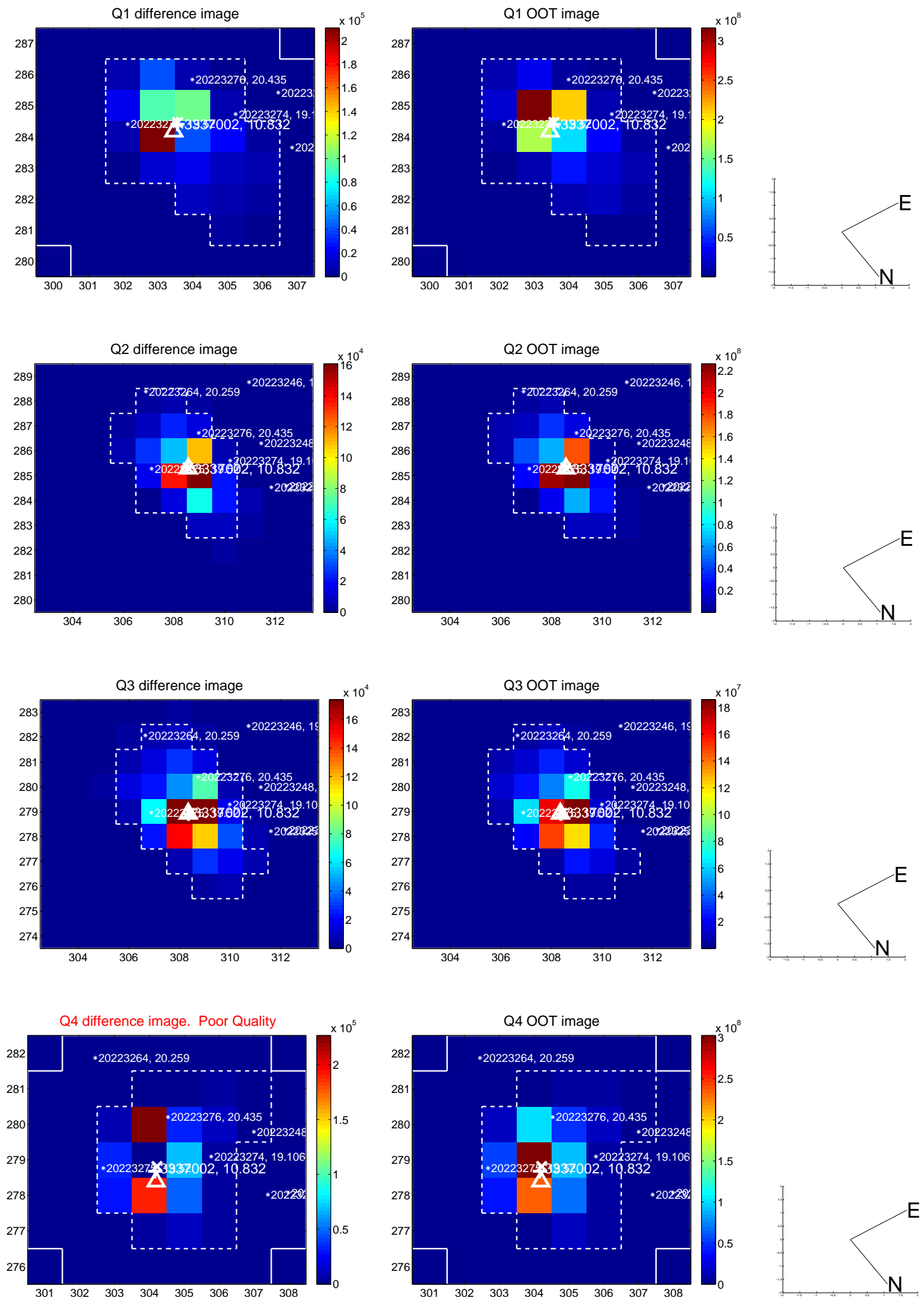
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.204 ± 0.296	0.69	-0.076 ± 0.187	0.189 ± 0.263
PRF-fit source offset from KIC position	0.282 ± 0.304	0.93	-0.194 ± 0.189	0.204 ± 0.274
photometric centroid source offset	0.03 ± 0.03	1.25	-0.03 ± 0.02	0.01 ± 0.05

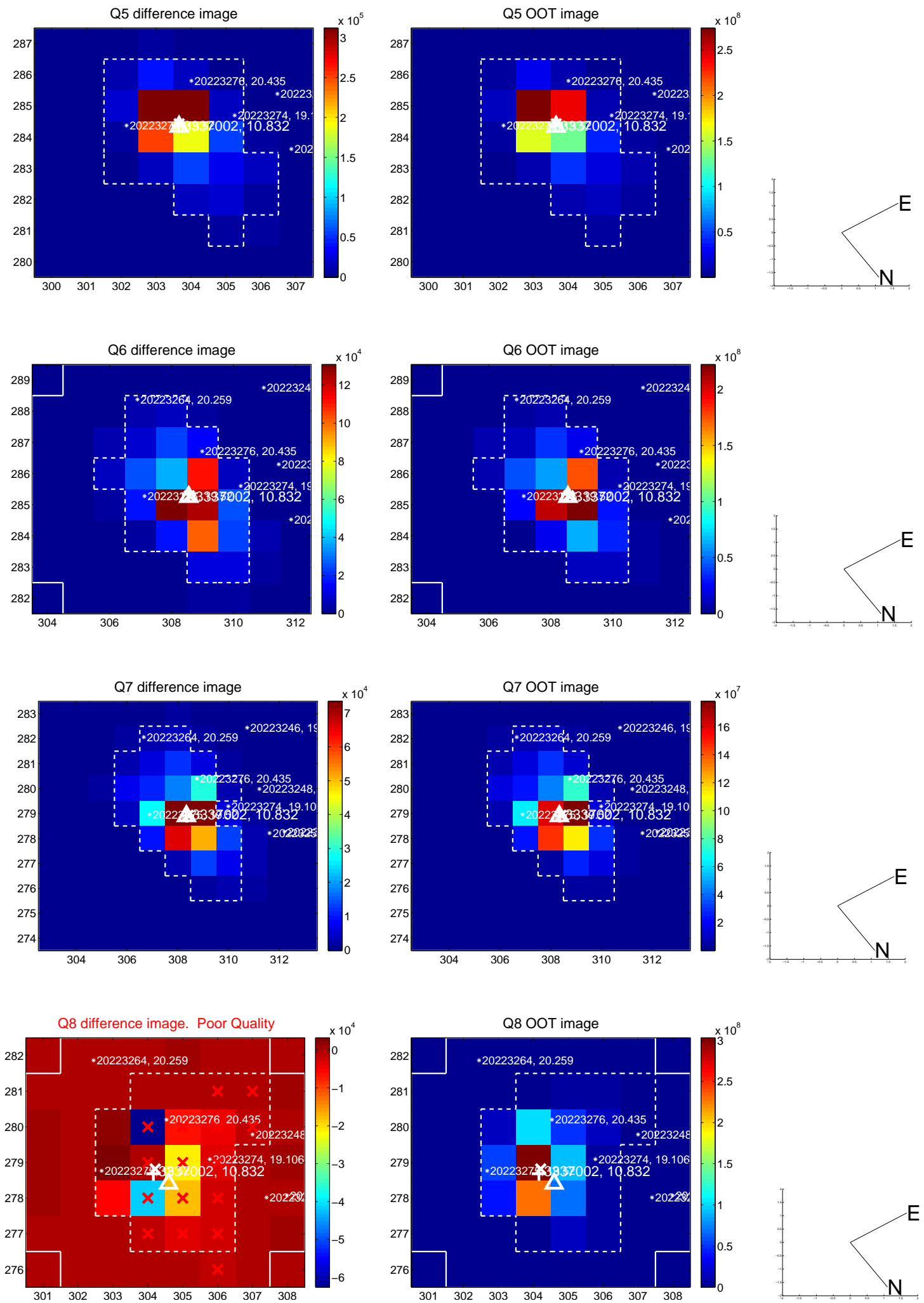


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

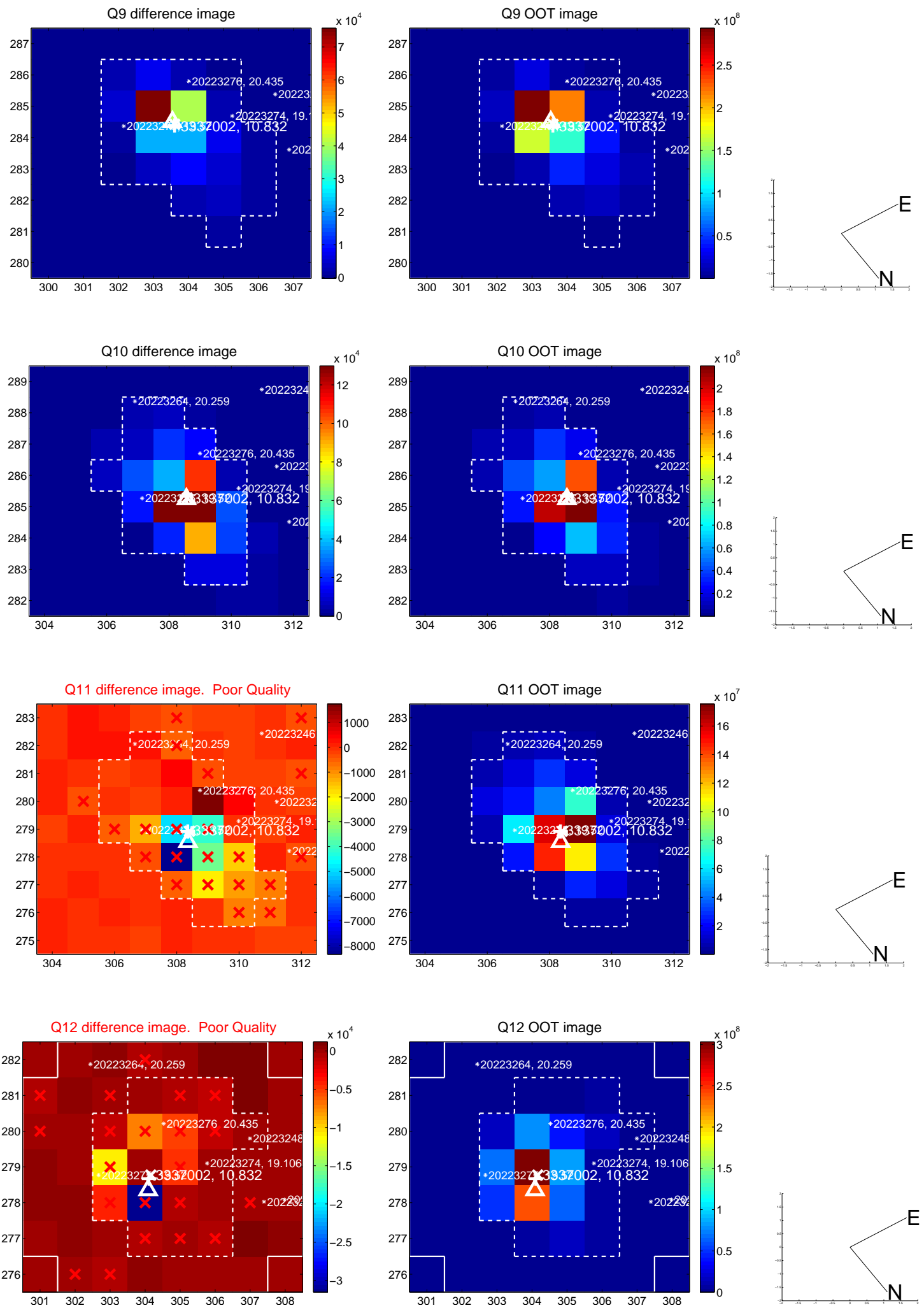
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



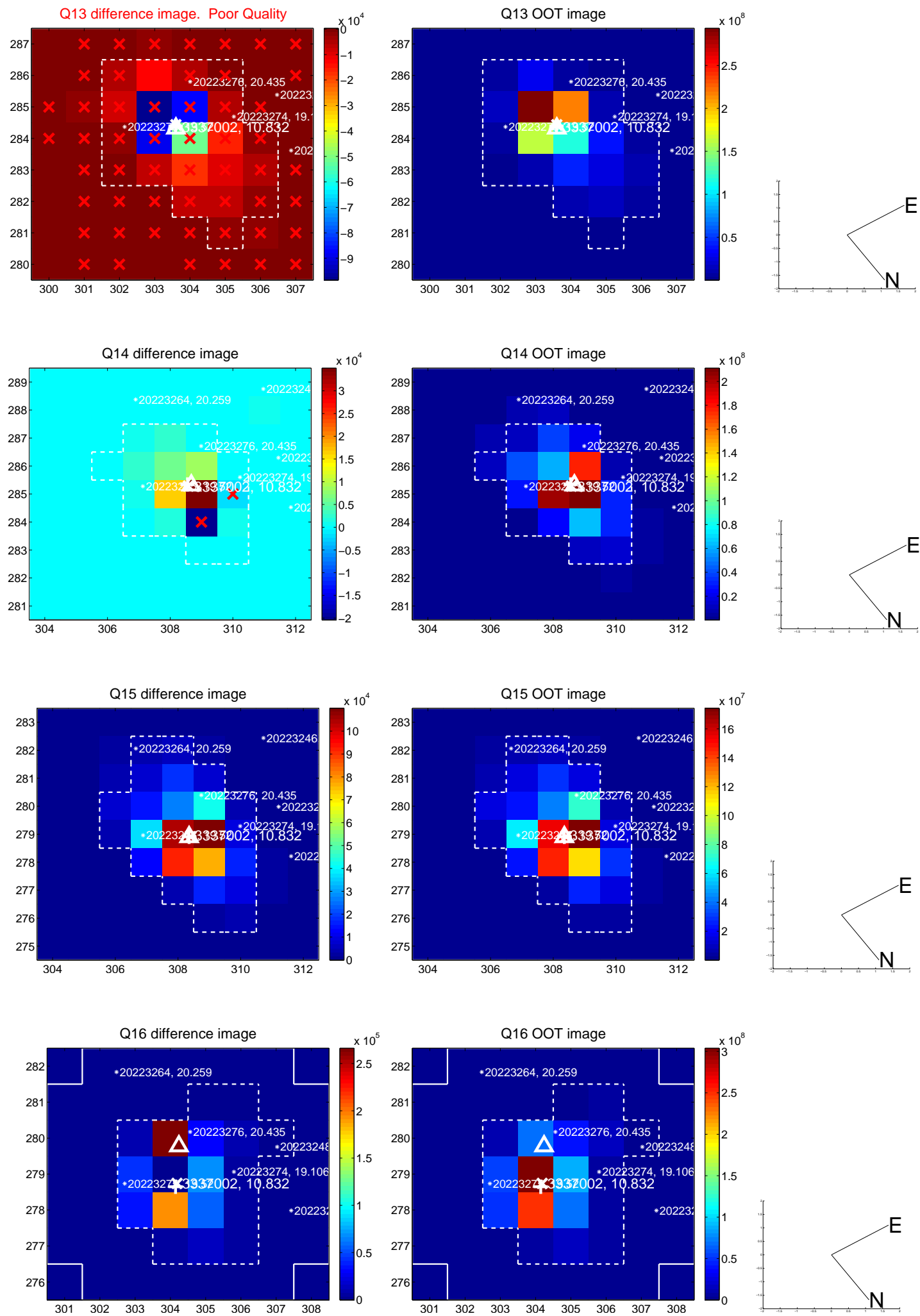
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



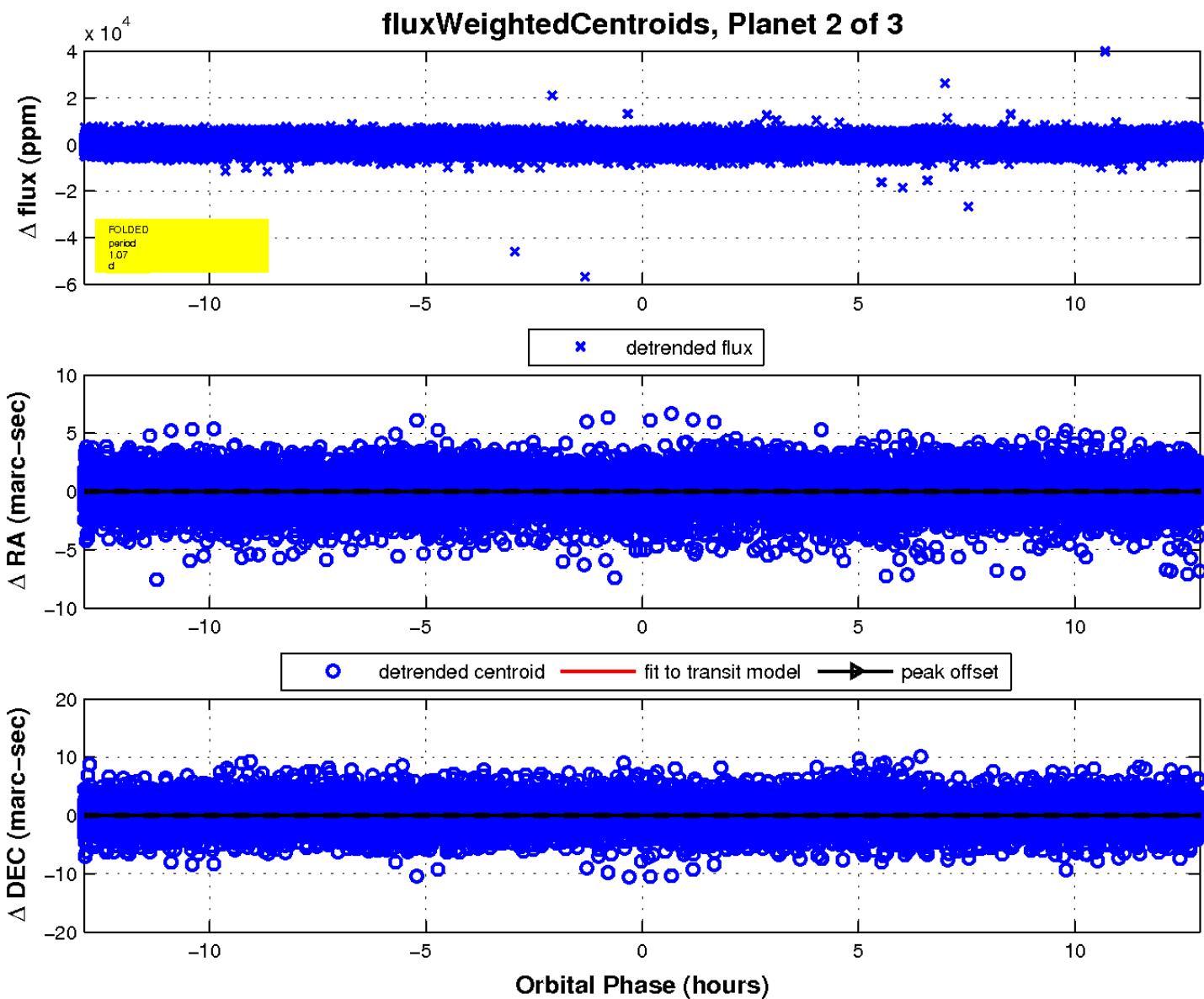
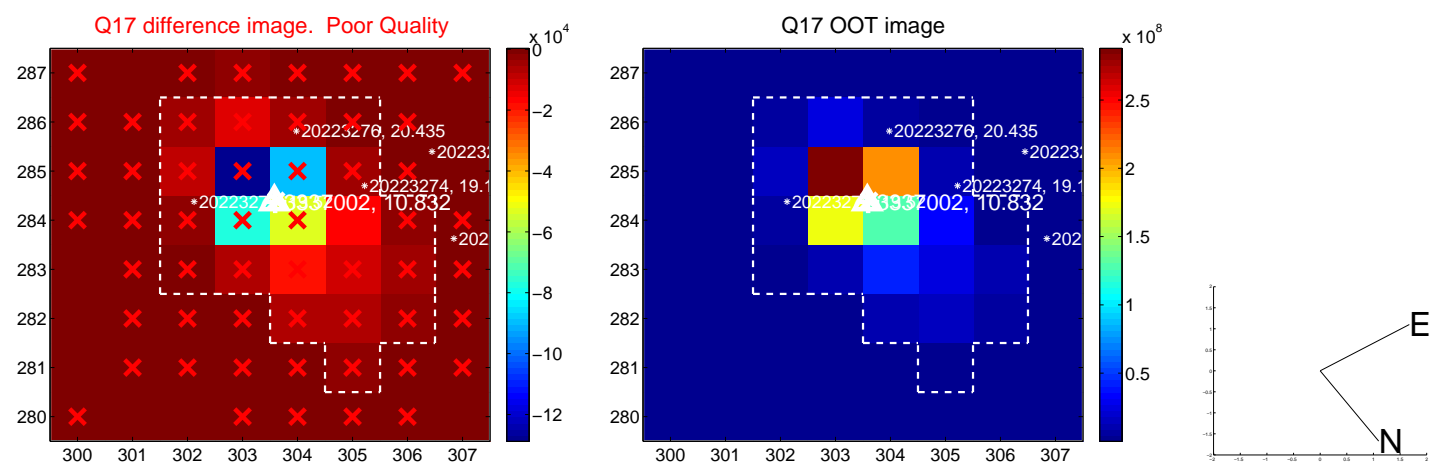
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

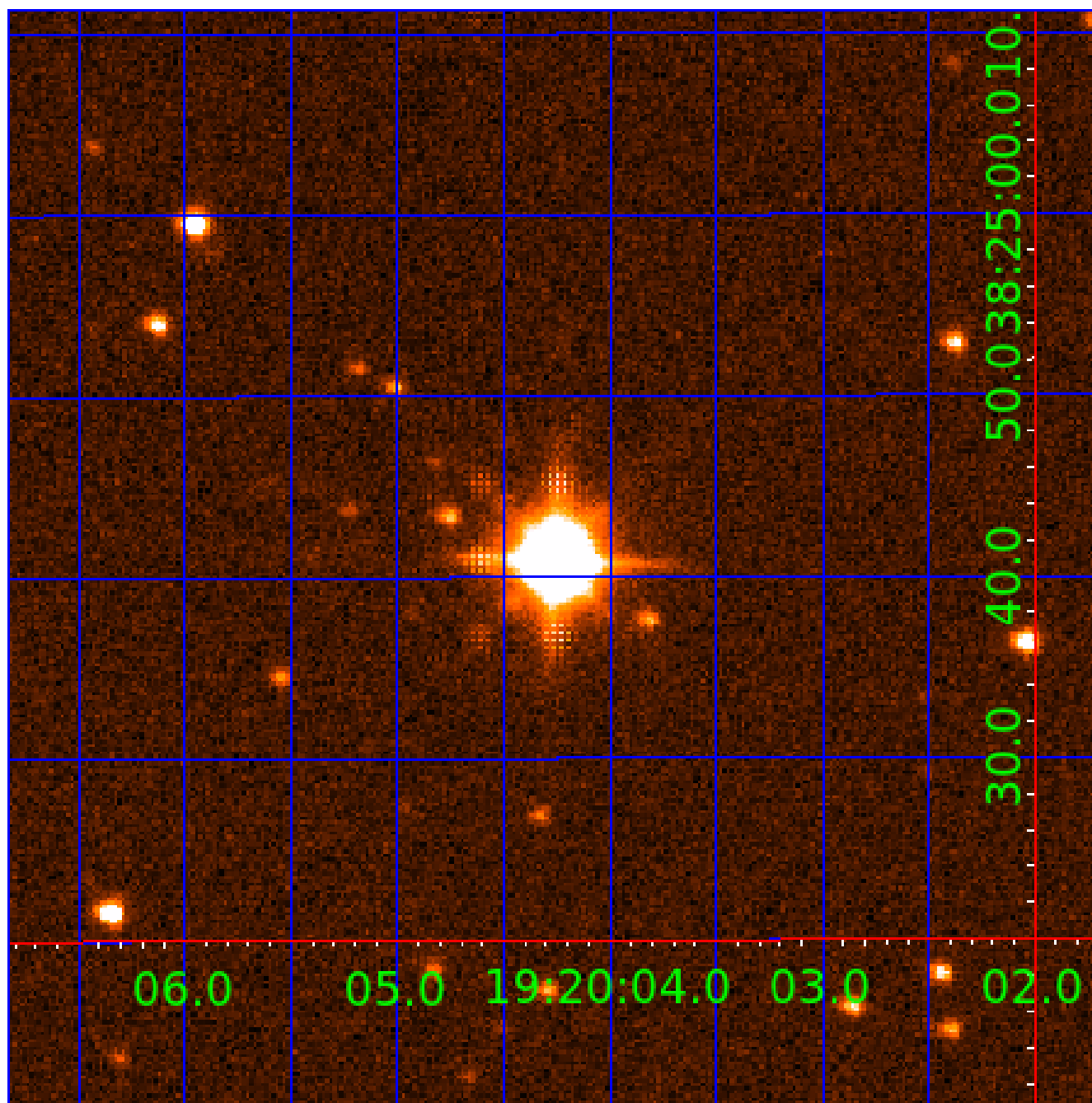


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003337002

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})
003337002-01	OBS	No	0.527005	131.803625	153.5	0.862	10.4	13.9	3.55	7419	4.59	0.00
003337002-02	OBS	No	1.074396	132.068629	518.1	4.911	8.4	9.9	3.55	7419	15.43	50947.20
003337002-03	OBS	No	1.289711	131.967343	113.8	3.500	13.0	-1.0	3.55	7419	3.81	39934.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337002-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003337002-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
003337002-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_SATURATED

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

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

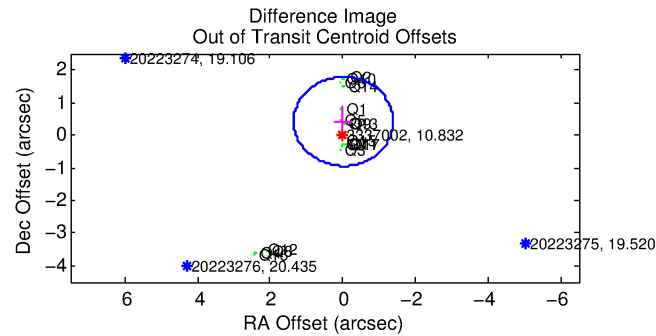
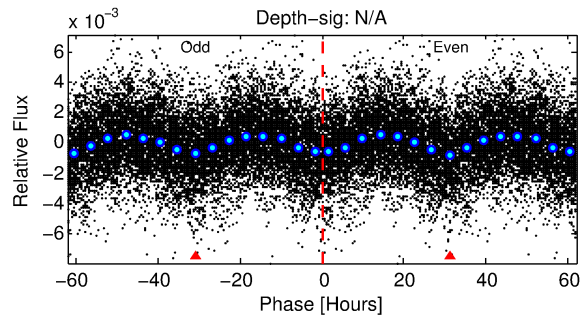
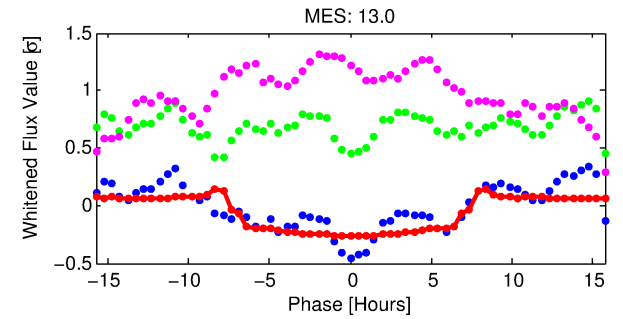
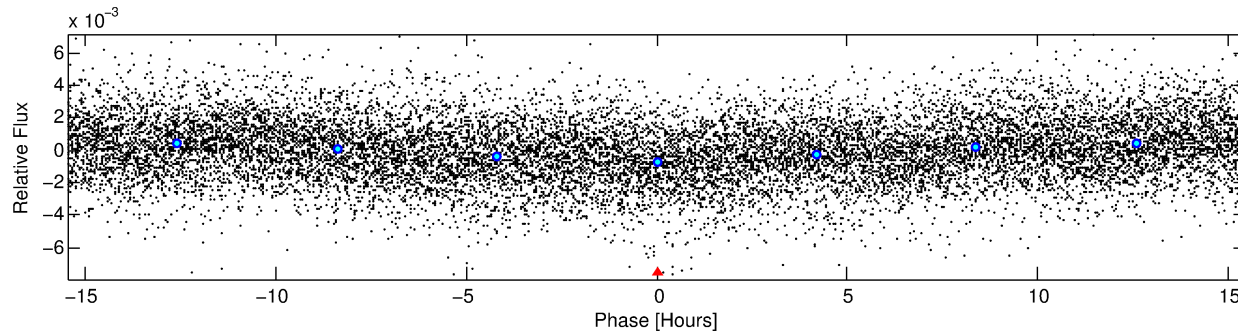
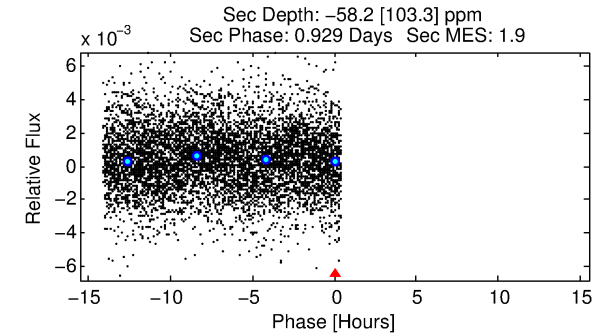
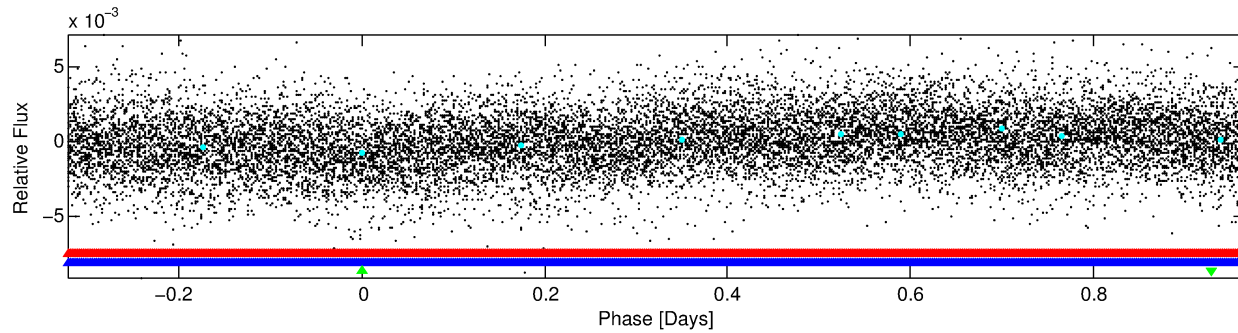
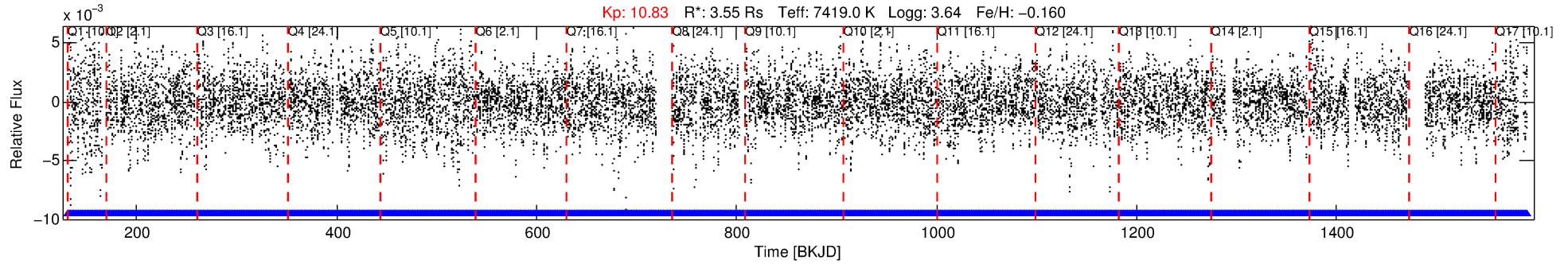
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003337002-03

No Significant Match Found

DV One-Page Summary

KIC: 3337002 Candidate: 3 of 3 Period: 1.290 d



TPS TCE Results:

Period = 1.28971 d
Epoch = 131.9673 BKJD

DV fit results are unavailable

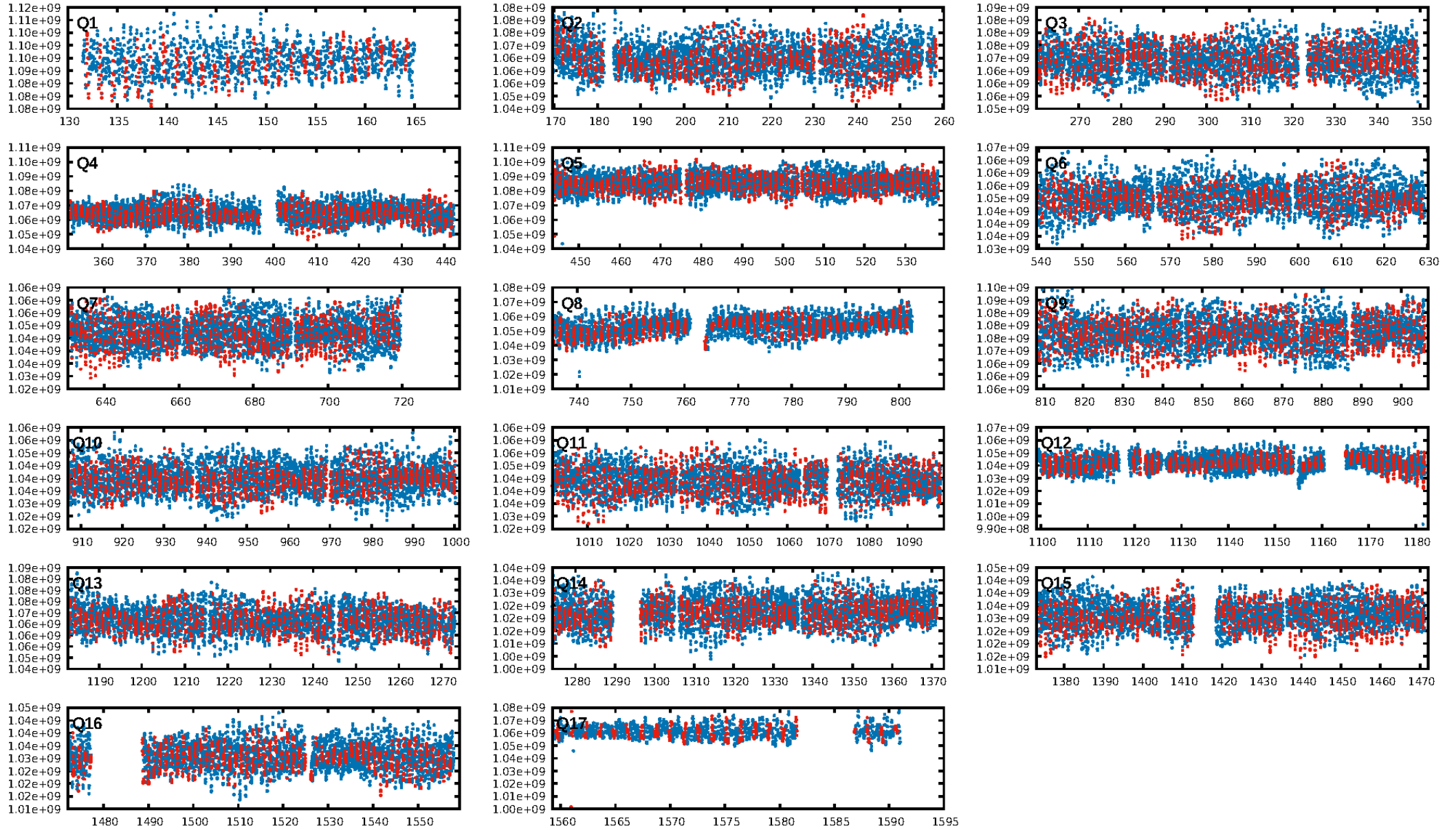
DV Diagnostic Results:

ShortPeriod-sig: 60.8% [0.86σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [702/702]
GhostDiagnostic-chr: 1.111
Centroid-sig: 0.0%
Centroid-so: 0.014 arcsec [0.77σ]
OotOffset-rm: 0.421 arcsec [0.92σ]
KicOffset-rm: 0.113 arcsec [0.50σ]
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]

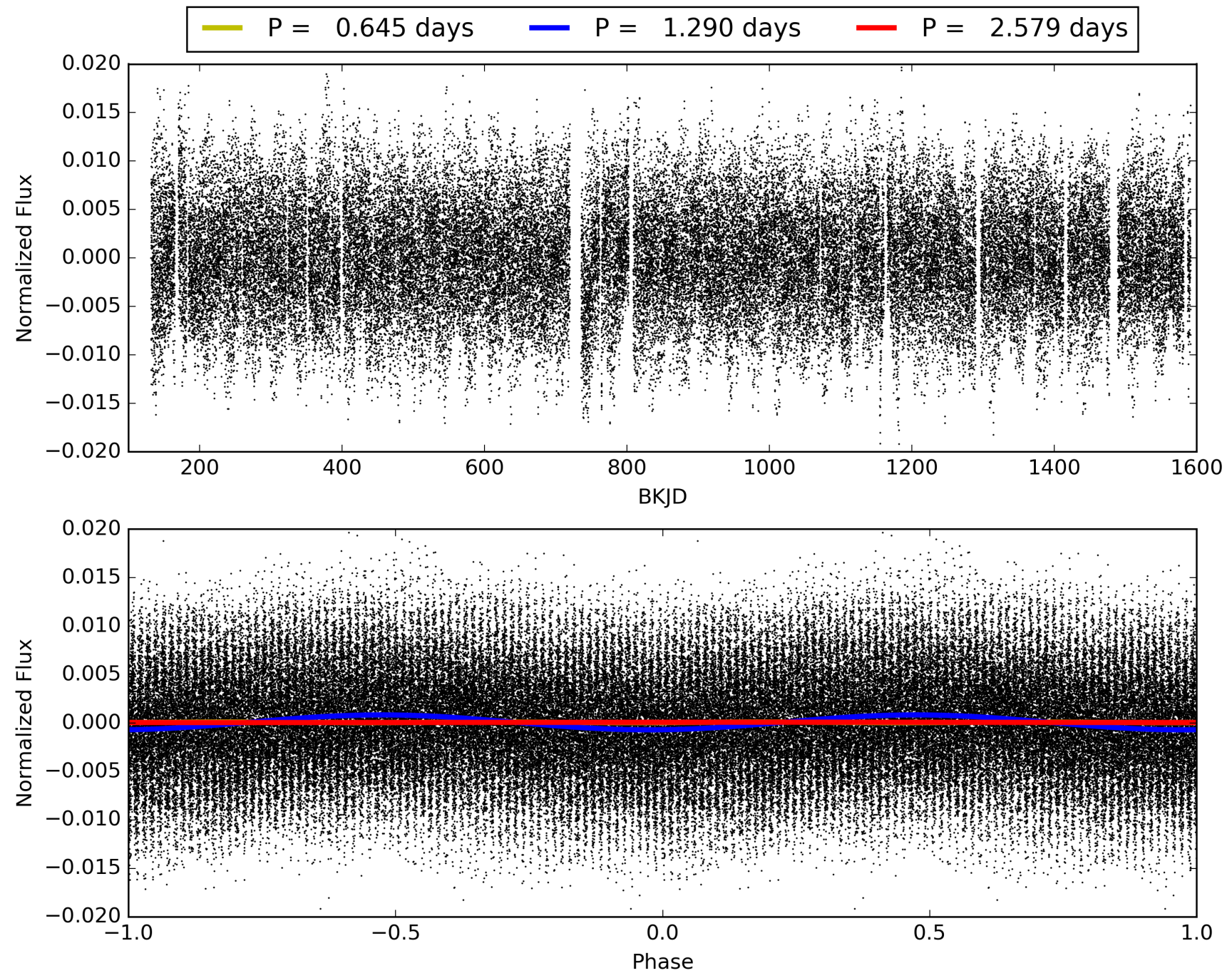
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:53:06 Z

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

TCE 003337002-03, PDC Light Curves

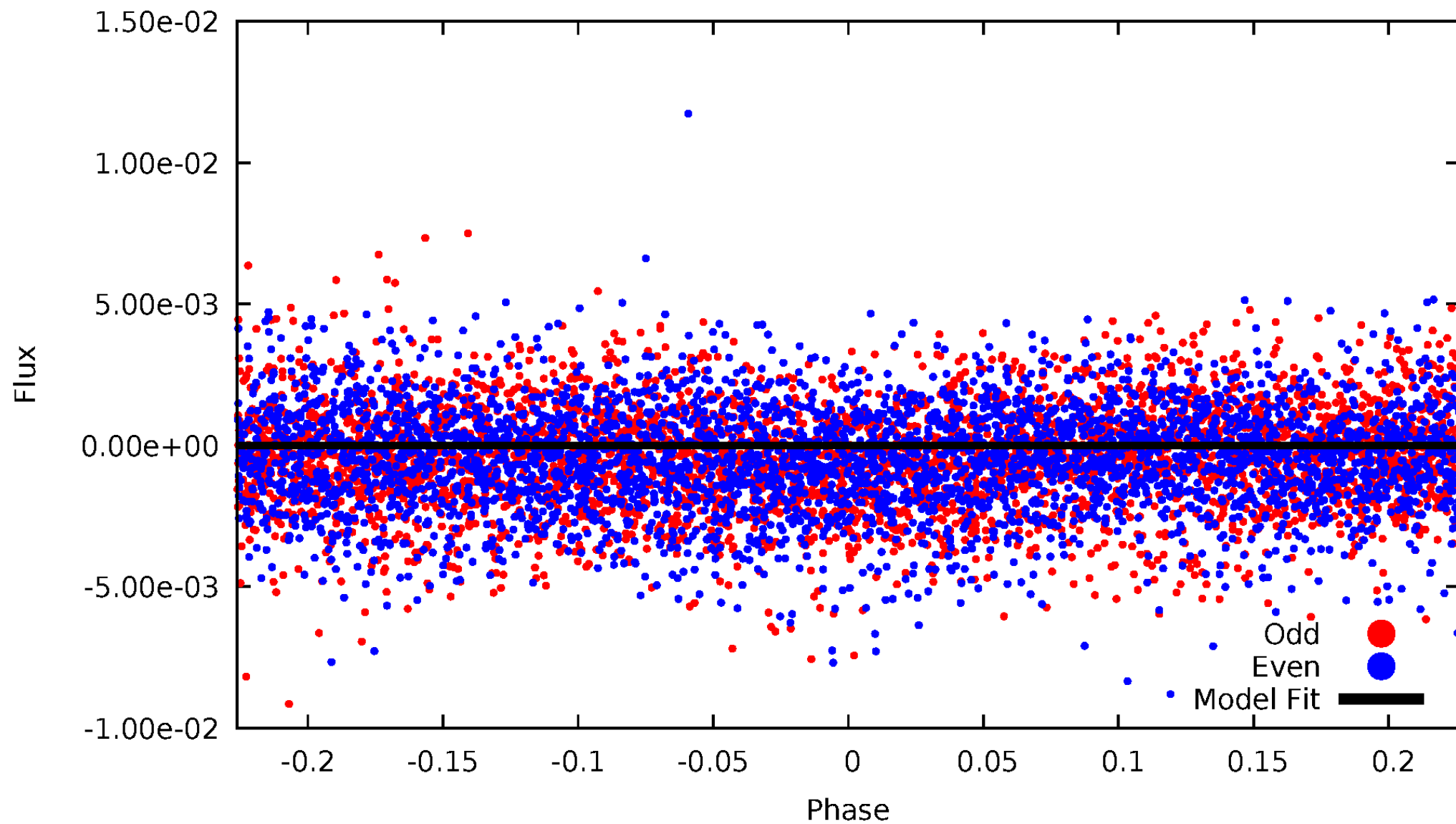


TCE 003337002-03



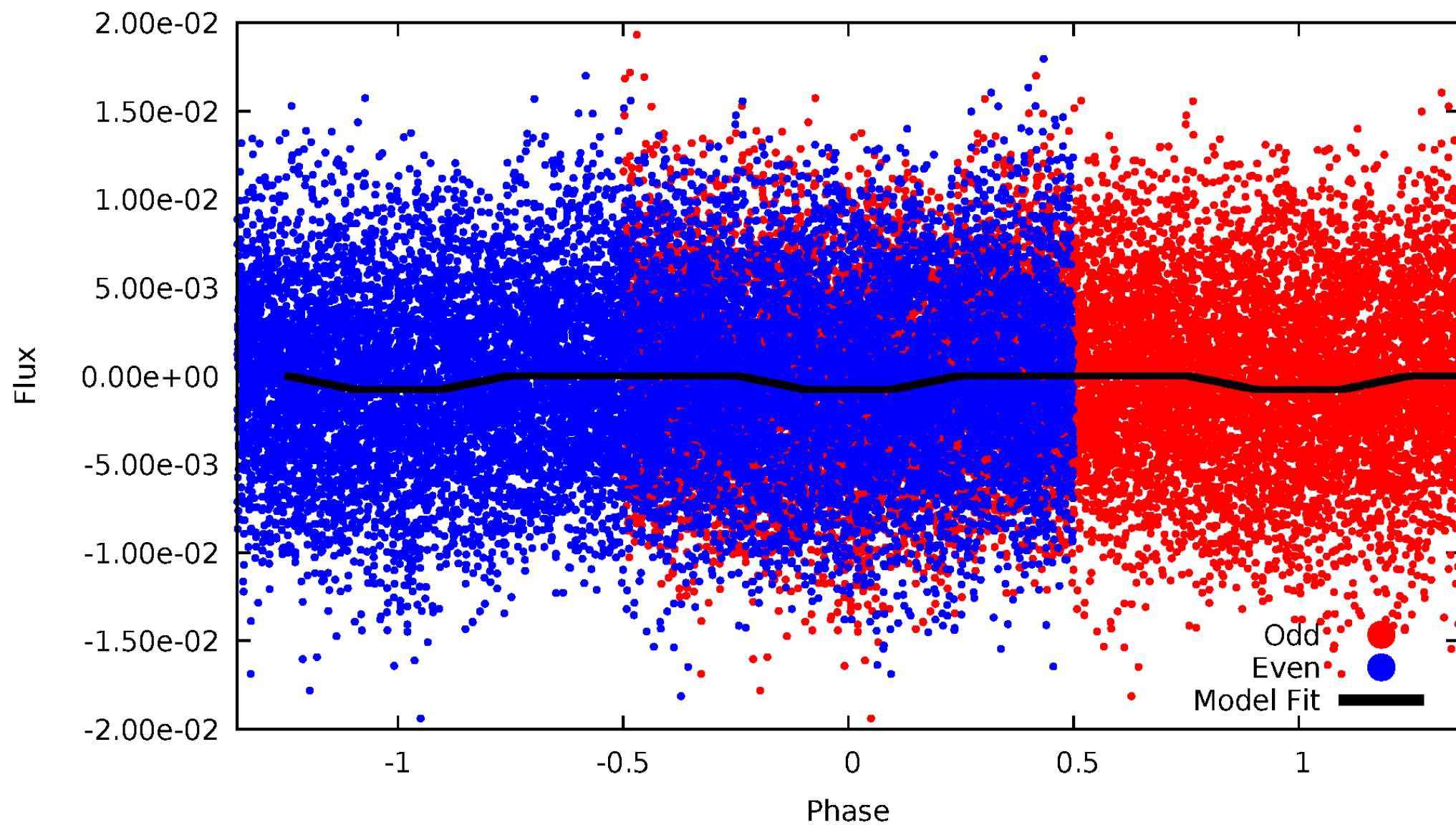
DV Odd/Even

TCE 003337002-03

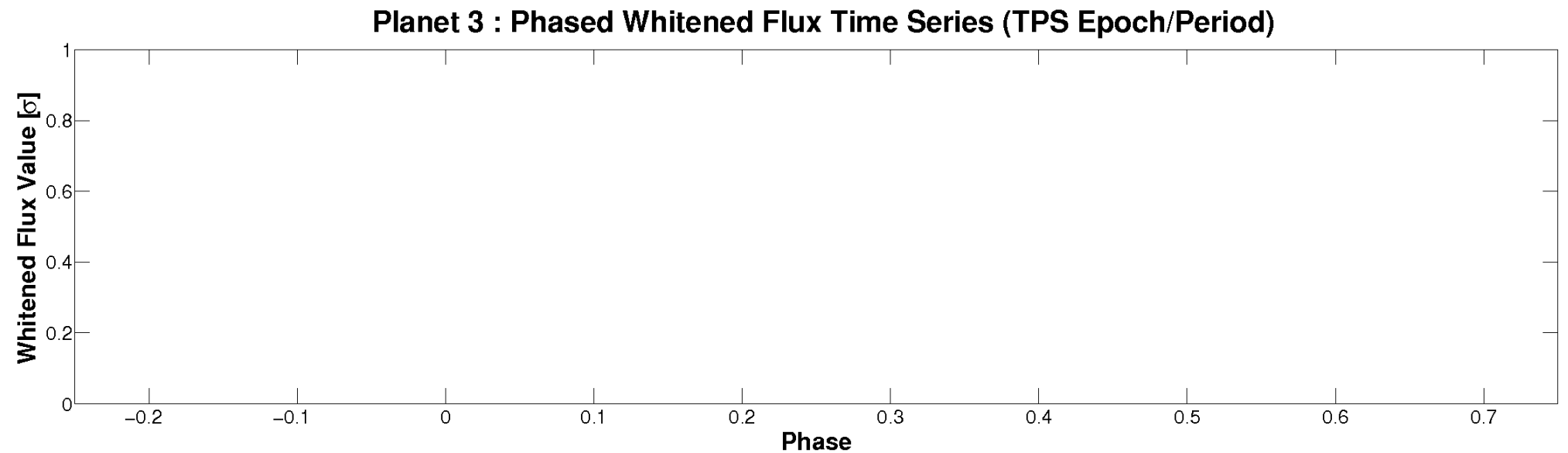
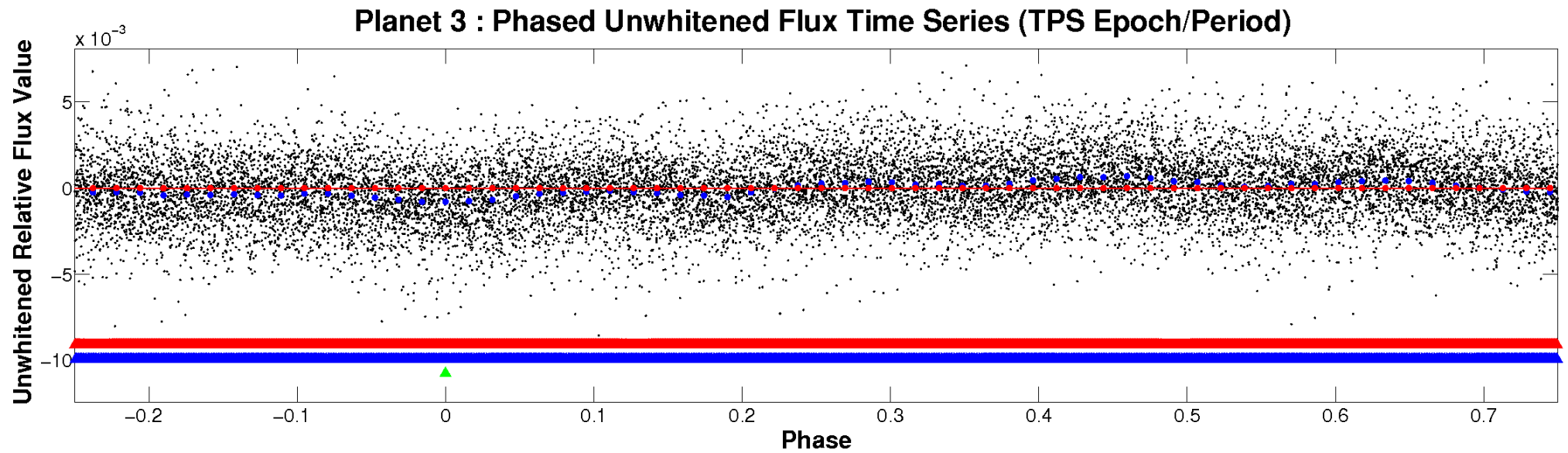


ALT Odd/Even

TCE 003337002-03

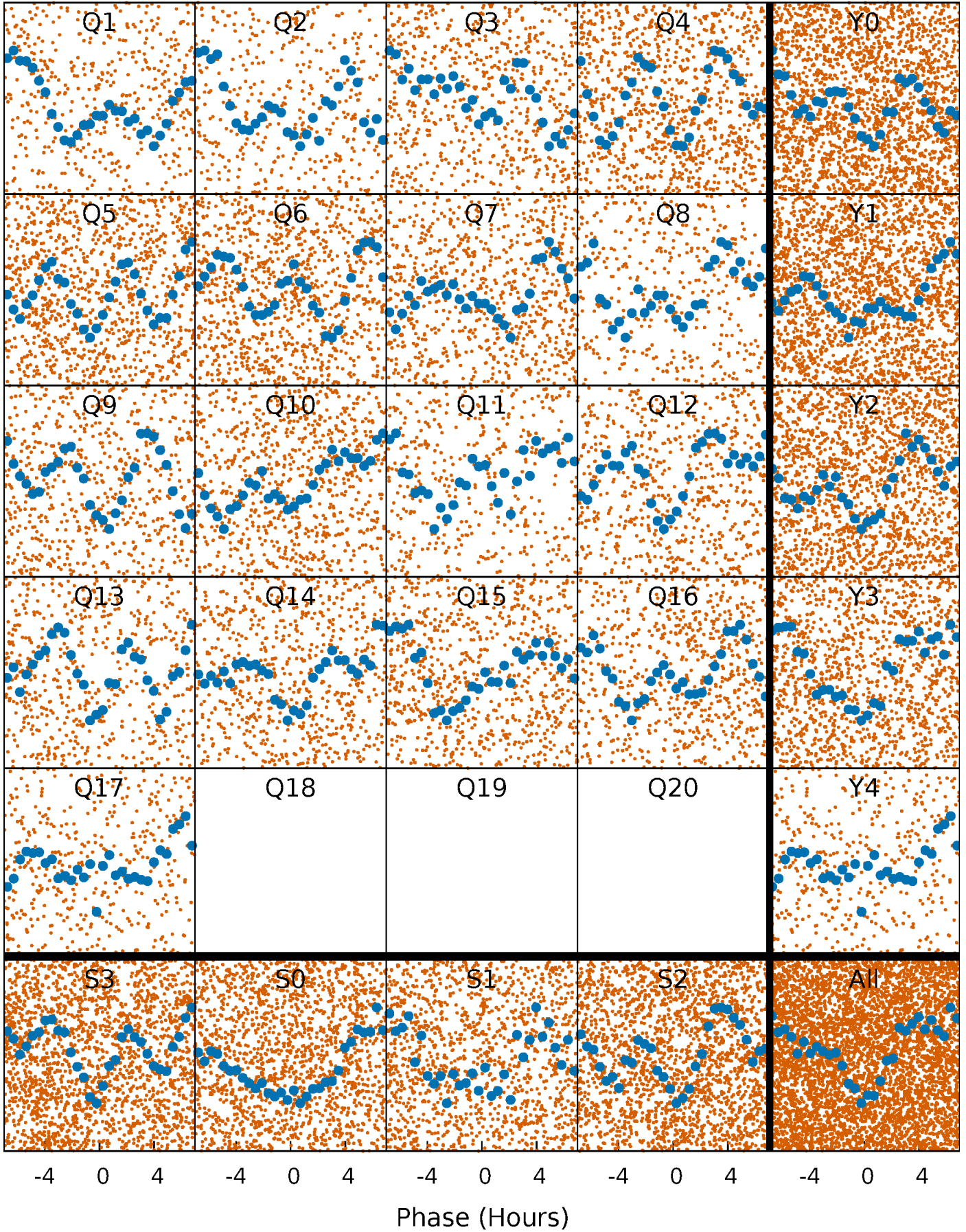


Non-Whitened Vs. Whitened Light Curve



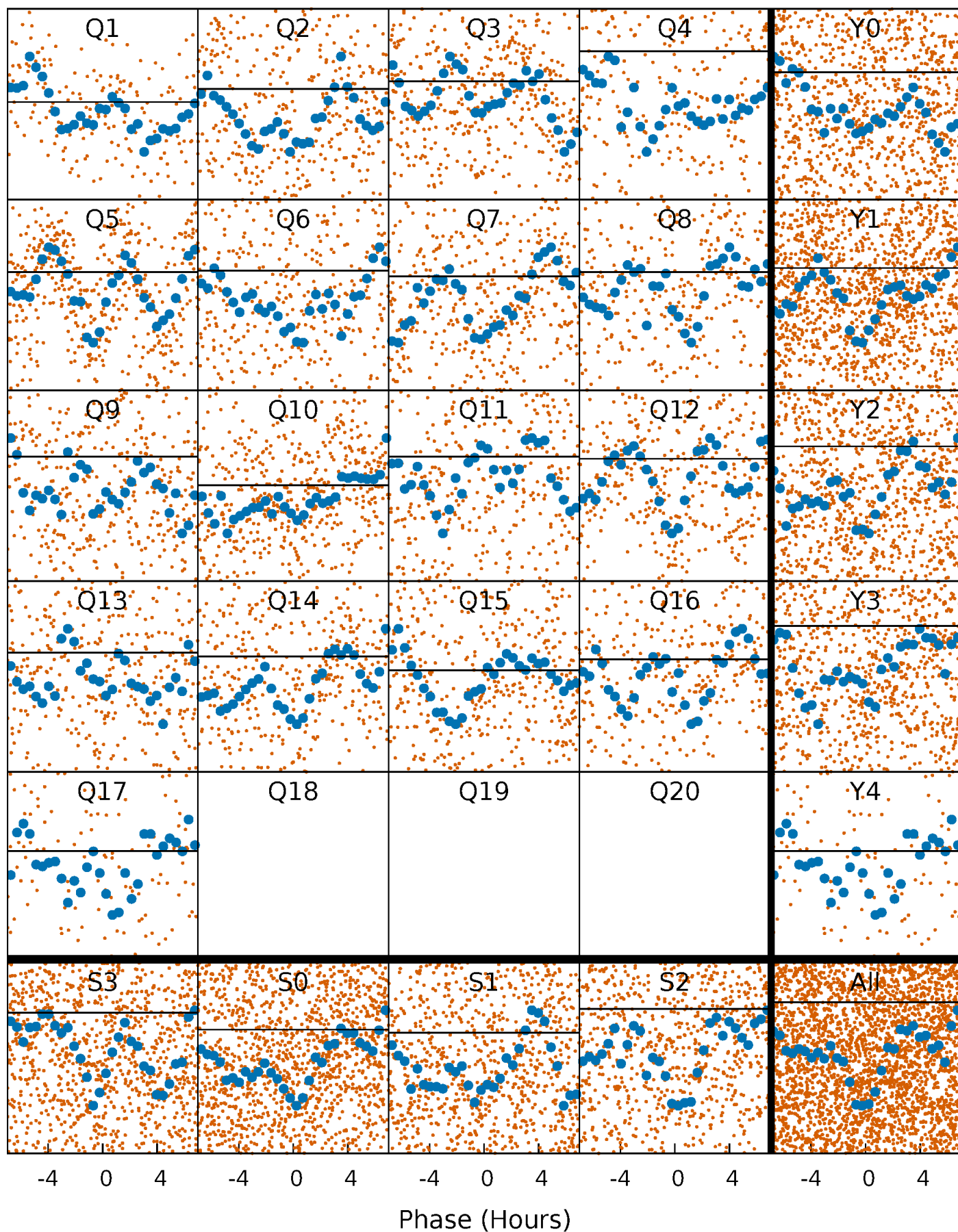
PDC Quarter-Phased Transit Curves

TCE 003337002-03 $P = 1.289711$ Days $T_0 = 131.967343$ (BKJD)



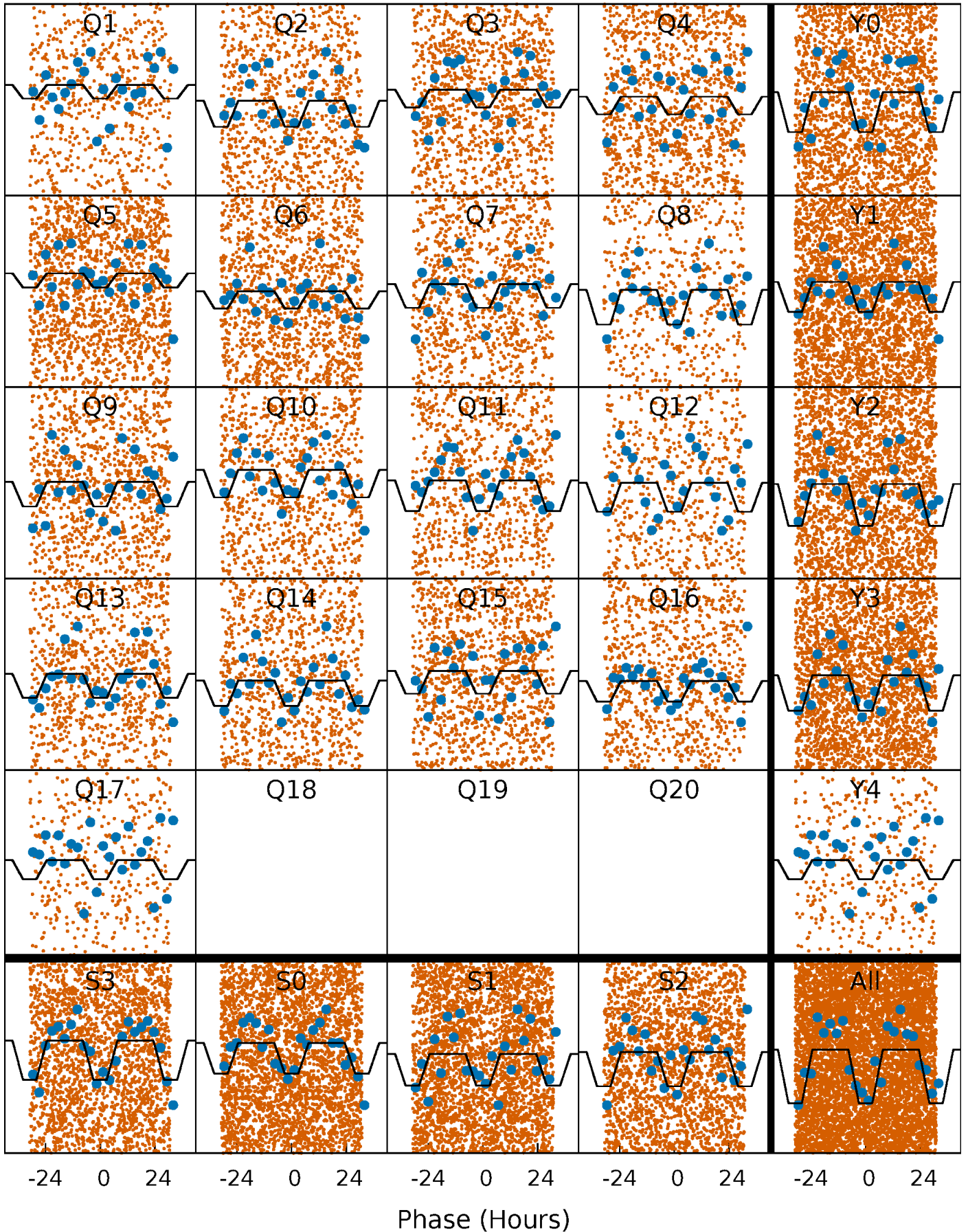
DV Quarter-Phased Transit Curves

TCE 003337002-03 $P = 1.289711$ Days $T_0 = 131.967343$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

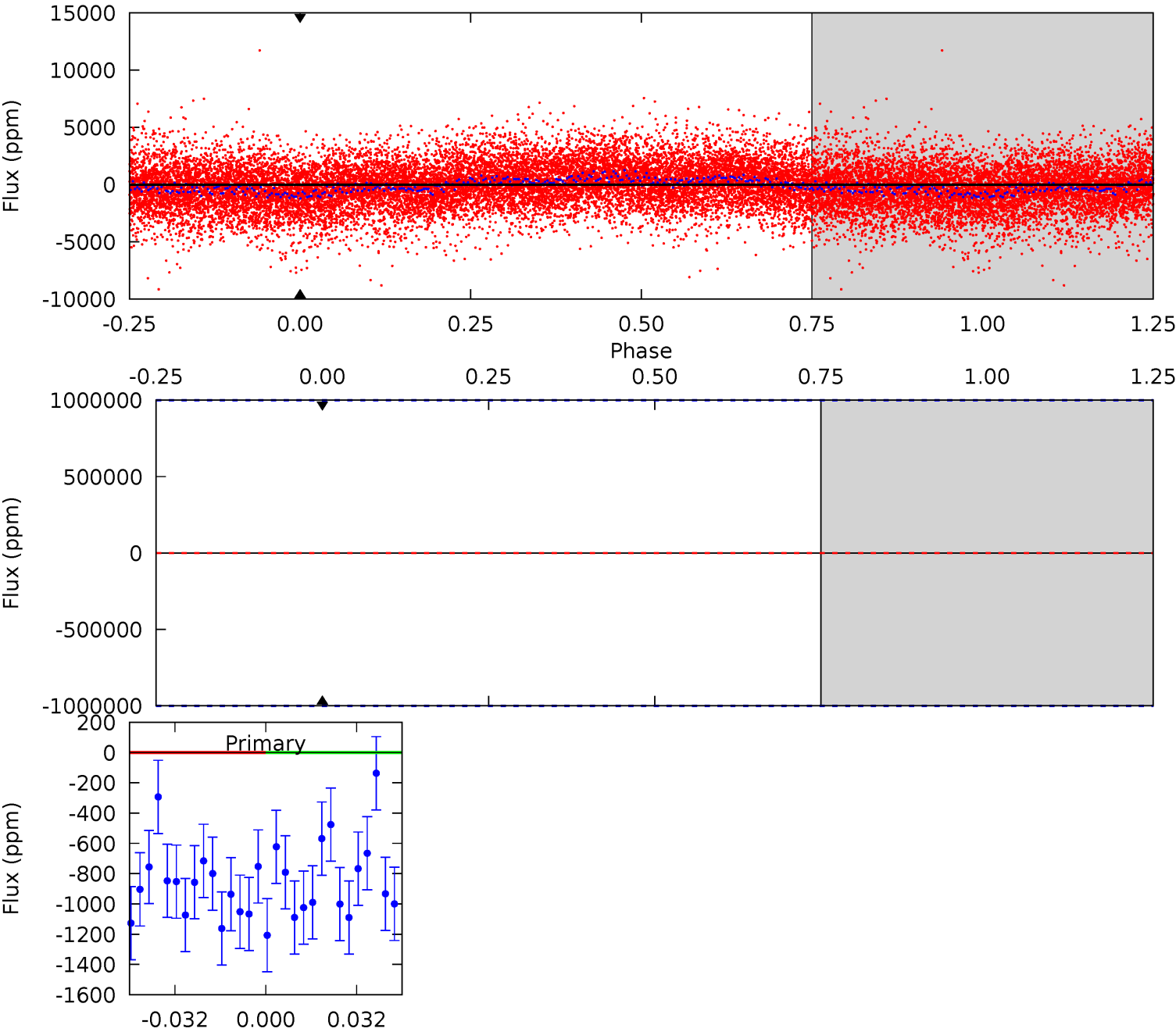
TCE 003337002-03 $P = 1.289711$ Days $T_0 = 131.942637$ (BKJD)



DV Model-Shift Uniqueness Test

003337002-03, P = 1.289711 Days, E = 130.677632 Days

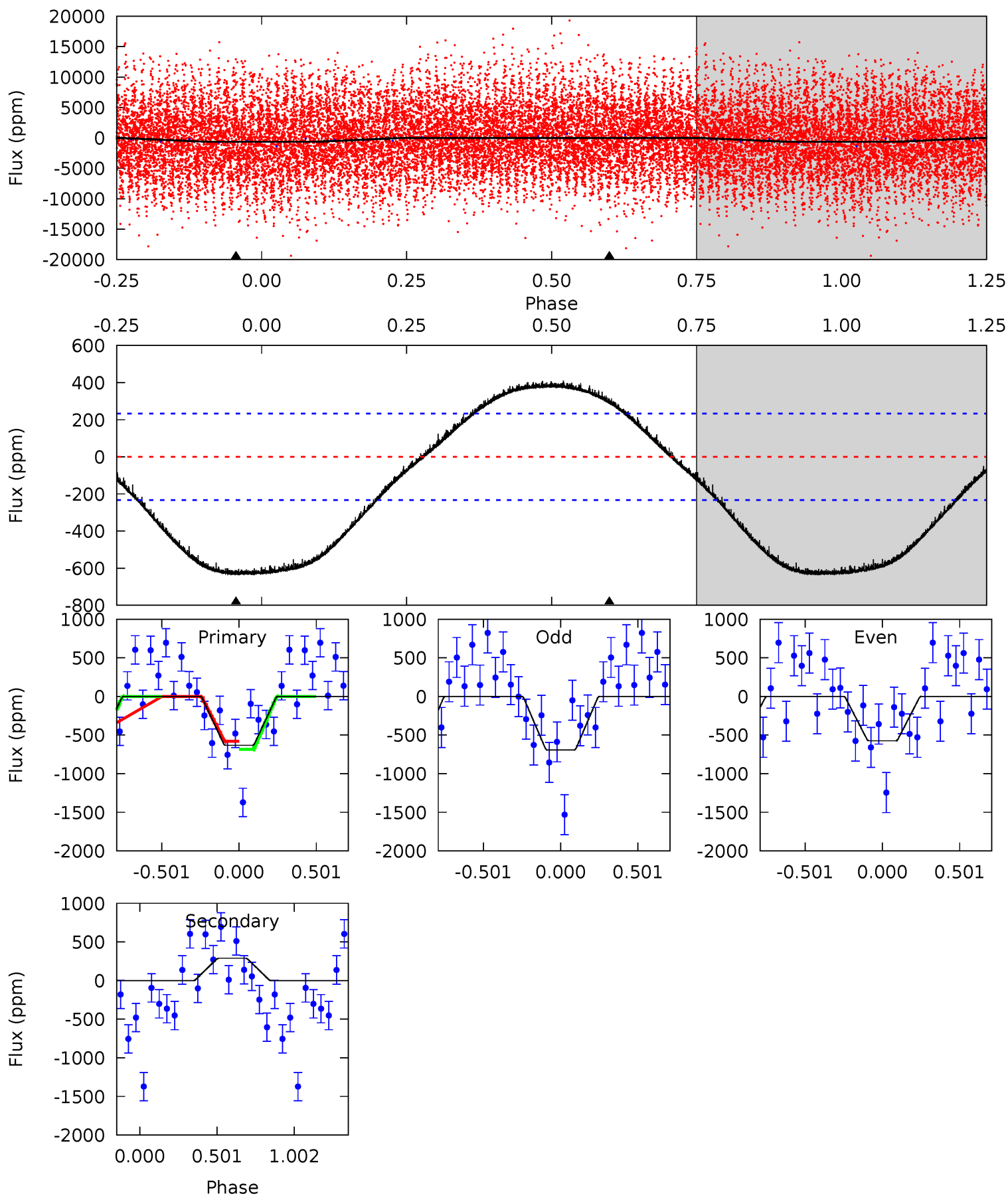
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003337002-03, P = 1.289711 Days, E = 130.652926 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	-5.20	0	0	4.21	0.67	1.42	11.4	11.4	-5.20	-5.20	1.07	1.40	0.39	0.91



Stellar Parameters For KIC 003337002

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7419^{+230}_{-307}	$3.641^{+0.495}_{-0.055}$	$-0.160^{+0.250}_{-0.300}$	$3.553^{+0.331}_{-1.763}$	$2.017^{+0.100}_{-0.601}$	$0.063^{+0.357}_{-0.012}$
	+3%/-4%	+14%/-2%	+156%/-188%	+9%/-50%	+5%/-30%	+563%/-19%
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 003337002-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$24.65^{+27.77}_{-16.61}$	4838^{+329}_{-618}	4796^{+36222}_{-40058}	$1.082^{+155.715}_{-128.815}$
Alt.	288 ± 55	$24.61^{+31.41}_{-15.65}$	4844^{+334}_{-578}	-4598^{+389}_{-1539}	$-0.203^{+0.161}_{-1.505}$

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 $A_{obs} \gg 1.0$

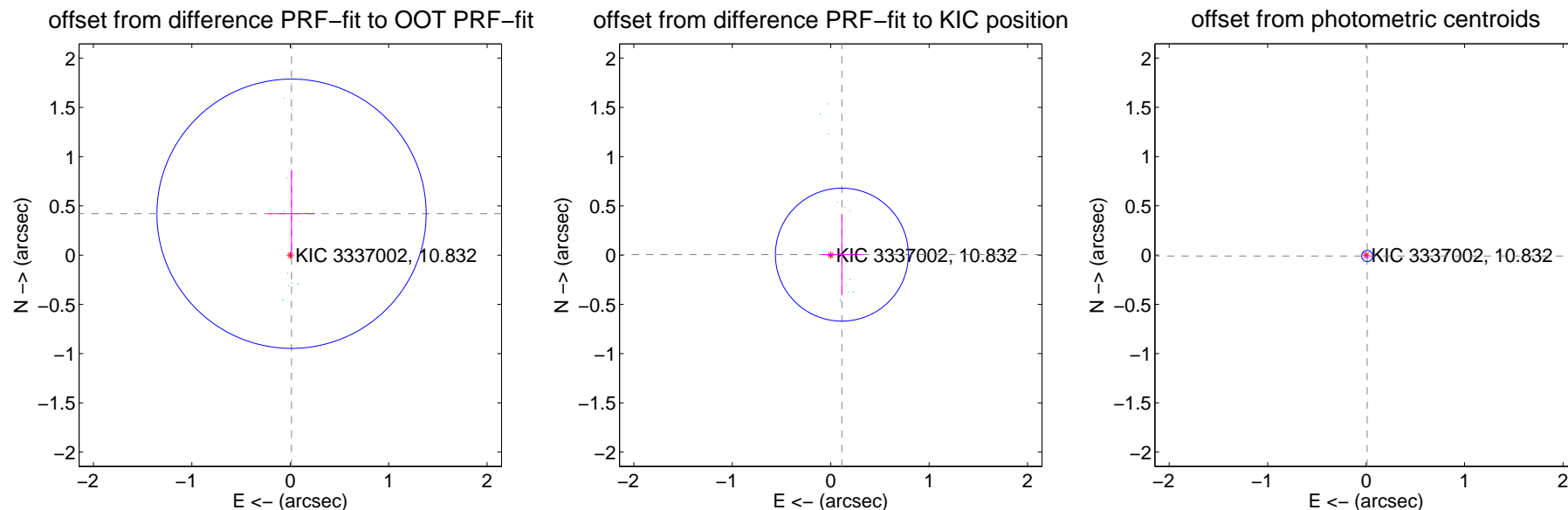
DV Centroid Data

Supplemental centroid analysis for 003337002-03. **Kepler magnitude: 10.83.** Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

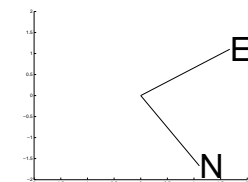
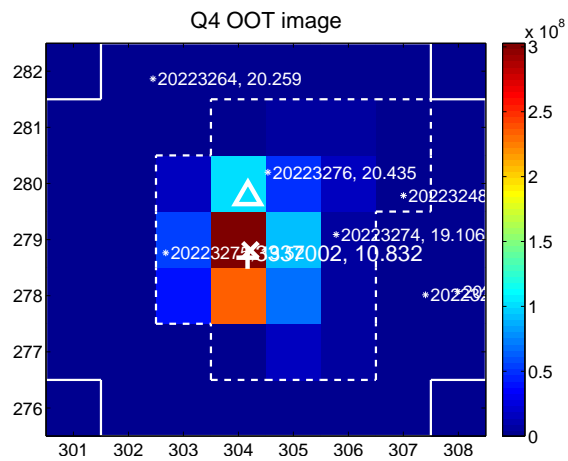
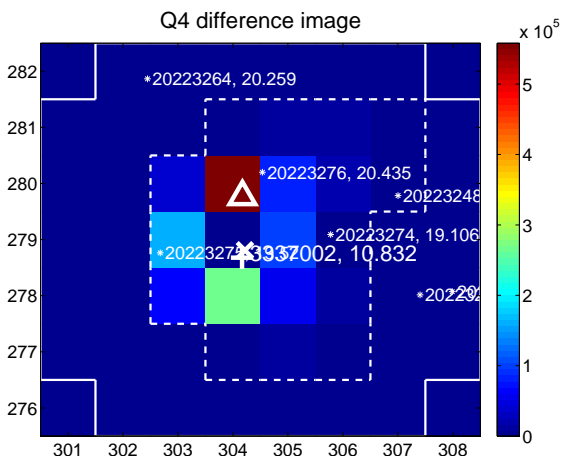
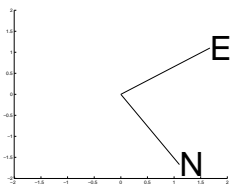
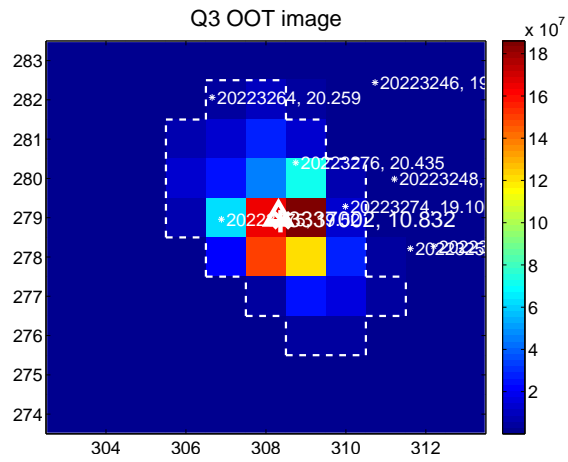
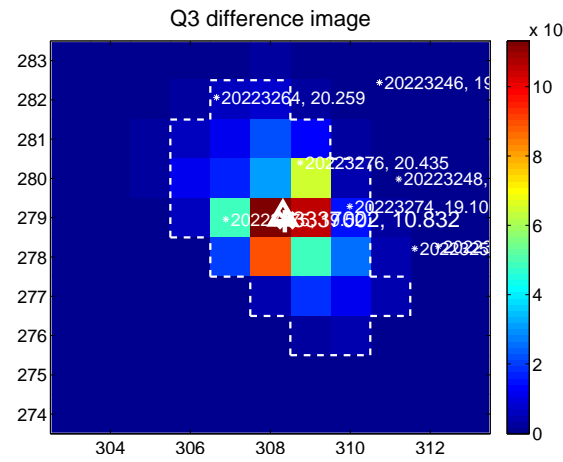
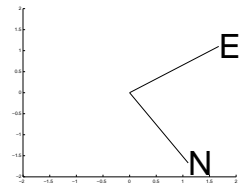
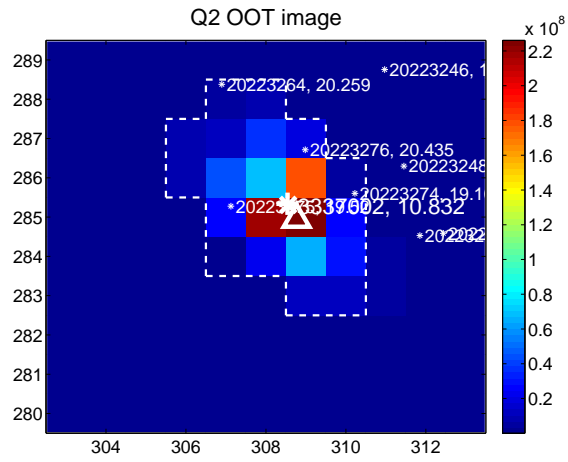
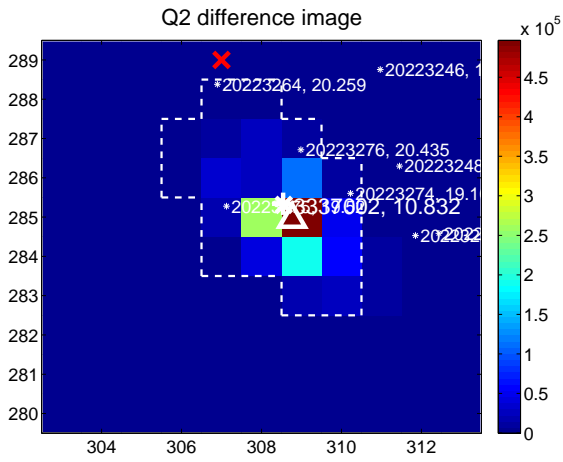
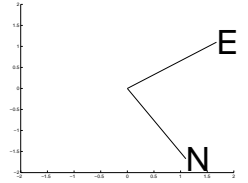
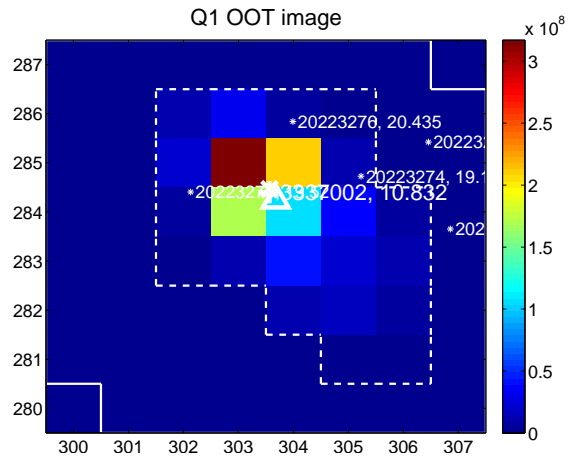
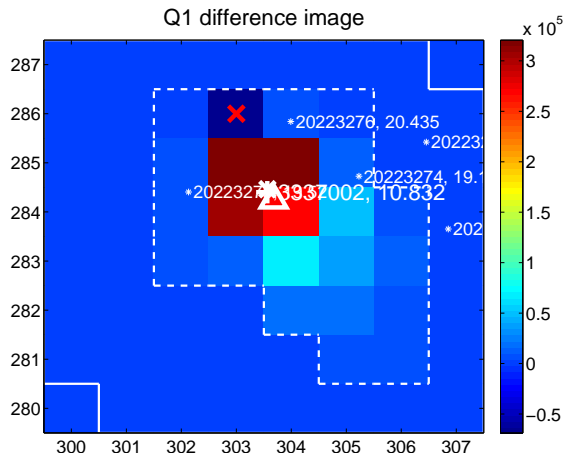
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.421 ± 0.456	0.92	-0.013 ± 0.235	0.420 ± 0.450
PRF-fit source offset from KIC position	0.113 ± 0.225	0.50	-0.113 ± 0.210	0.005 ± 0.411
photometric centroid source offset	0.01 ± 0.02	0.77	-0.01 ± 0.01	-0.01 ± 0.03

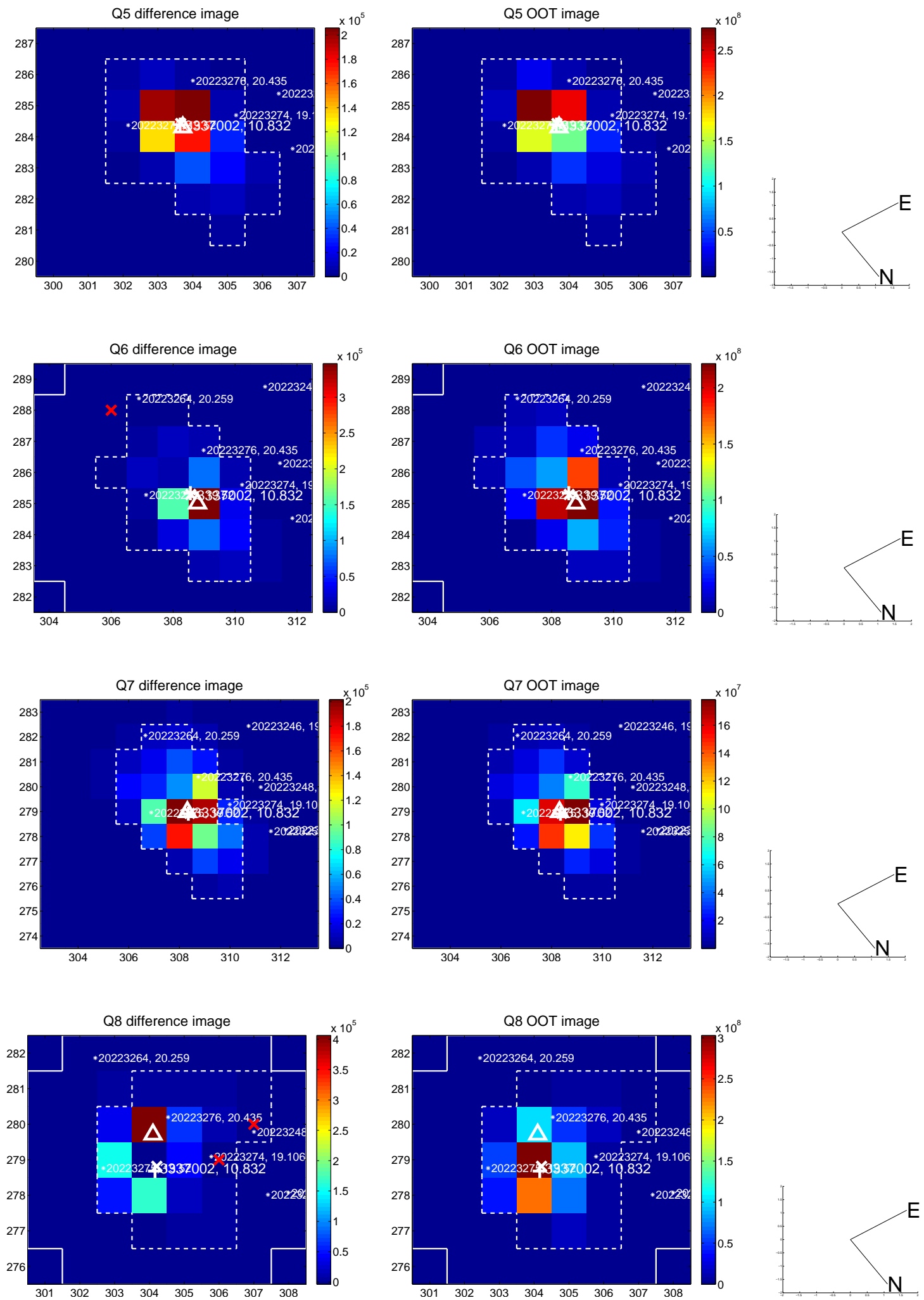


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

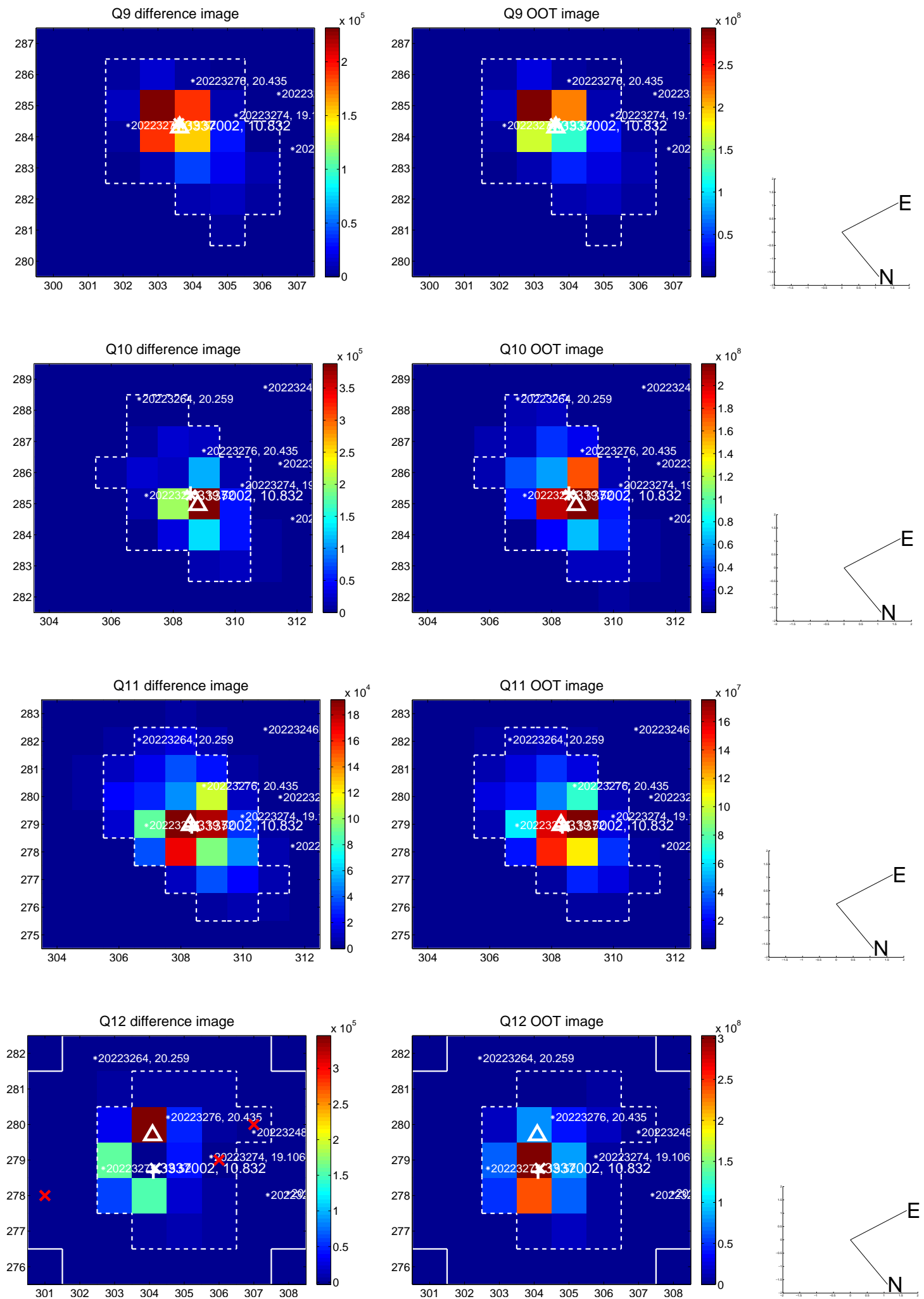
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



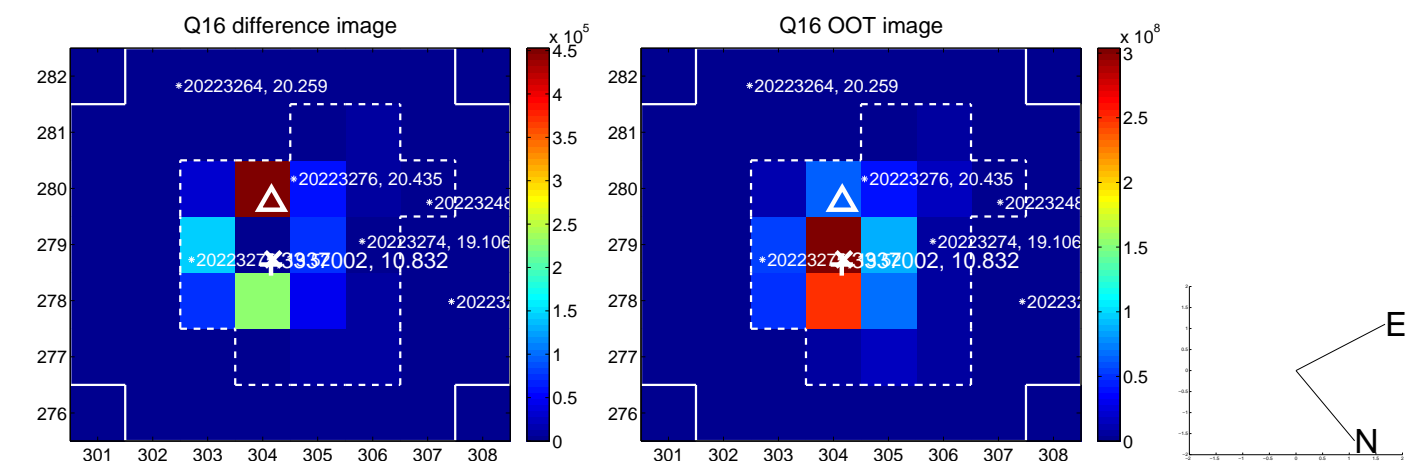
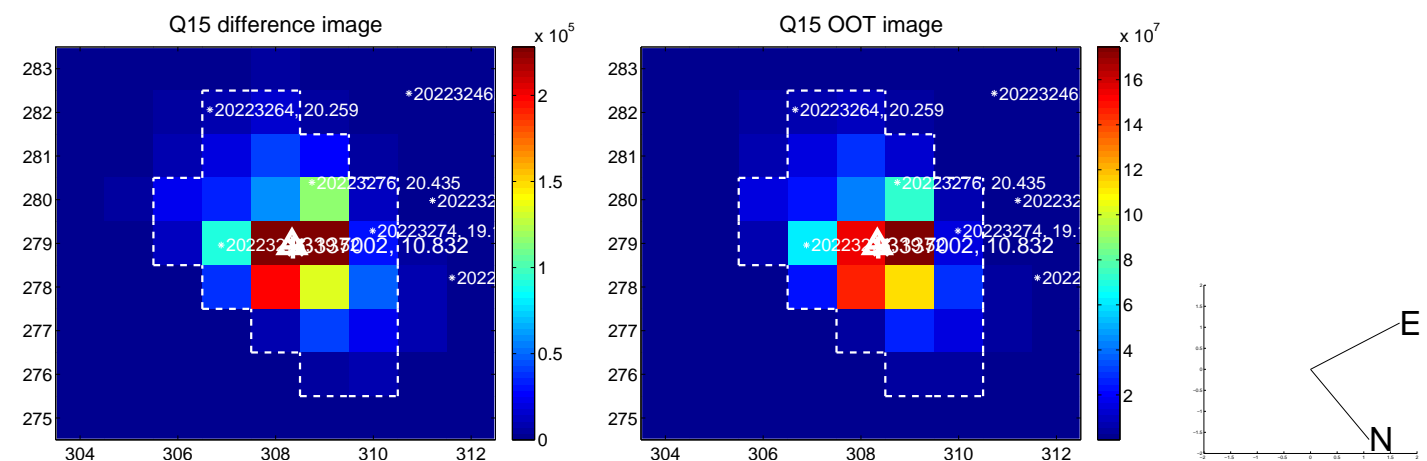
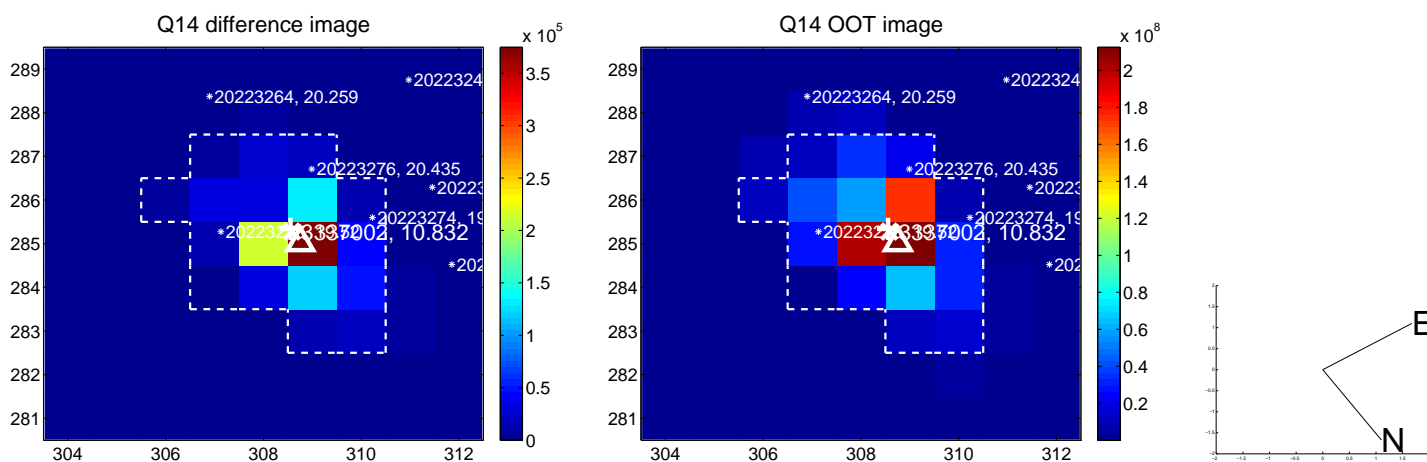
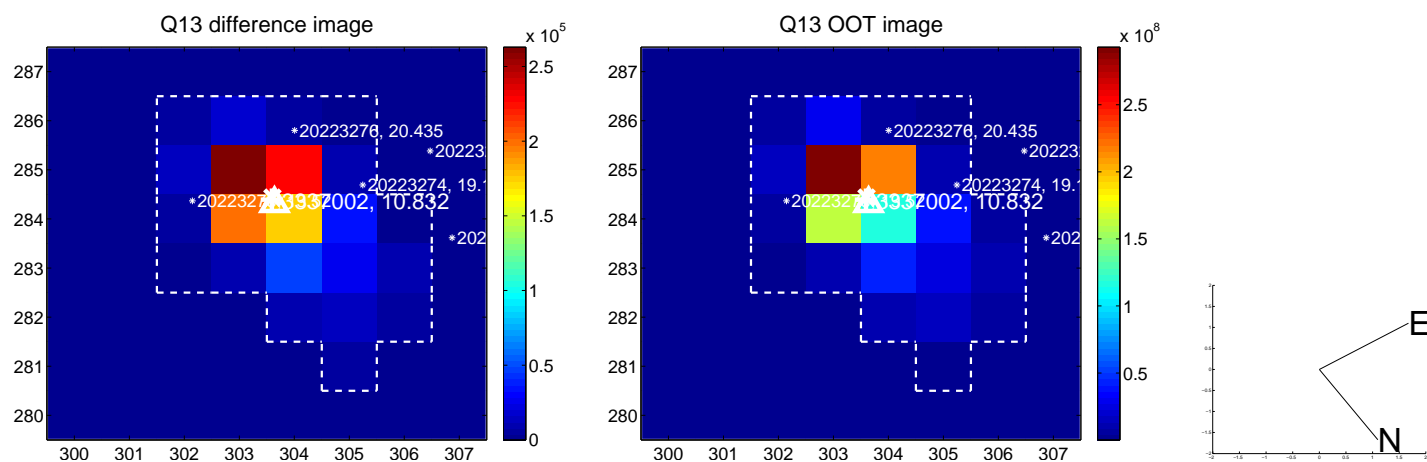
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

