

KIC 003323168

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})
003323168-01	OBS	No	1.363926	132.082403	109.2	7.332	12.7	13.1	2.77	7617	2.99	27471.16
003323168-02	OBS	No	0.711953	131.856570	177.2	2.250	9.2	10.8	2.77	7617	4.33	65362.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003323168-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003323168-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

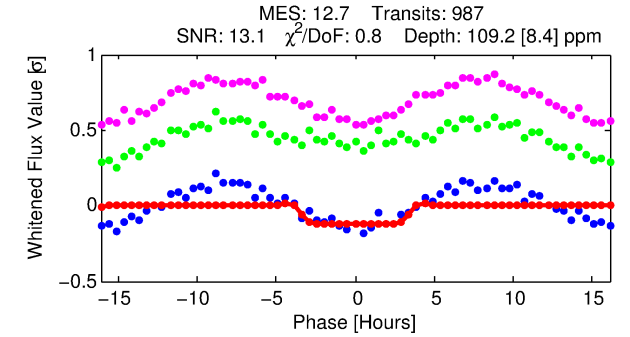
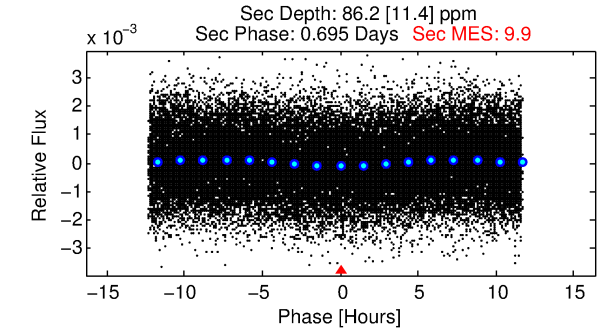
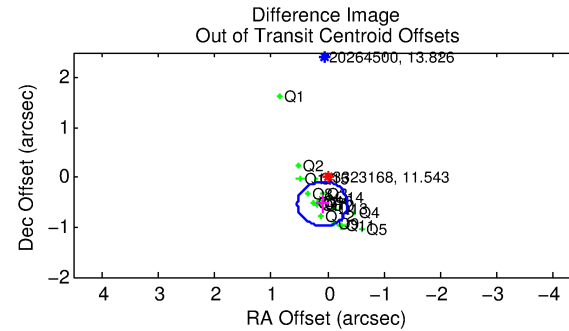
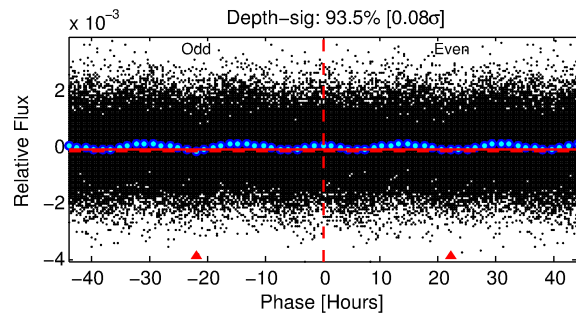
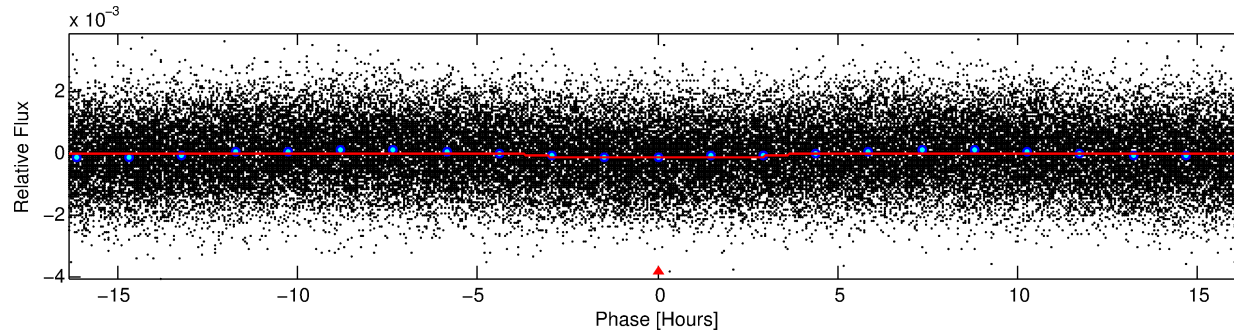
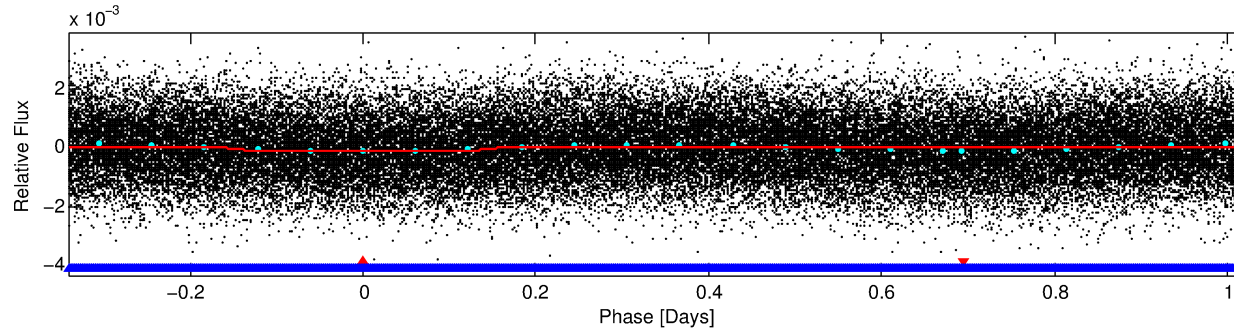
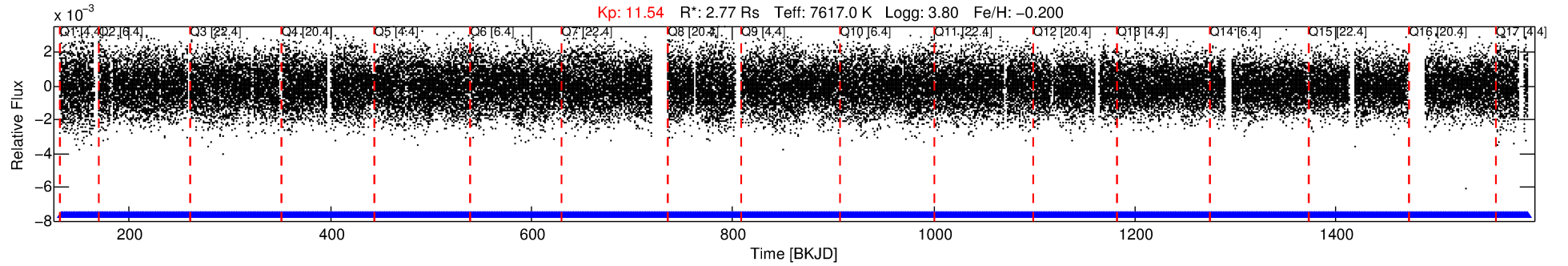
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003323168-01

No Significant Match Found

DV One-Page Summary

KIC: 3323168 Candidate: 1 of 2 Period: 1.364 d



DV Fit Results:

Period = 1.36393 [0.00001] d
Epoch = 132.0824 [0.0057] BKJD
Rp/R* = 0.0099 [0.0095]
a/R* = 1.44 [3.62]
b = 0.52 [6.96]
Seff = 27471.16 [18257.47]
Teq = 3283 [545] K
Rp = 2.99 [3.14] Re
a = 0.0290 [0.0117] AU
Ag = 4.46 [9.07] [0.38 σ]
Teffp = 7378 [3568] K [1.13 σ]

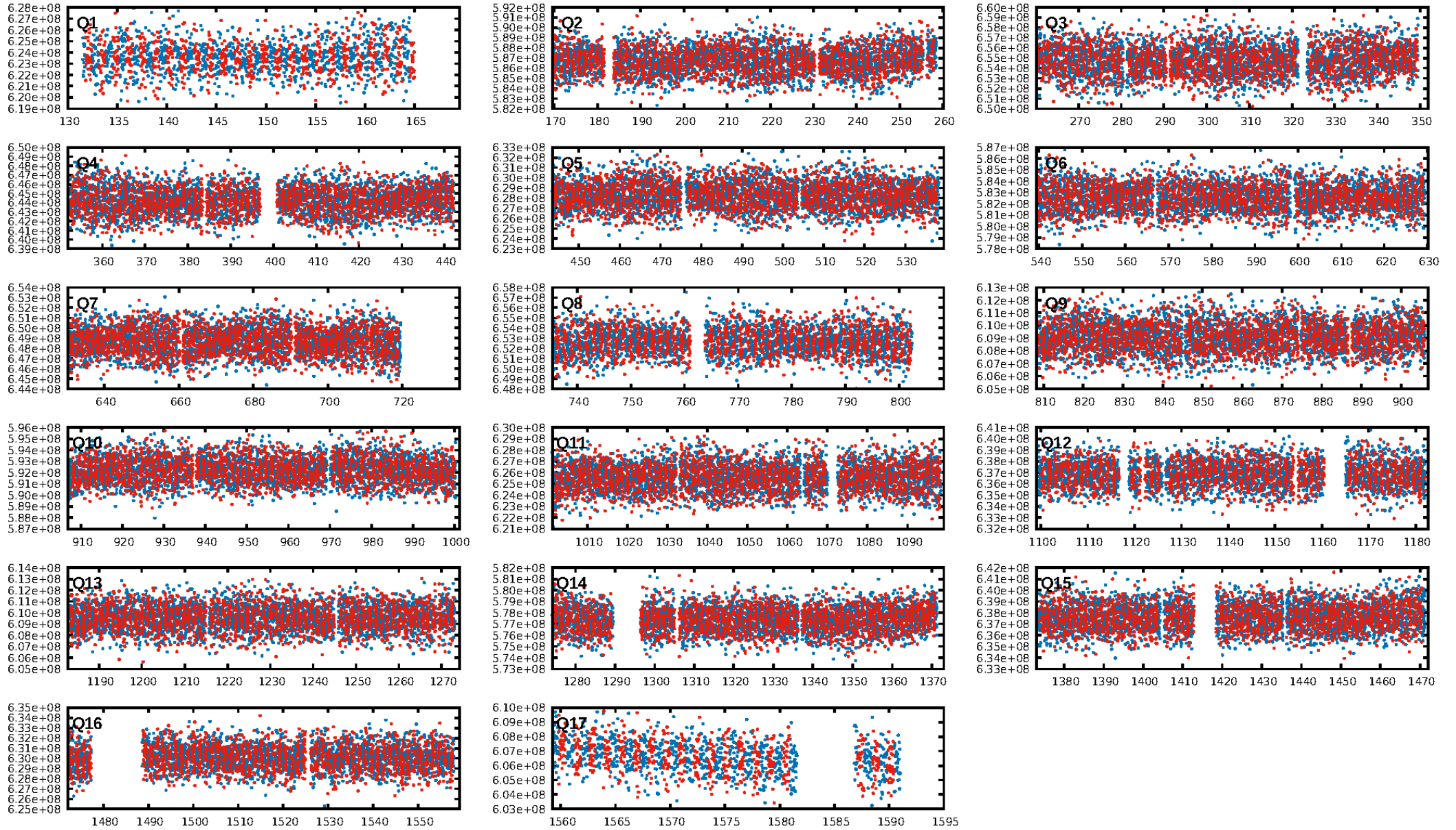
DV Diagnostic Results:

ShortPeriod-sig: 95.9% [2.04 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.17e-22
RollingBand-fgt: 1.00 [943/943]
GhostDiagnostic-chr: 0.9492
Centroid-sig: 0.0%
Centroid-so: 0.558 arcsec [4.21 σ]
OotOffset-rm: 0.543 arcsec [3.66 σ]
KicOffset-rm: 0.391 arcsec [3.74 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]

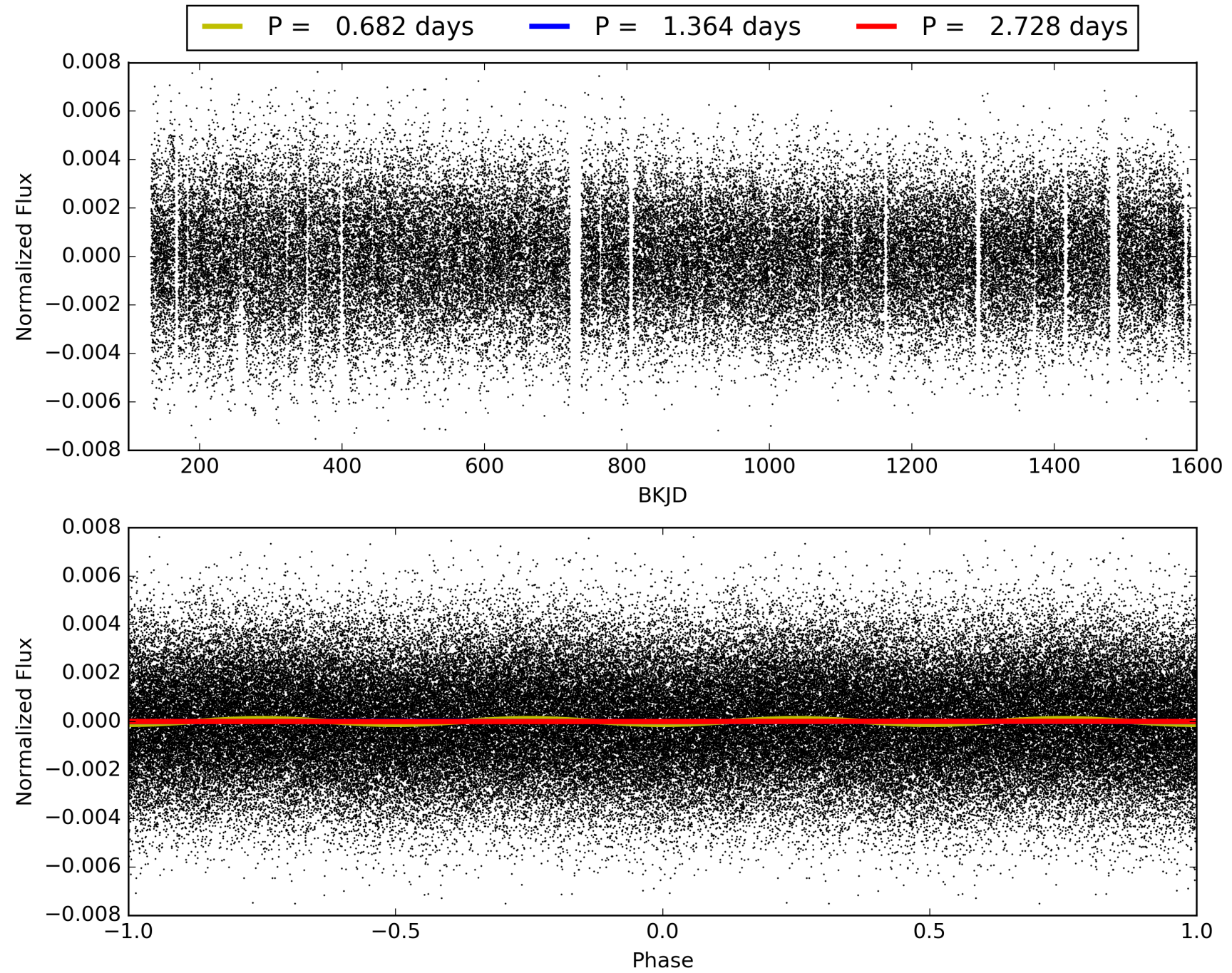
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:25:05 Z

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

TCE 00323168-01, PDC Light Curves

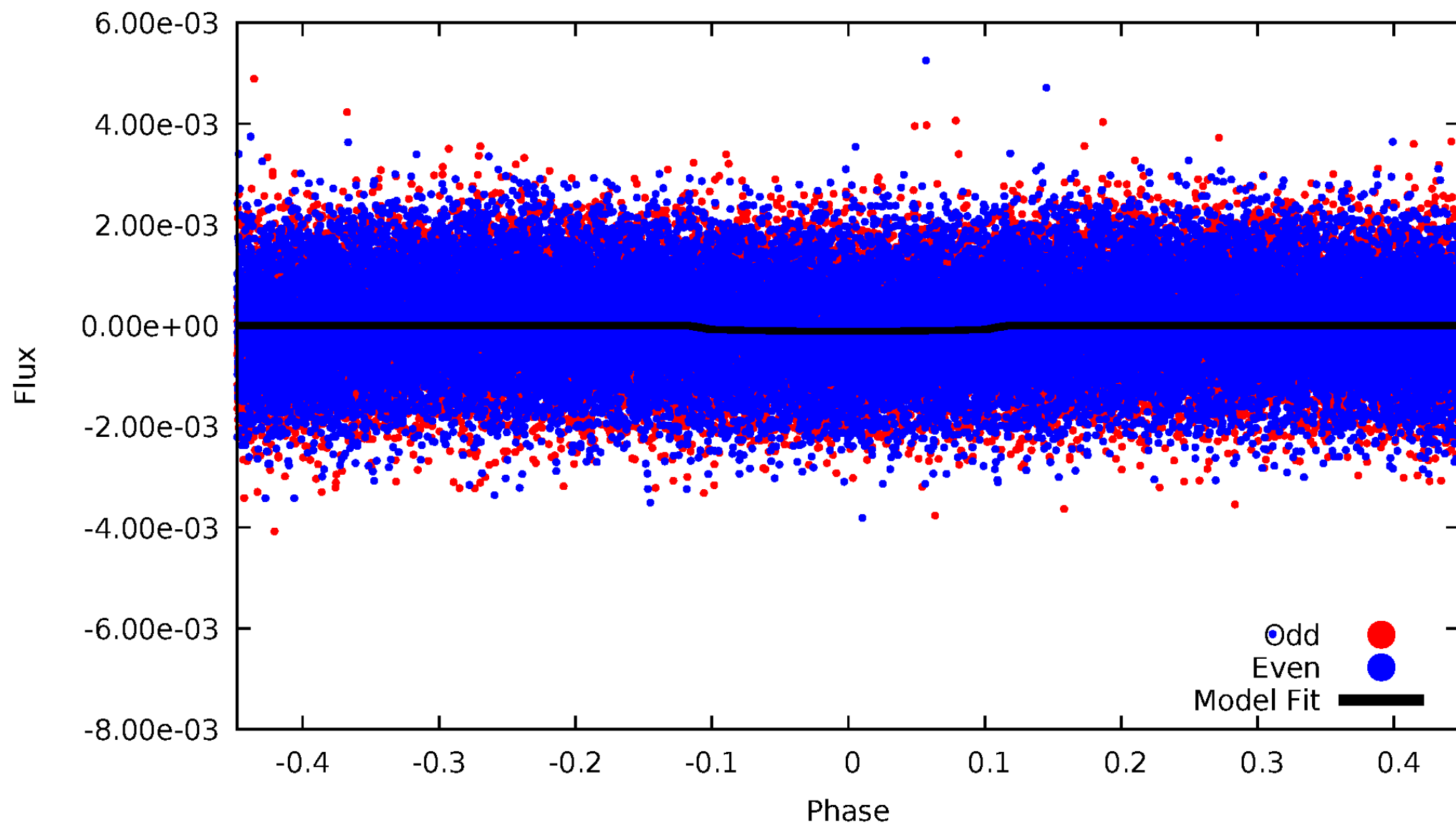


TCE 003323168-01



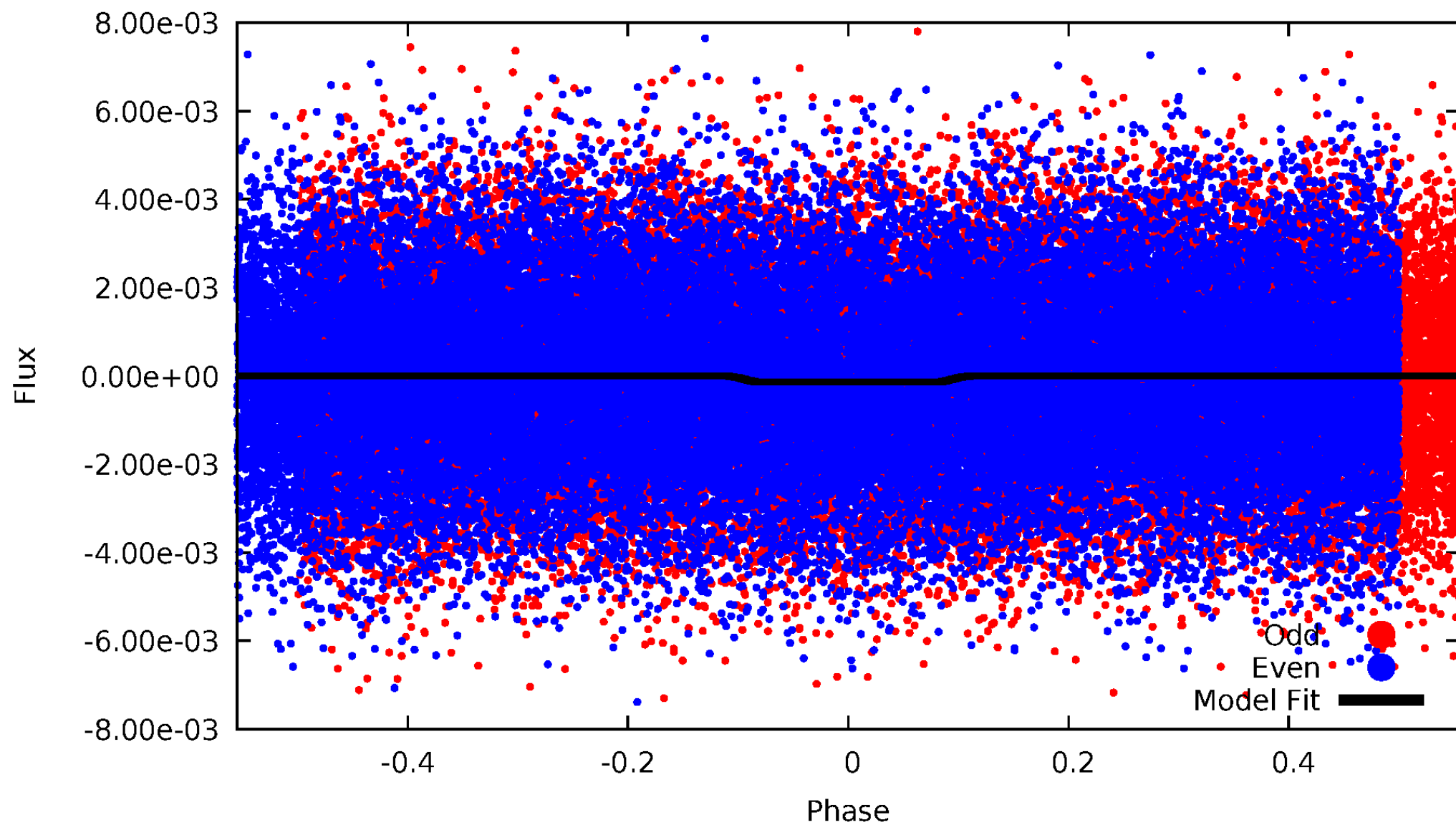
DV Odd/Even

TCE 003323168-01



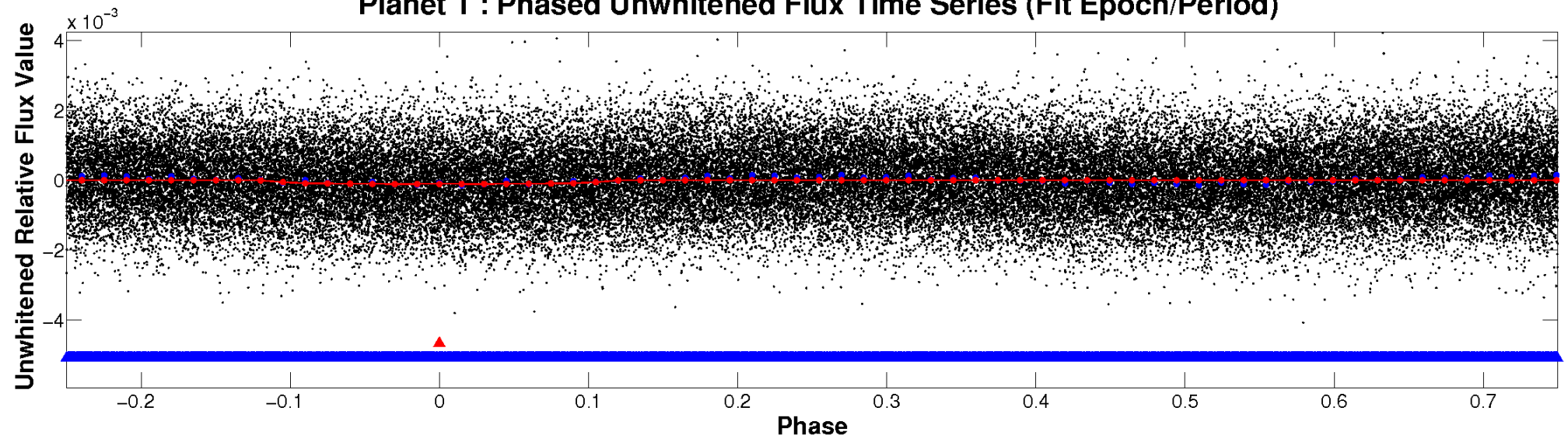
ALT Odd/Even

TCE 003323168-01

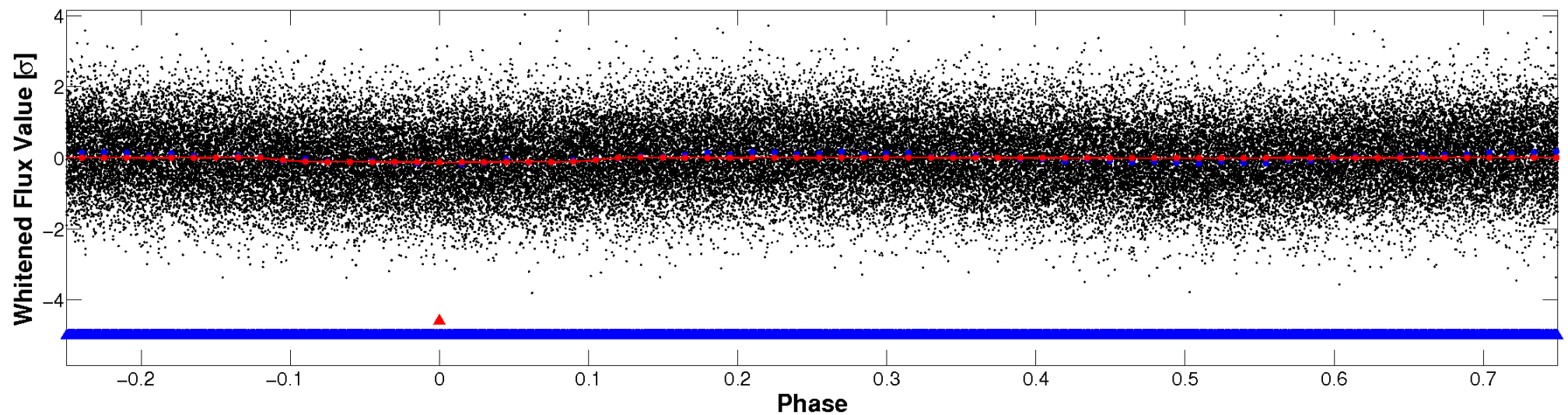


Non-Whitened Vs. Whitened Light Curve

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

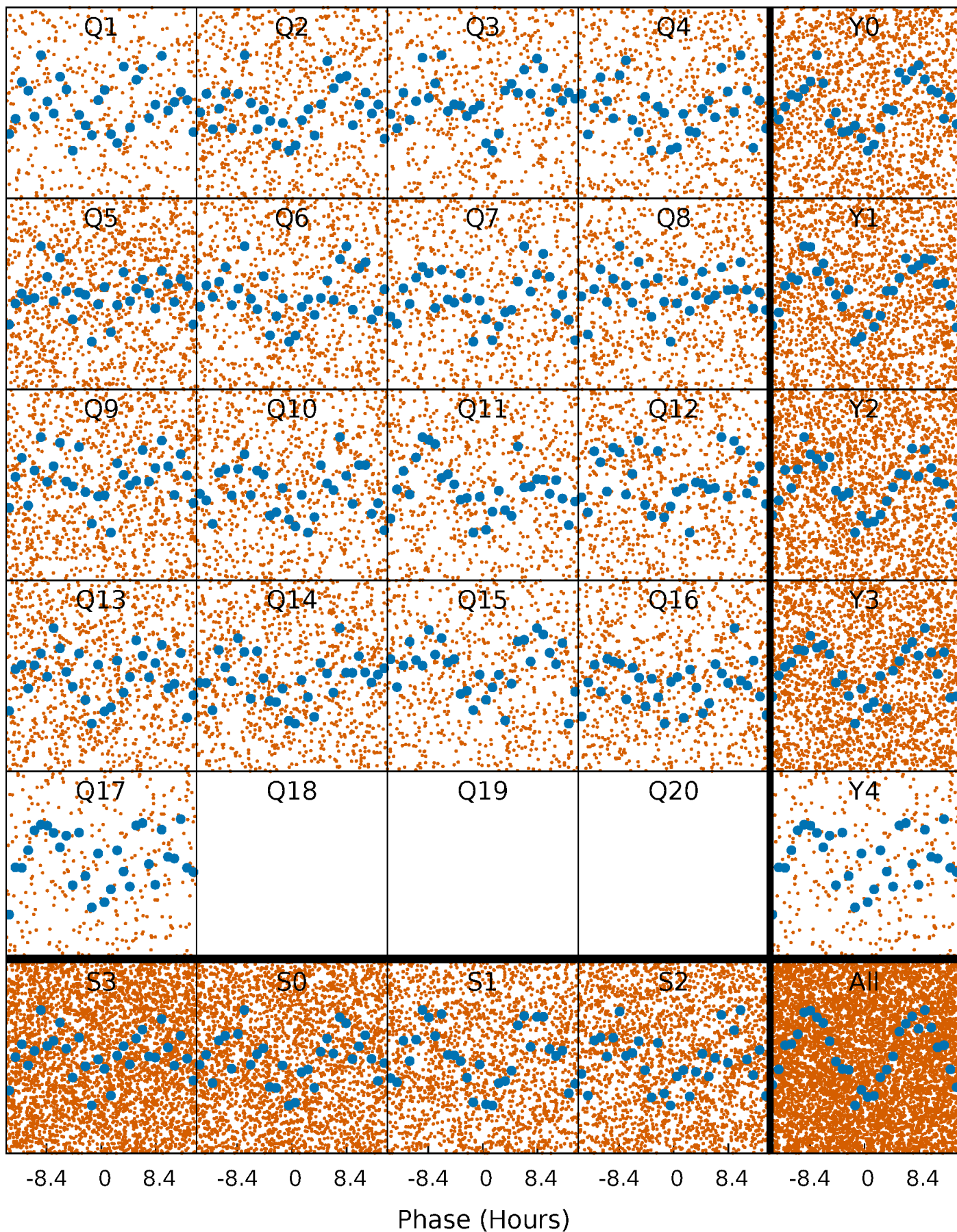


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



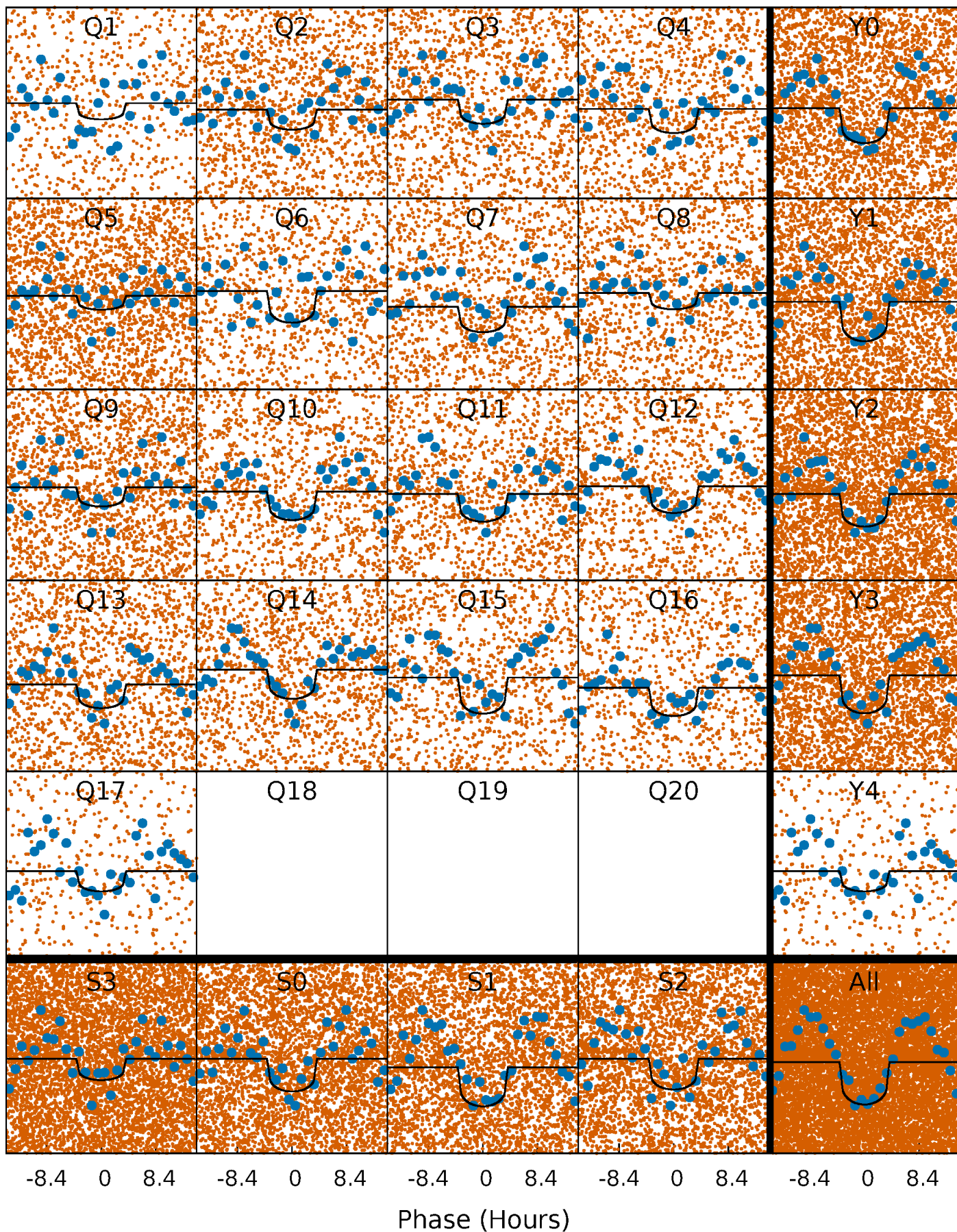
PDC Quarter-Phased Transit Curves

TCE 003323168-01 P= 1.363926 Days $T_0=132.082403$ (BKJD)



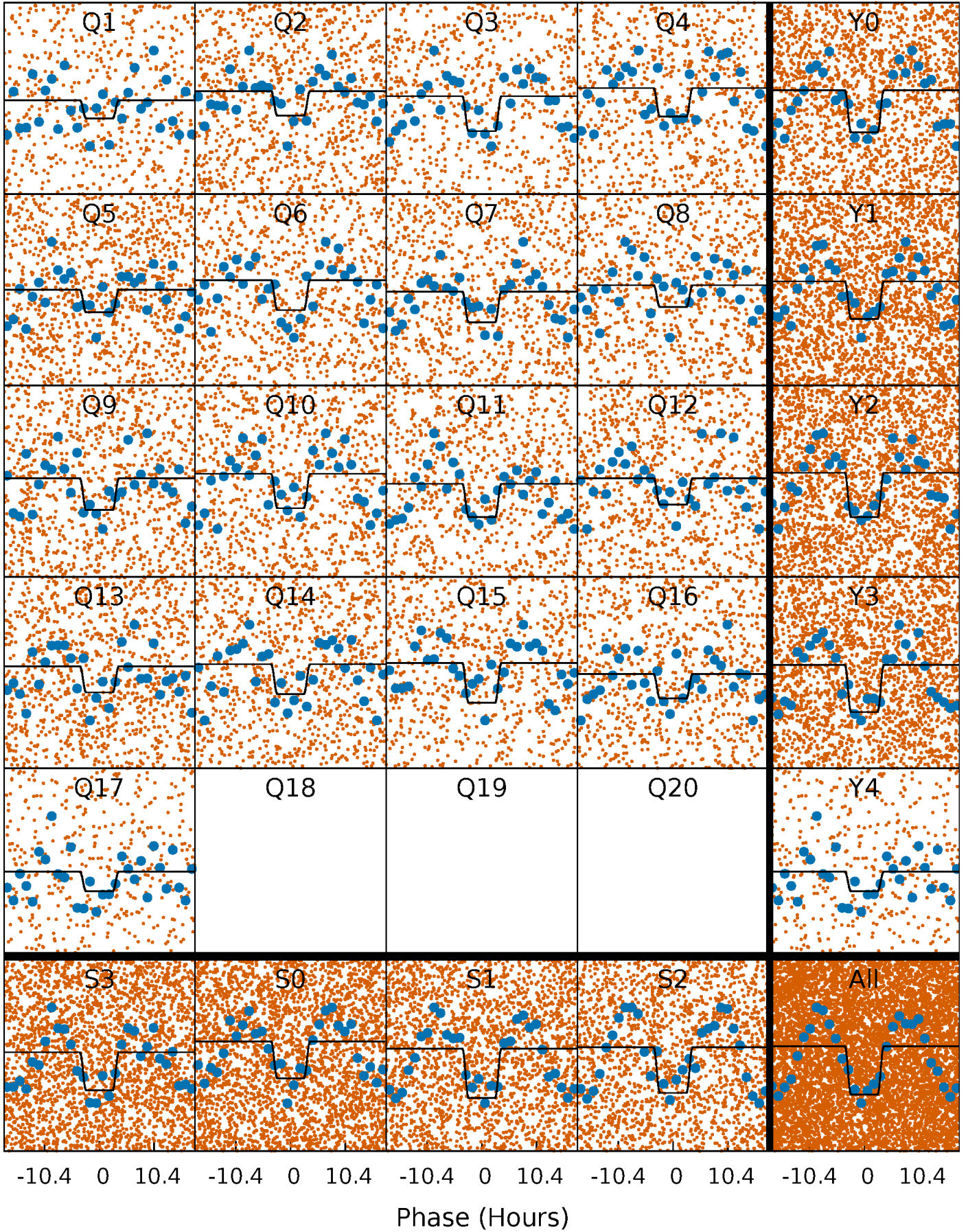
DV Quarter-Phased Transit Curves

TCE 003323168-01 P= 1.363926 Days $T_0=132.082403$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

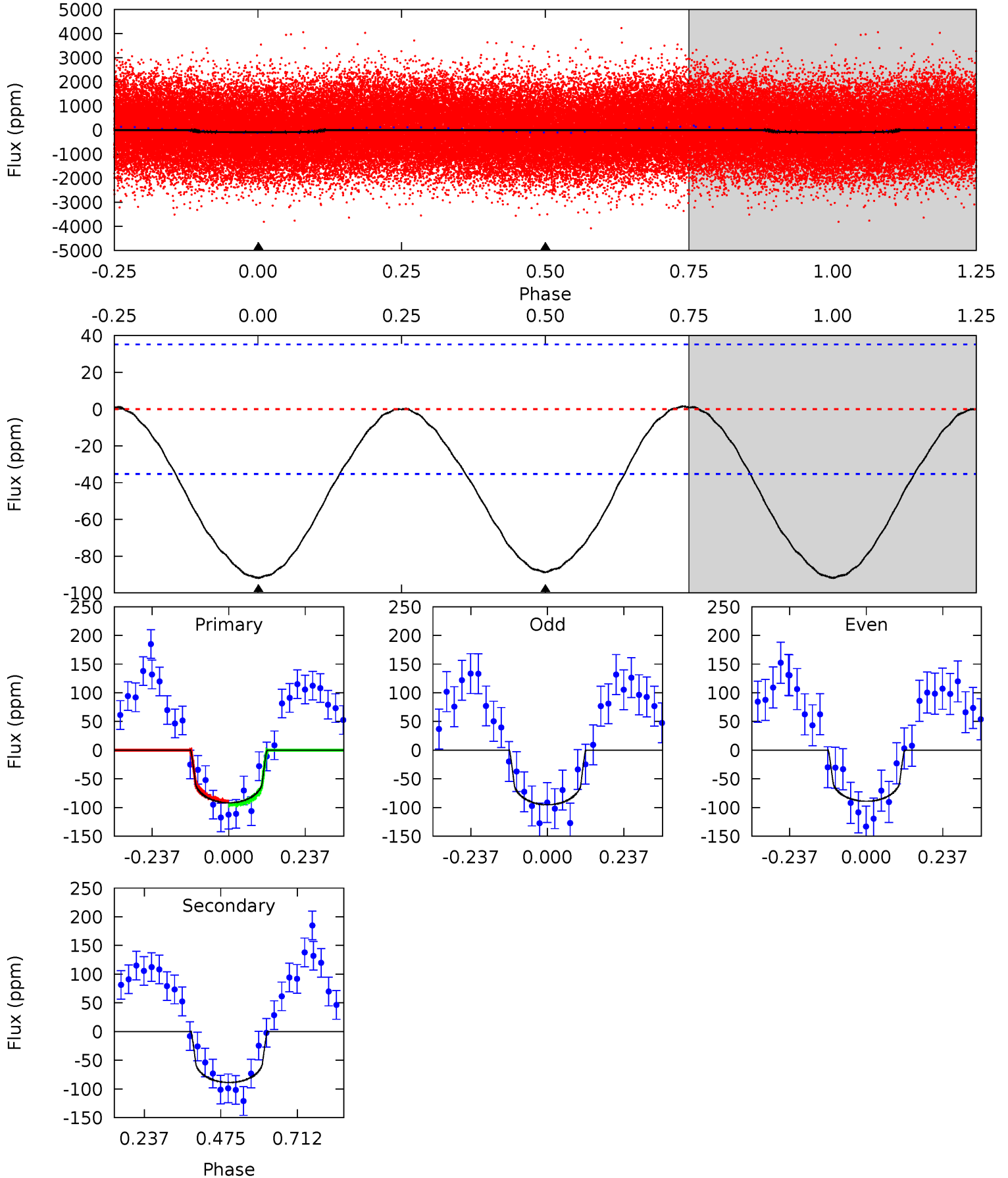
TCE 003323168-01 P= 1.363960 Days $T_0=132.069185$ (BKJD)



DV Model-Shift Uniqueness Test

003323168-01, P = 1.363926 Days, E = 130.718477 Days

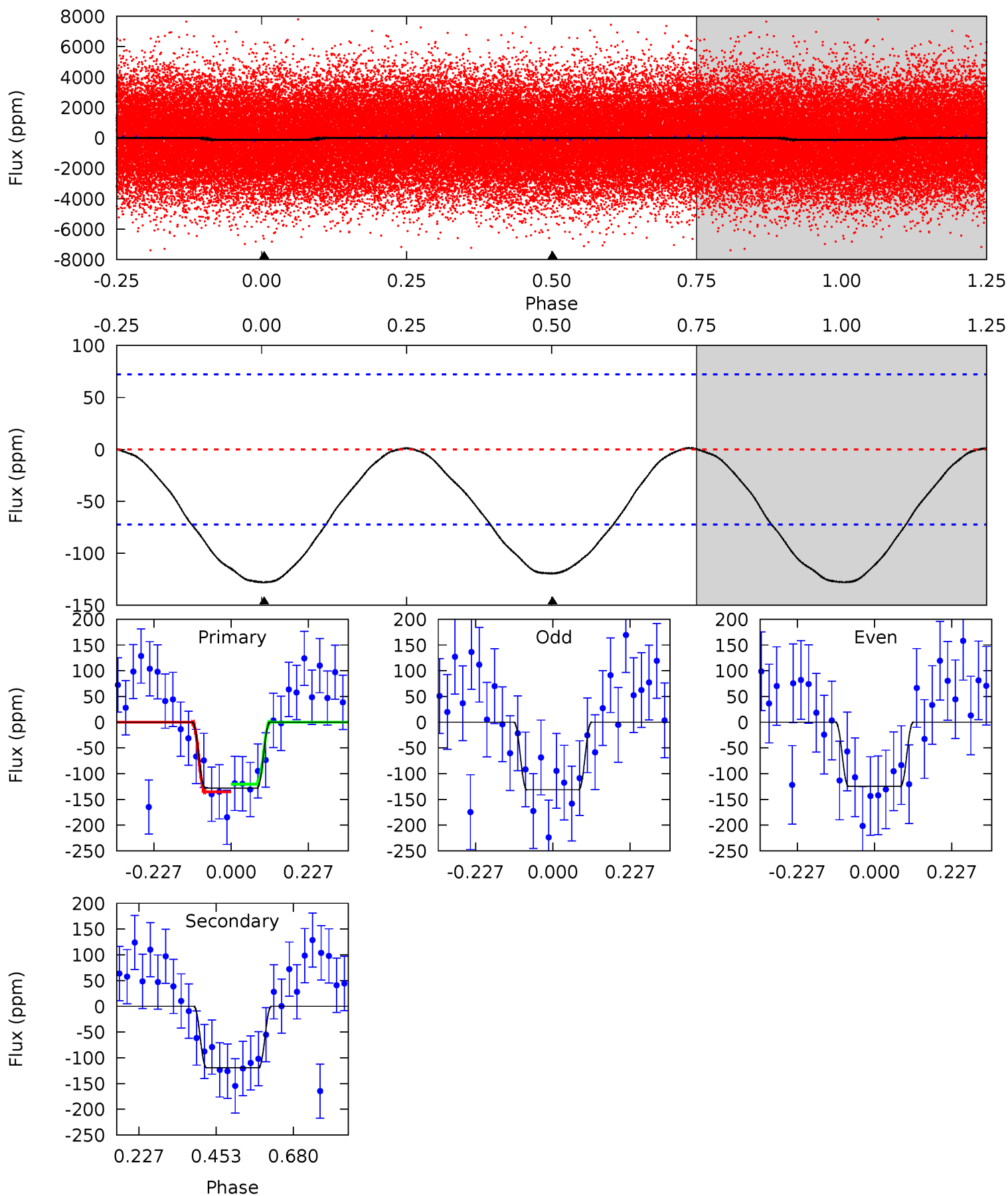
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	11.0	0	0	4.38	1.18	0.13	11.4	11.4	11.0	11.0	0.38	0.92	0.02	0.45



Alt Model-Shift Uniqueness Test

003323168-01, P = 1.363960 Days, E = 130.705225 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.77	7.26	0	0	4.39	1.21	0.11	7.77	7.77	7.26	7.26	0.20	1.10	0.01	0.45



Stellar Parameters For KIC 003323168

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7617^{+237}_{-316}	$3.796^{+0.376}_{-0.094}$	$-0.200^{+0.200}_{-0.350}$	$2.766^{+0.394}_{-1.181}$	$1.742^{+0.184}_{-0.368}$	$0.116^{+0.362}_{-0.035}$
	+3%/-4%	+10%/-2%	+100%/-175%	+14%/-43%	+11%/-21%	+312%/-30%
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 003323168-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-89 ± 8	$3.15^{+2.72}_{-2.08}$	4453^{+315}_{-459}	6603^{+6957}_{-1748}	$4.137^{+30.607}_{-2.959}$
Alt.	-119 ± 16	$3.75^{+2.69}_{-2.19}$	4483^{+292}_{-405}	6633^{+4726}_{-1634}	$3.987^{+17.876}_{-2.640}$

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

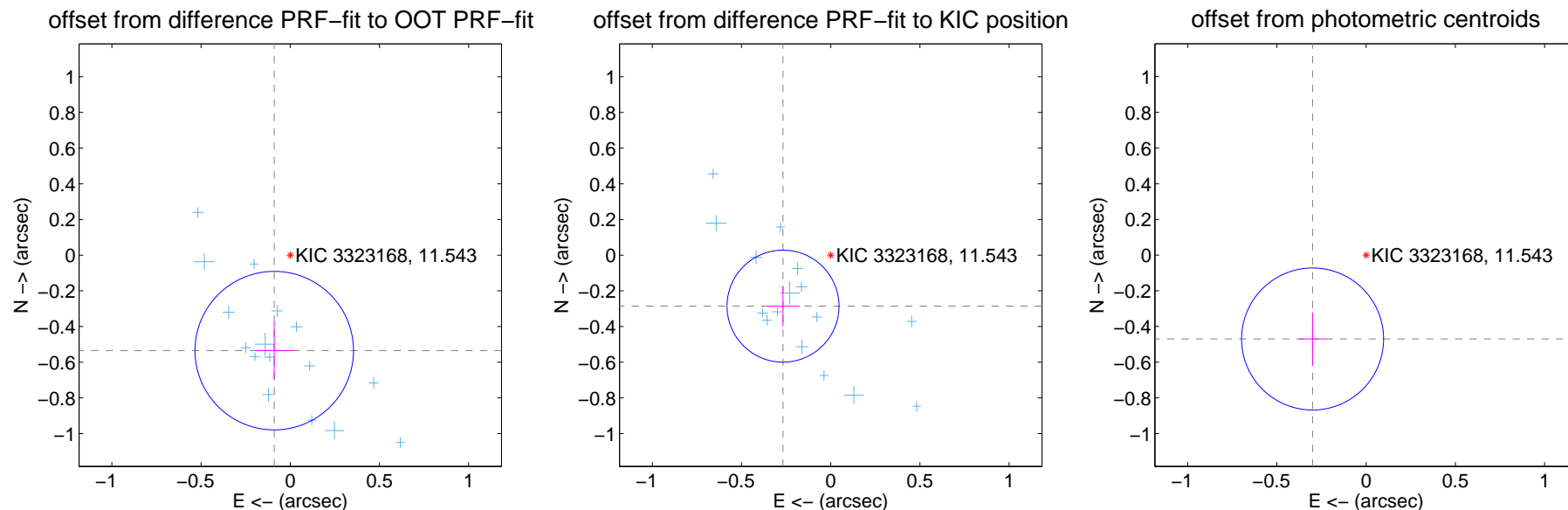
DV Centroid Data

Supplemental centroid analysis for 003323168-01. **Kepler magnitude: 11.54.** Transit SNR 13.13

There are 17 quarters with good PRF difference image offsets

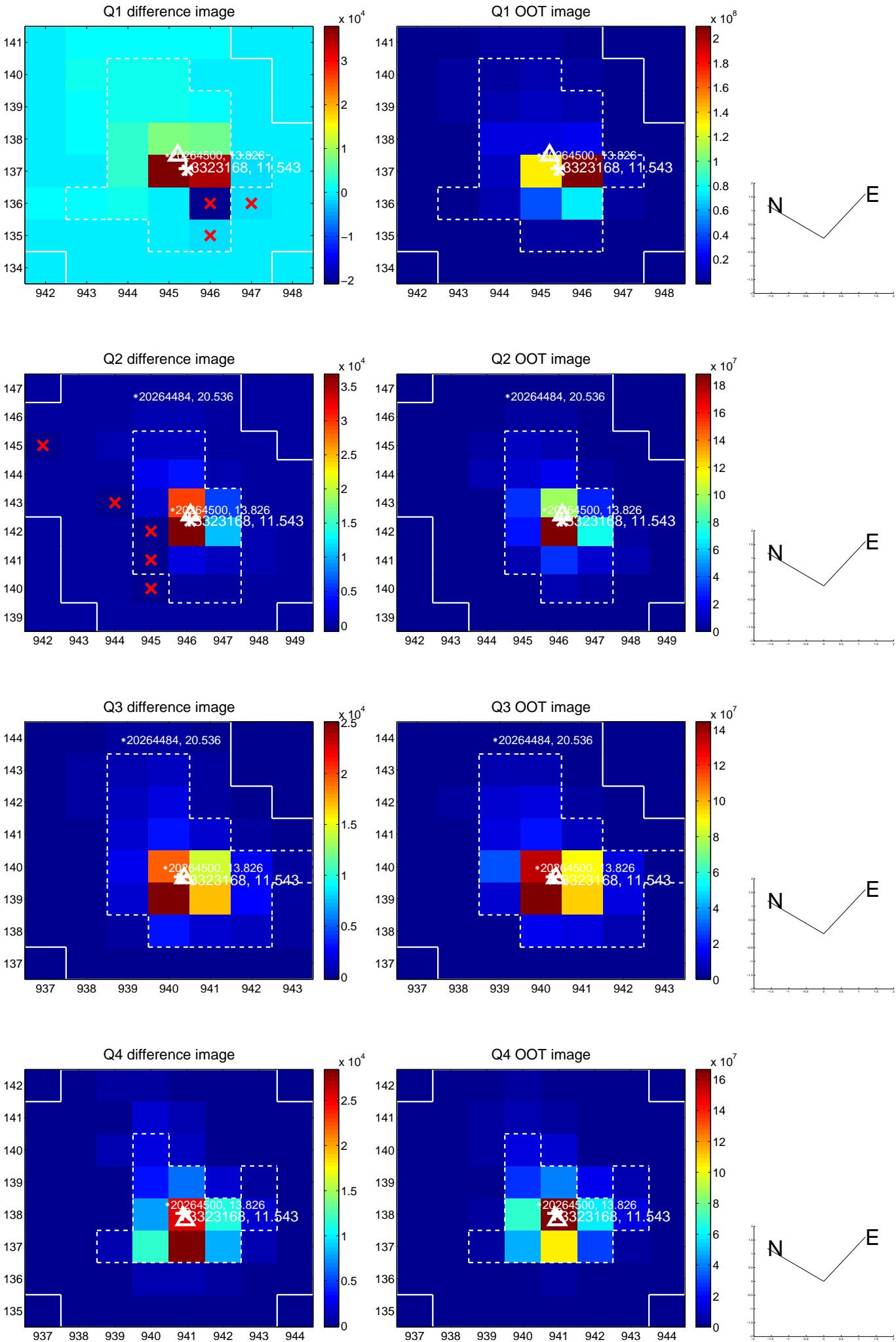
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.543 ± 0.148	3.66	0.090 ± 0.107	-0.535 ± 0.160
PRF-fit source offset from KIC position	0.391 ± 0.105	3.74	0.267 ± 0.093	-0.286 ± 0.114
photometric centroid source offset	0.56 ± 0.13	4.21	0.30 ± 0.08	-0.47 ± 0.15

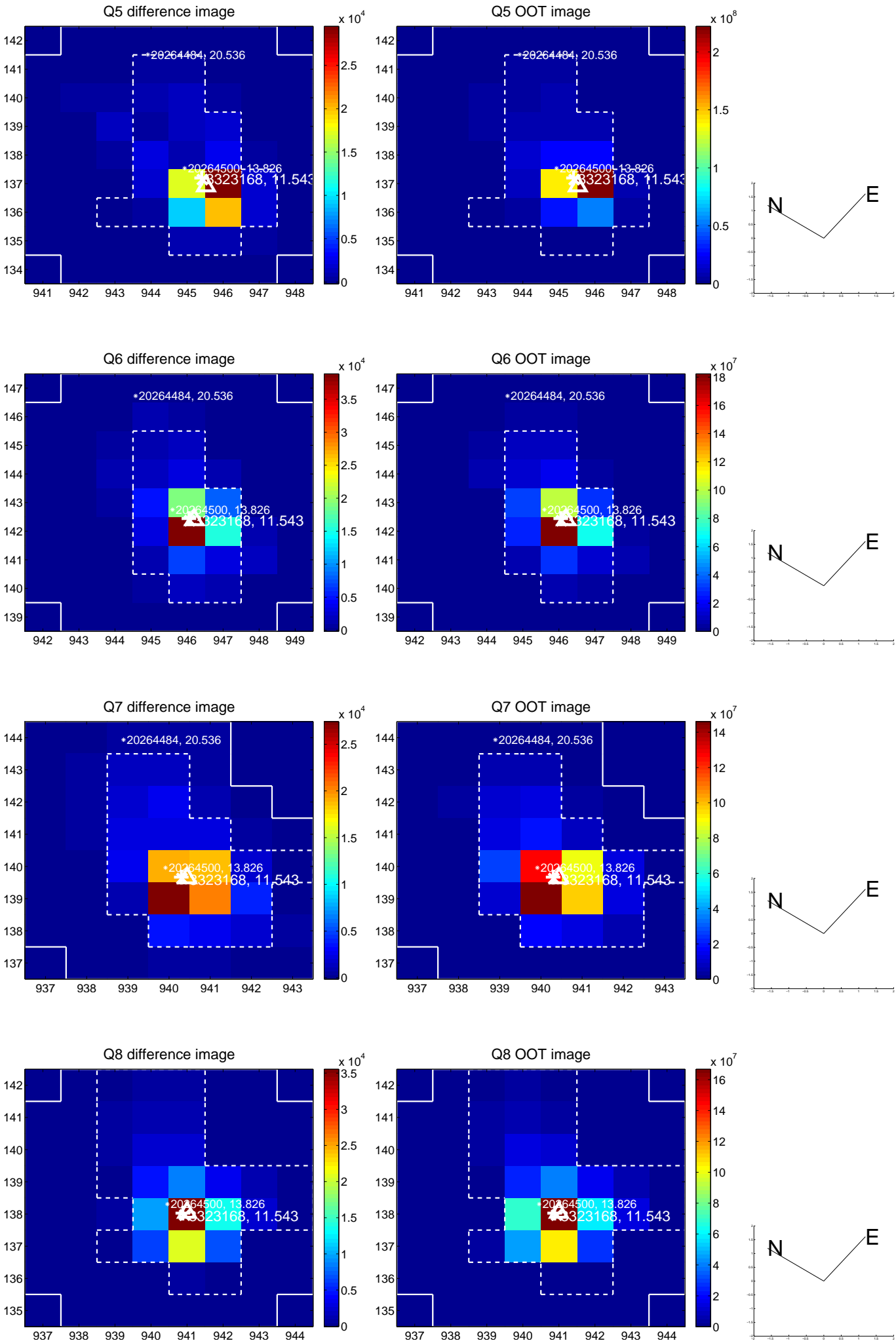


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

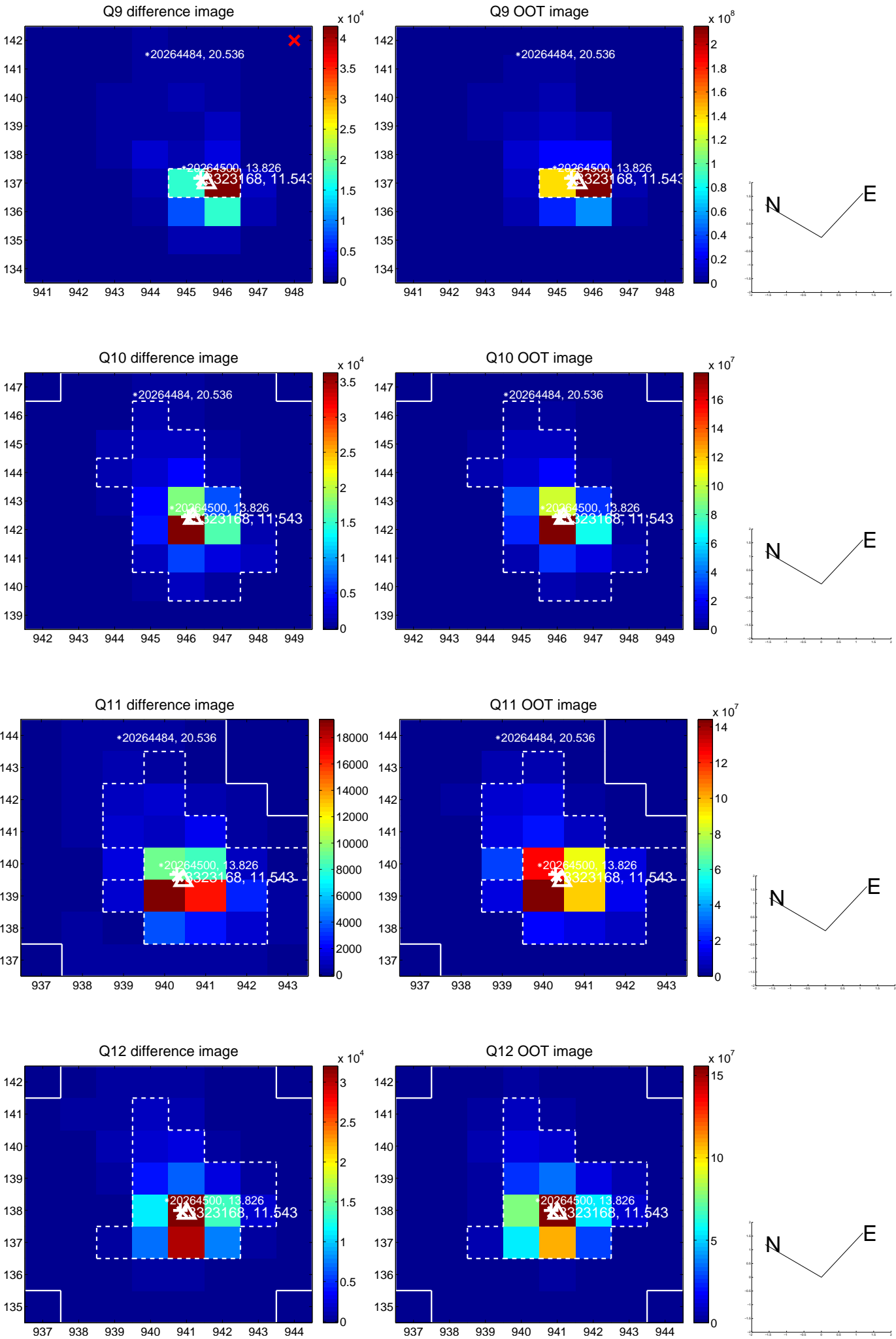
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



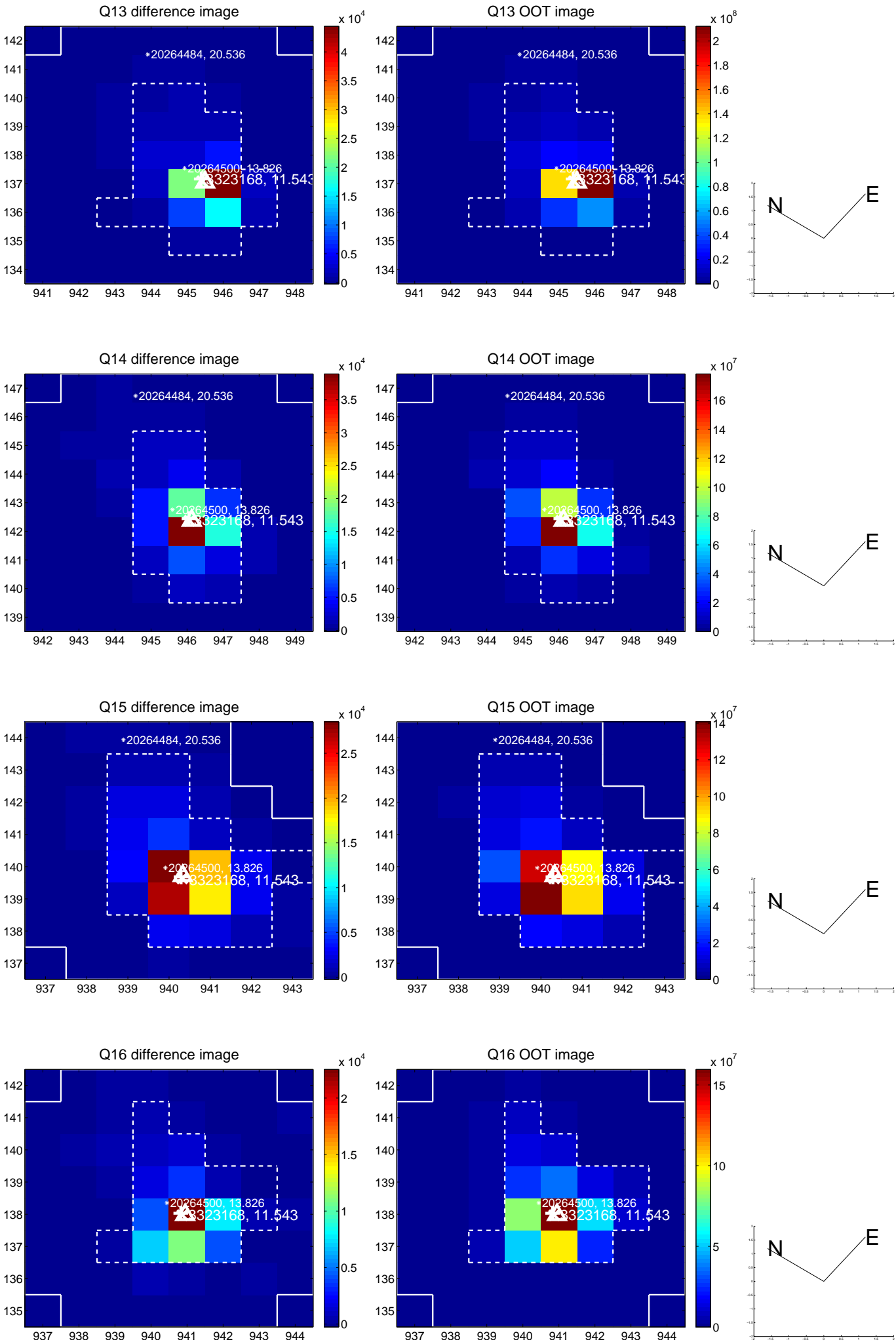
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



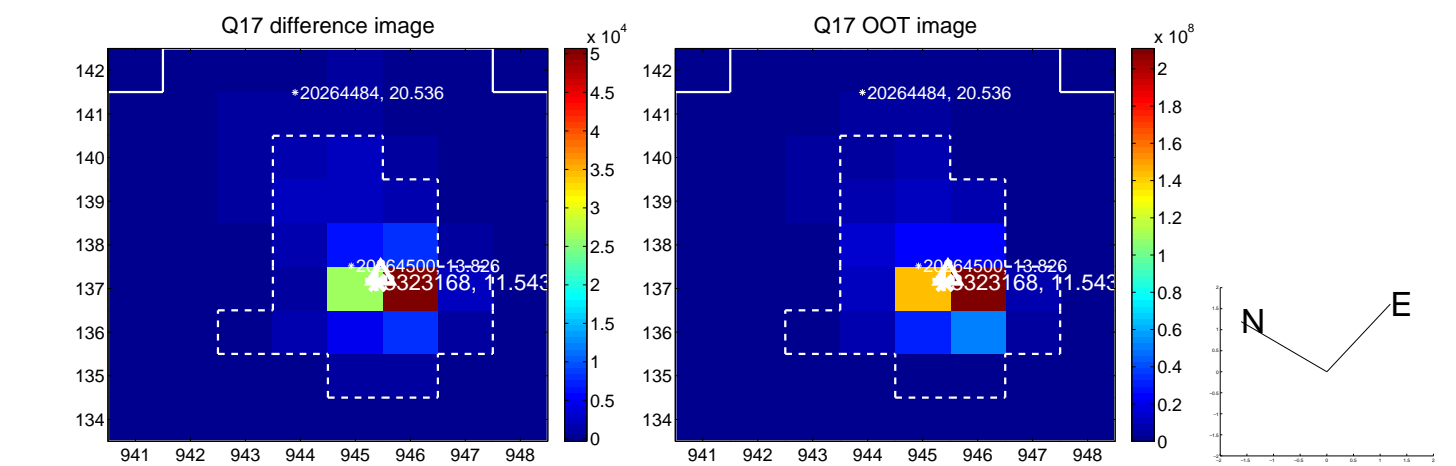
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



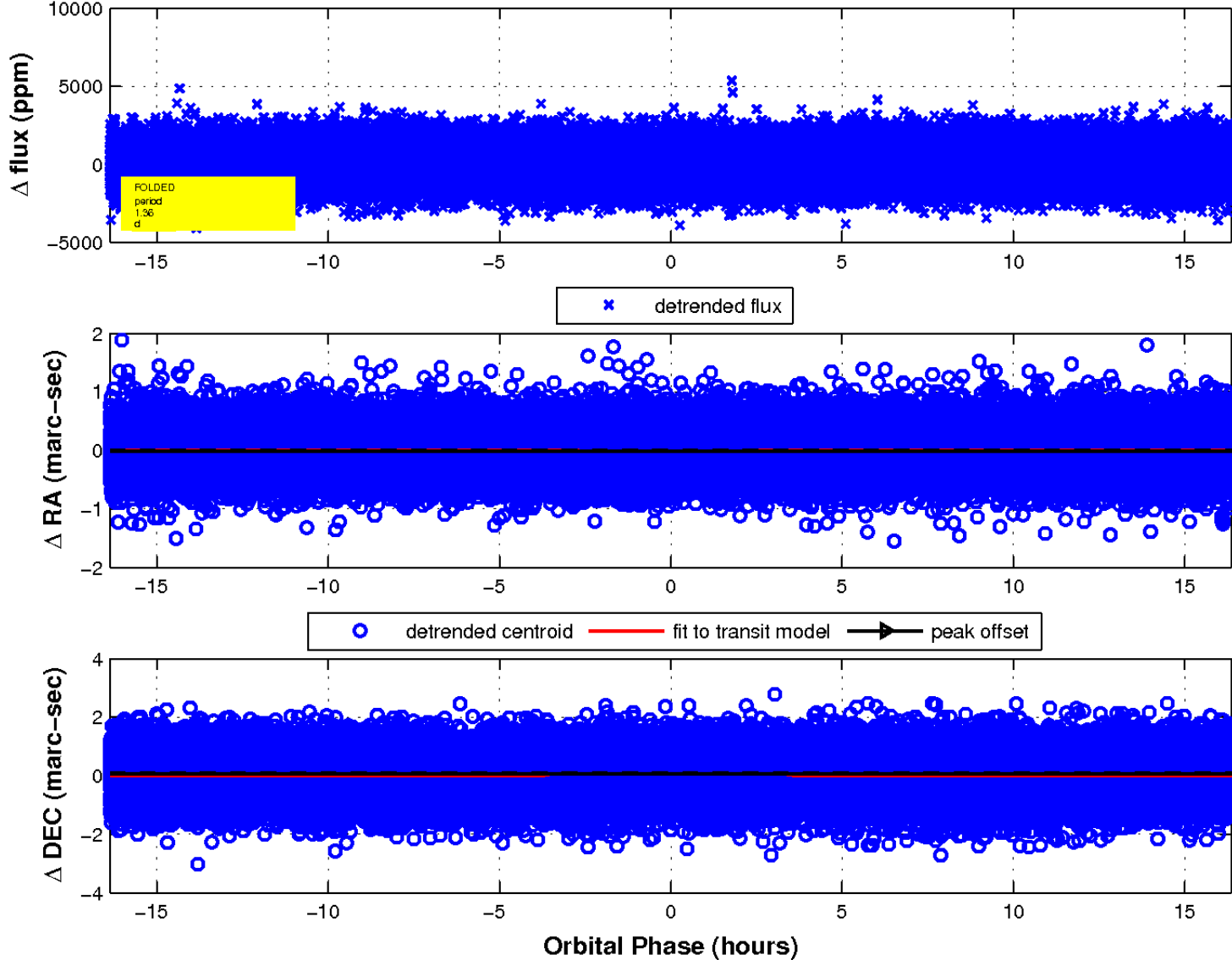
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

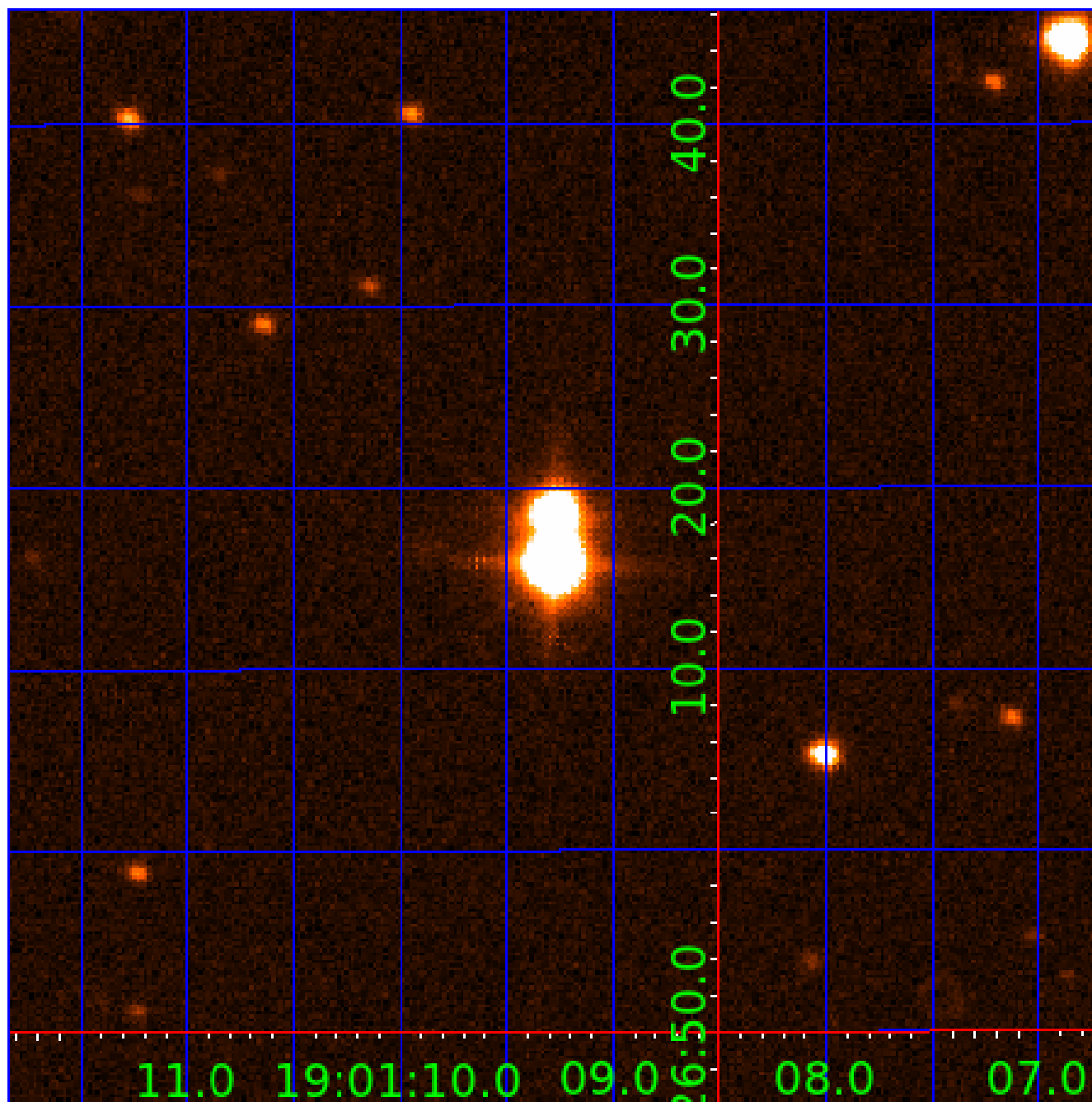


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003323168

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})
003323168-01	OBS	No	1.363926	132.082403	109.2	7.332	12.7	13.1	2.77	7617	2.99	27471.16
003323168-02	OBS	No	0.711953	131.856570	177.2	2.250	9.2	10.8	2.77	7617	4.33	65362.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003323168-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003323168-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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

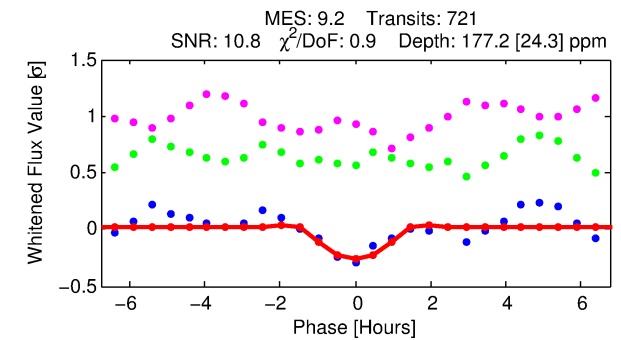
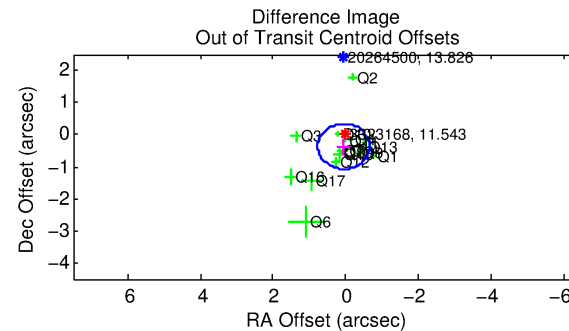
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 003323168-02

No Significant Match Found

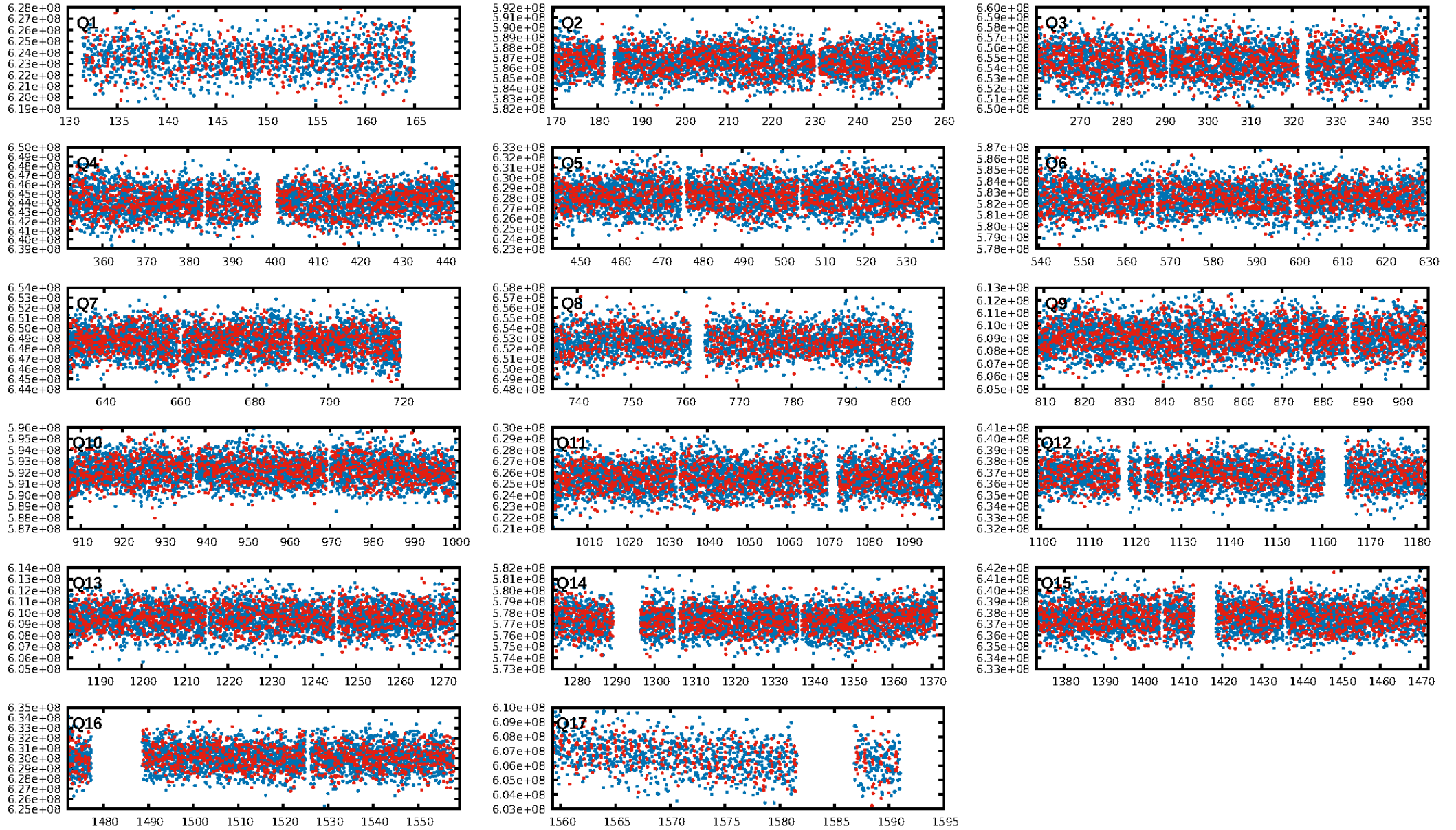
KIC: 3323168 Candidate: 2 of 2 Period: 0.712 d



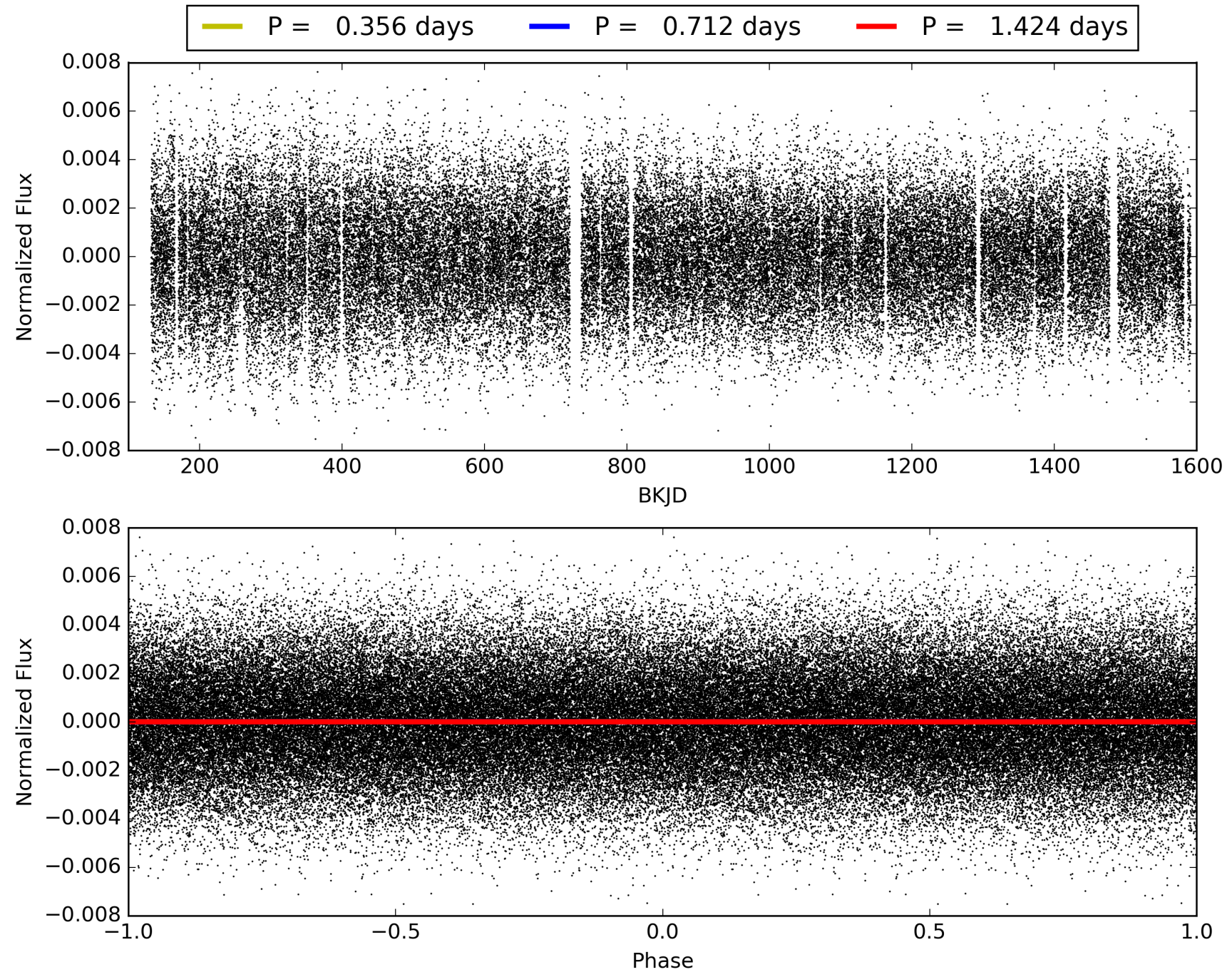
ShortPeriod-sig: N/A
LongPeriod-sig: 95.9% [2.04σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.40e-18
RollingBand-fgt: 1.00 [687/687]
GhostDiagnostic-chr: -0.0843

Centroid-sig: 32.0%
Centroid-so: 0.249 arcsec [3.31σ]
OotOffset-rm: 0.373 arcsec [1.58σ]
KicOffset-rm: 0.223 arcsec [0.95σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003323168-02, PDC Light Curves

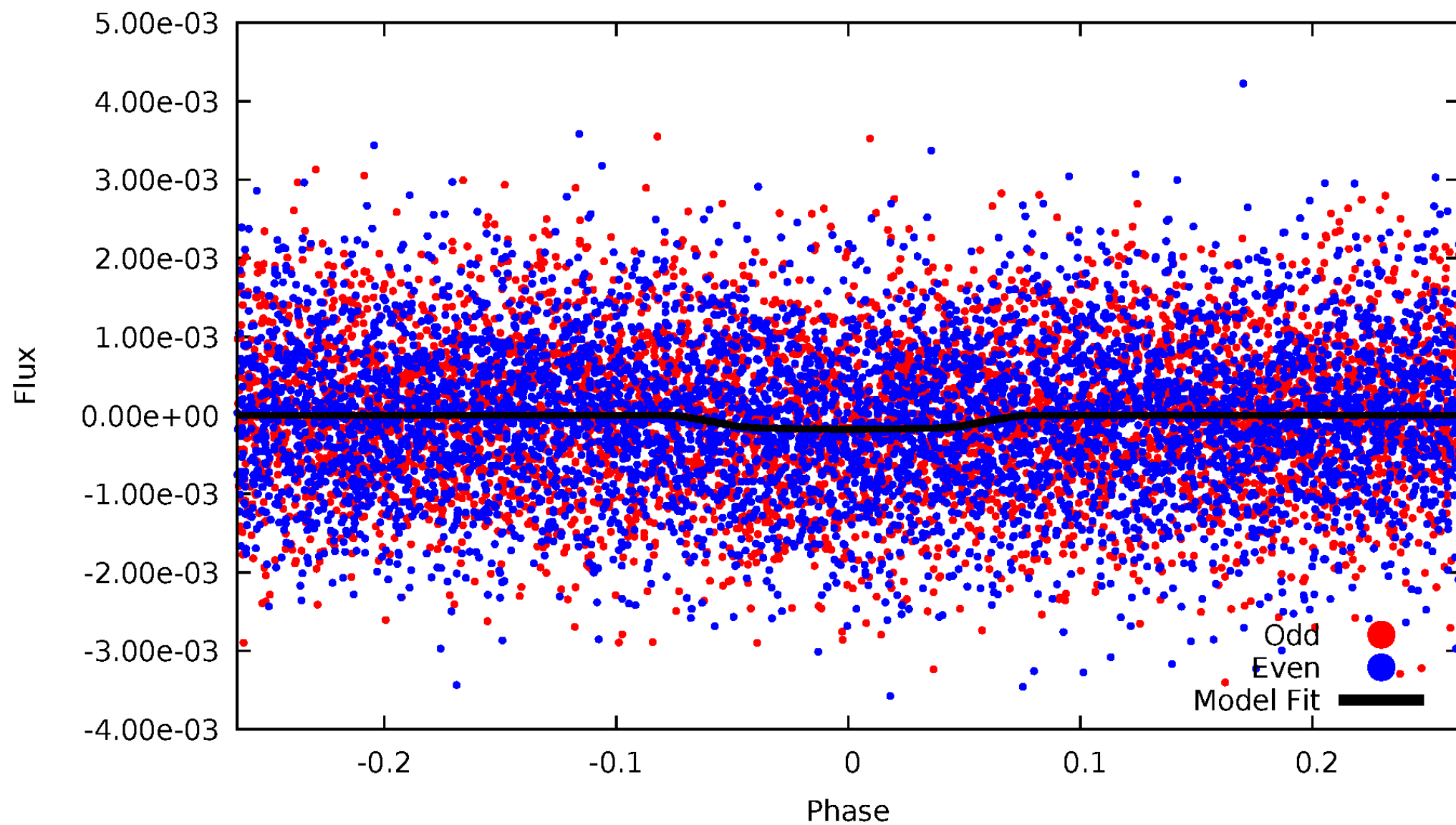


TCE 003323168-02



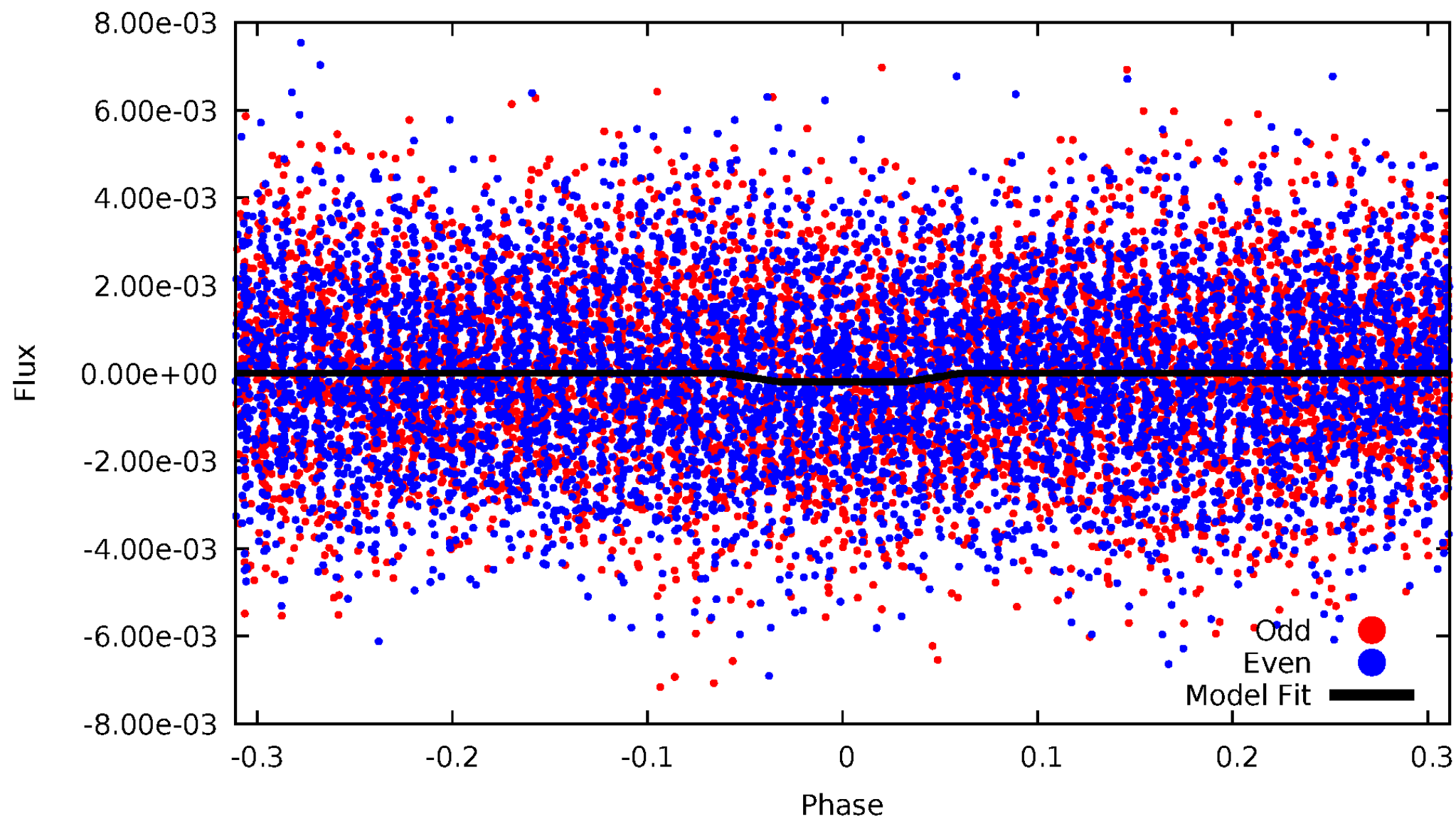
DV Odd/Even

TCE 003323168-02



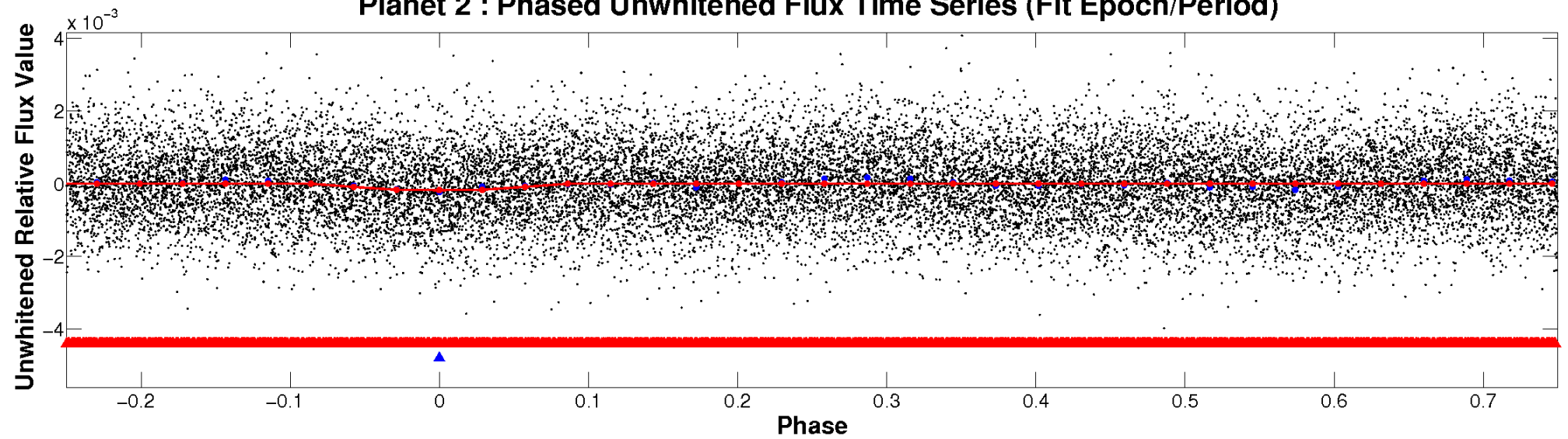
ALT Odd/Even

TCE 003323168-02

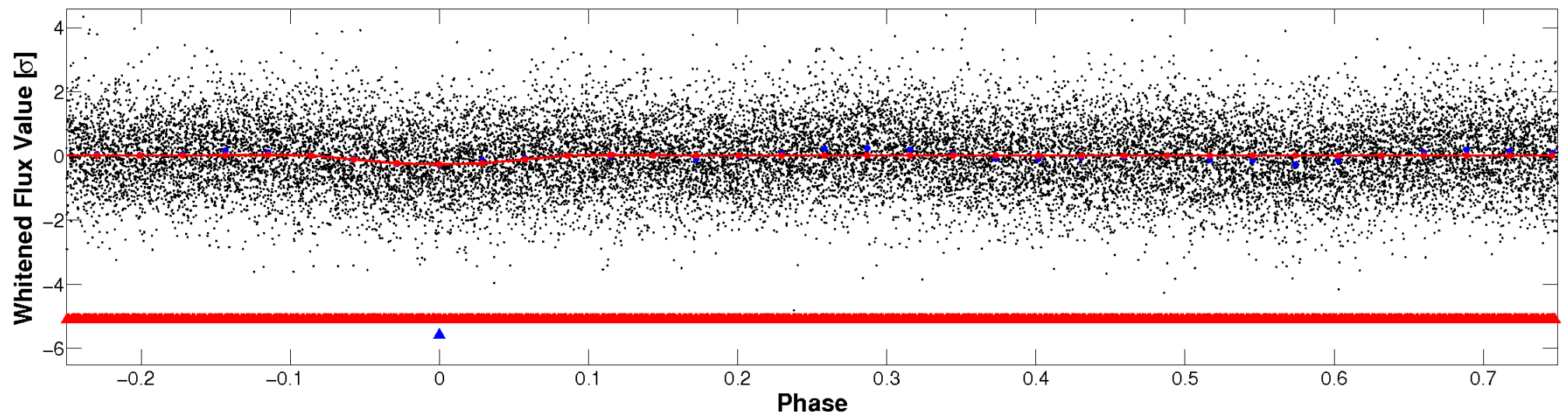


Non-Whitened Vs. Whitened Light Curve

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

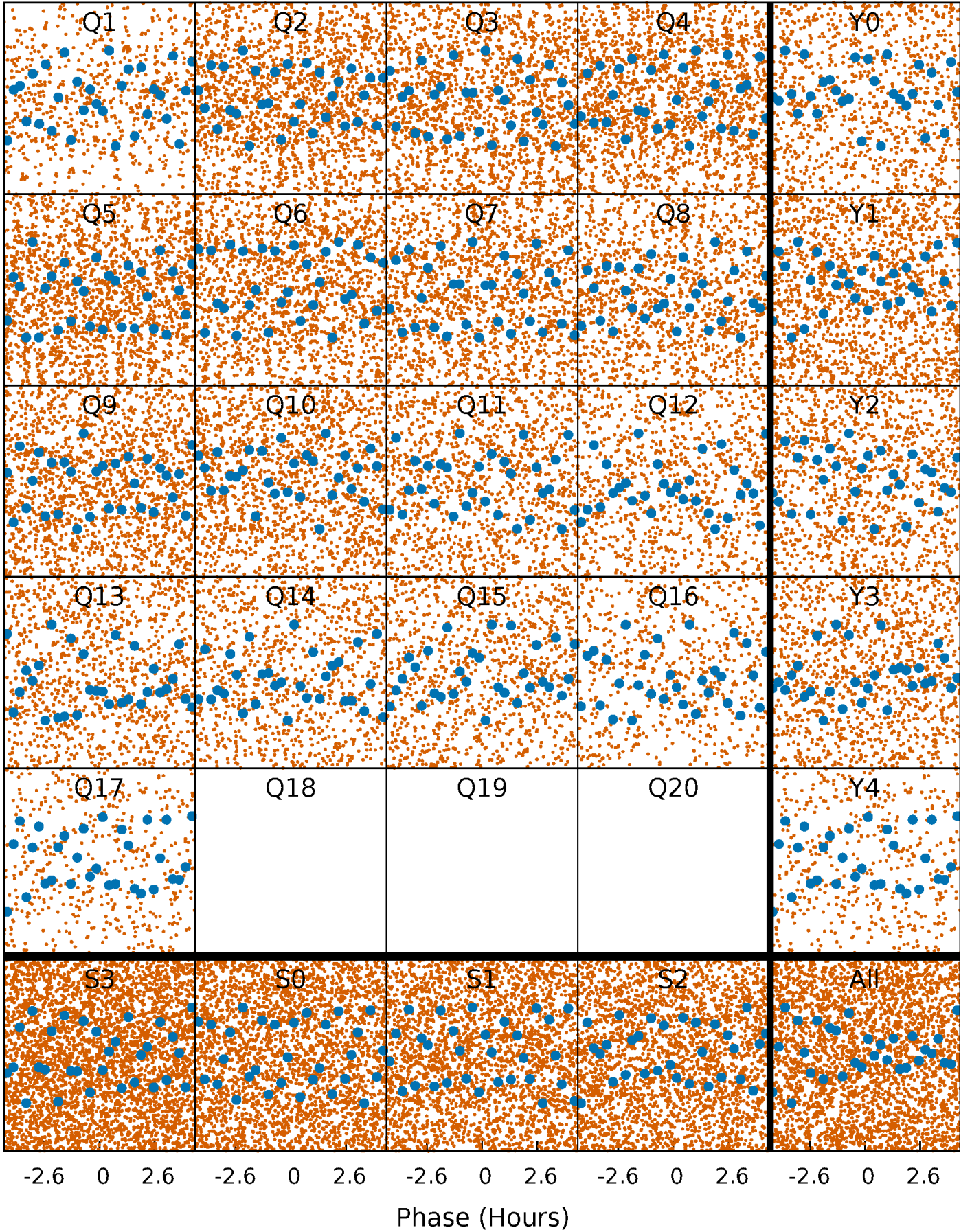


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



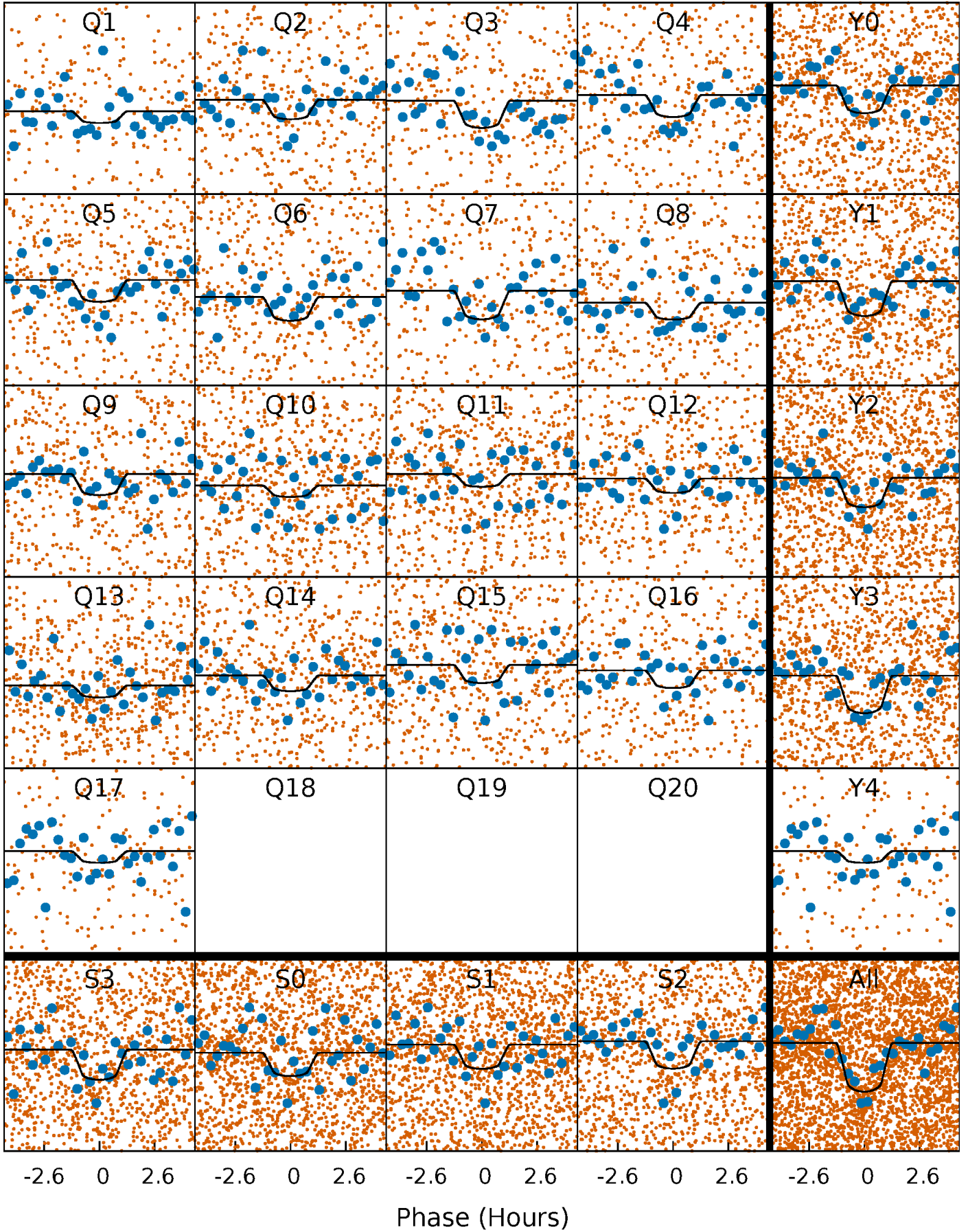
PDC Quarter-Phased Transit Curves

TCE 003323168-02 P= 0.711953 Days $T_0=131.856570$ (BKJD)



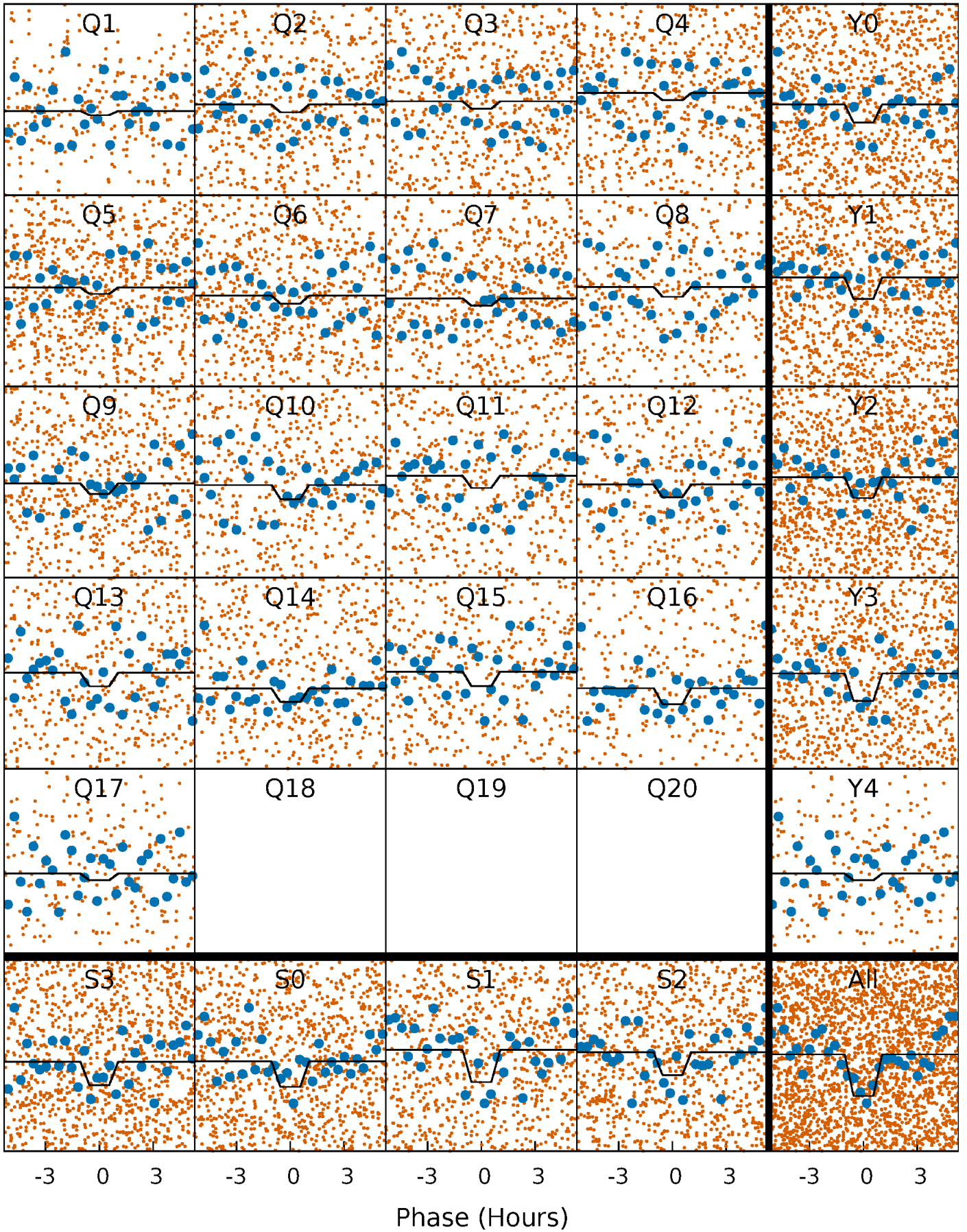
DV Quarter-Phased Transit Curves

TCE 003323168-02 P= 0.711953 Days $T_0=131.856570$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

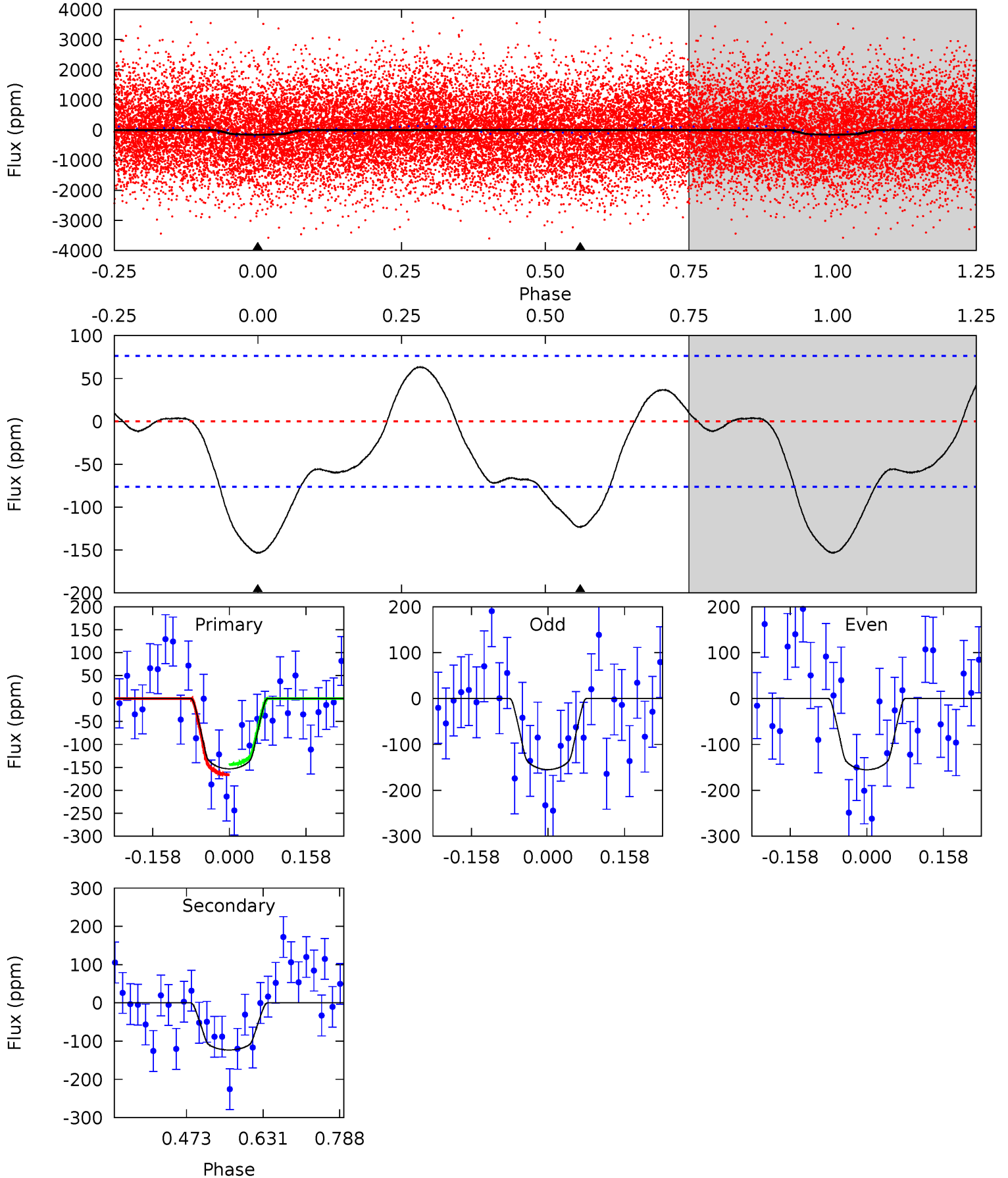
TCE 003323168-02 P= 0.711946 Days $T_0=131.861173$ (BKJD)



DV Model-Shift Uniqueness Test

003323168-02, P = 0.711953 Days, E = 131.144617 Days

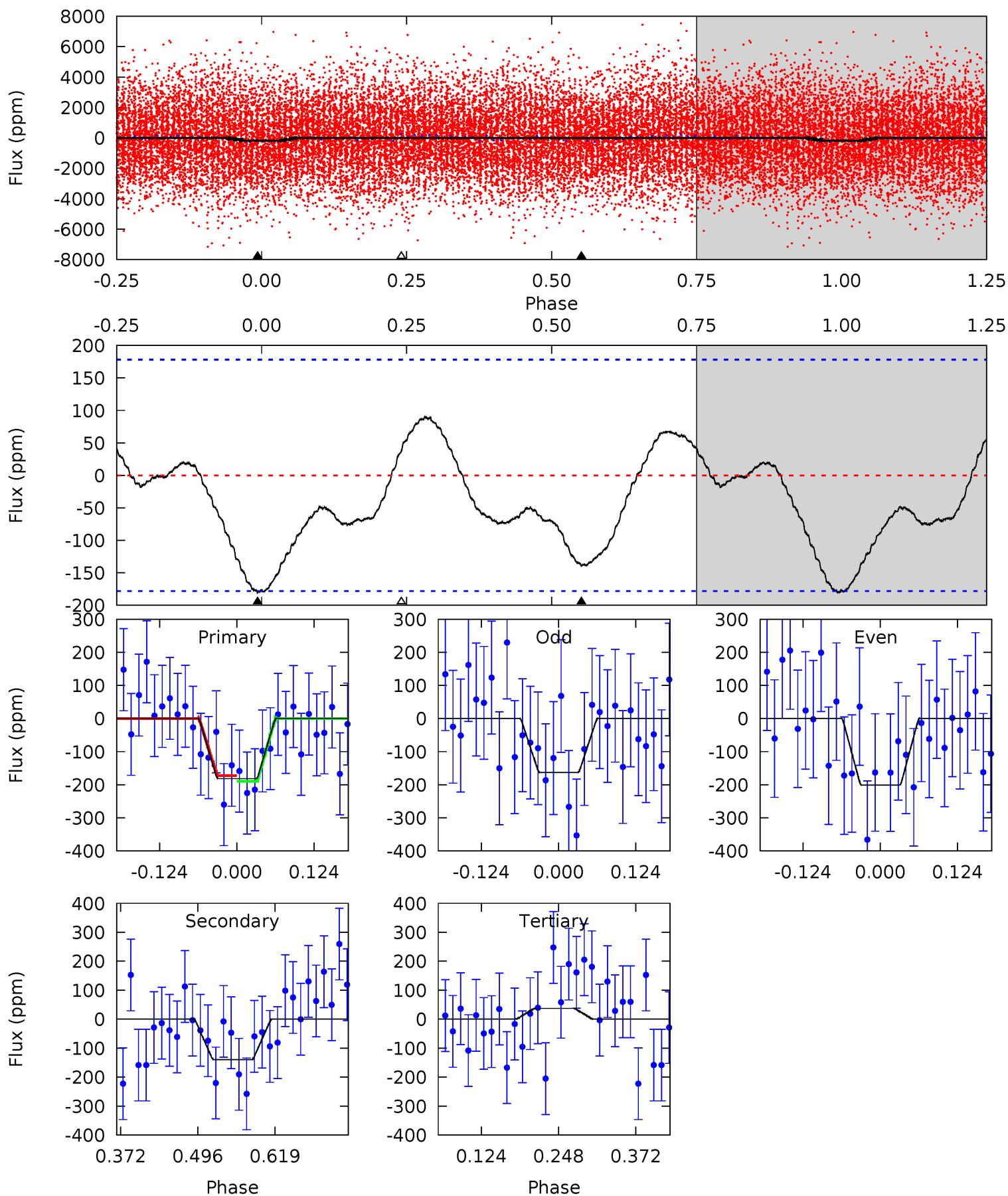
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.97	7.21	0	0	4.47	1.41	2.13	8.97	8.97	7.21	7.21	0.01	0.79	0.29	0.65



Alt Model-Shift Uniqueness Test

003323168-02, P = 0.711946 Days, E = 131.149227 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.61	3.54	-0.95	0	4.52	1.54	1.35	5.55	4.61	4.49	3.54	0.48	0.83	0.33	0.23



Stellar Parameters For KIC 003323168

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7617^{+237}_{-316}	$3.796^{+0.376}_{-0.094}$	$-0.200^{+0.200}_{-0.350}$	$2.766^{+0.394}_{-1.181}$	$1.742^{+0.184}_{-0.368}$	$0.116^{+0.362}_{-0.035}$
	+3%/-4%	+10%/-2%	+100%/-175%	+14%/-43%	+11%/-21%	+312%/-30%
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 003323168-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-123 ± 17	$4.43^{+3.40}_{-2.62}$	5578^{+346}_{-638}	5760^{+4750}_{-1906}	$1.230^{+5.771}_{-0.827}$
Alt.	-140 ± 39	$4.20^{+3.29}_{-2.42}$	5524^{+400}_{-578}	6038^{+5206}_{-2118}	$1.402^{+7.389}_{-0.973}$

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

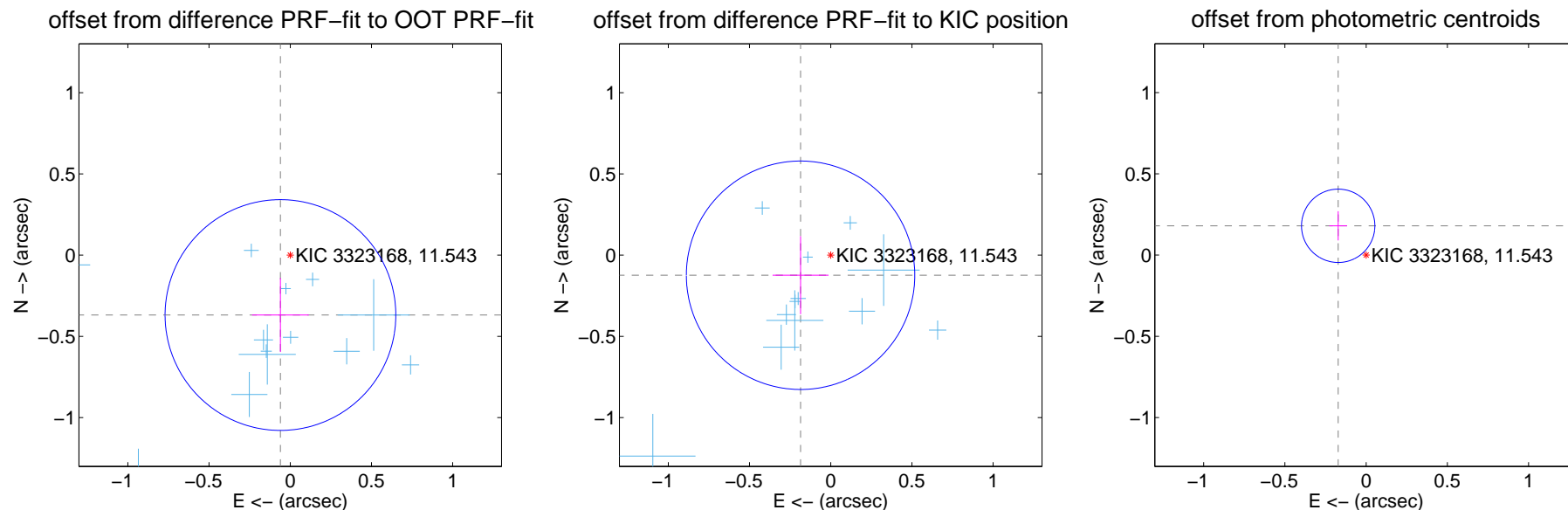
DV Centroid Data

Supplemental centroid analysis for 003323168-02. **Kepler magnitude: 11.54.** Transit SNR 10.77

There are 15 quarters with good PRF difference image offsets

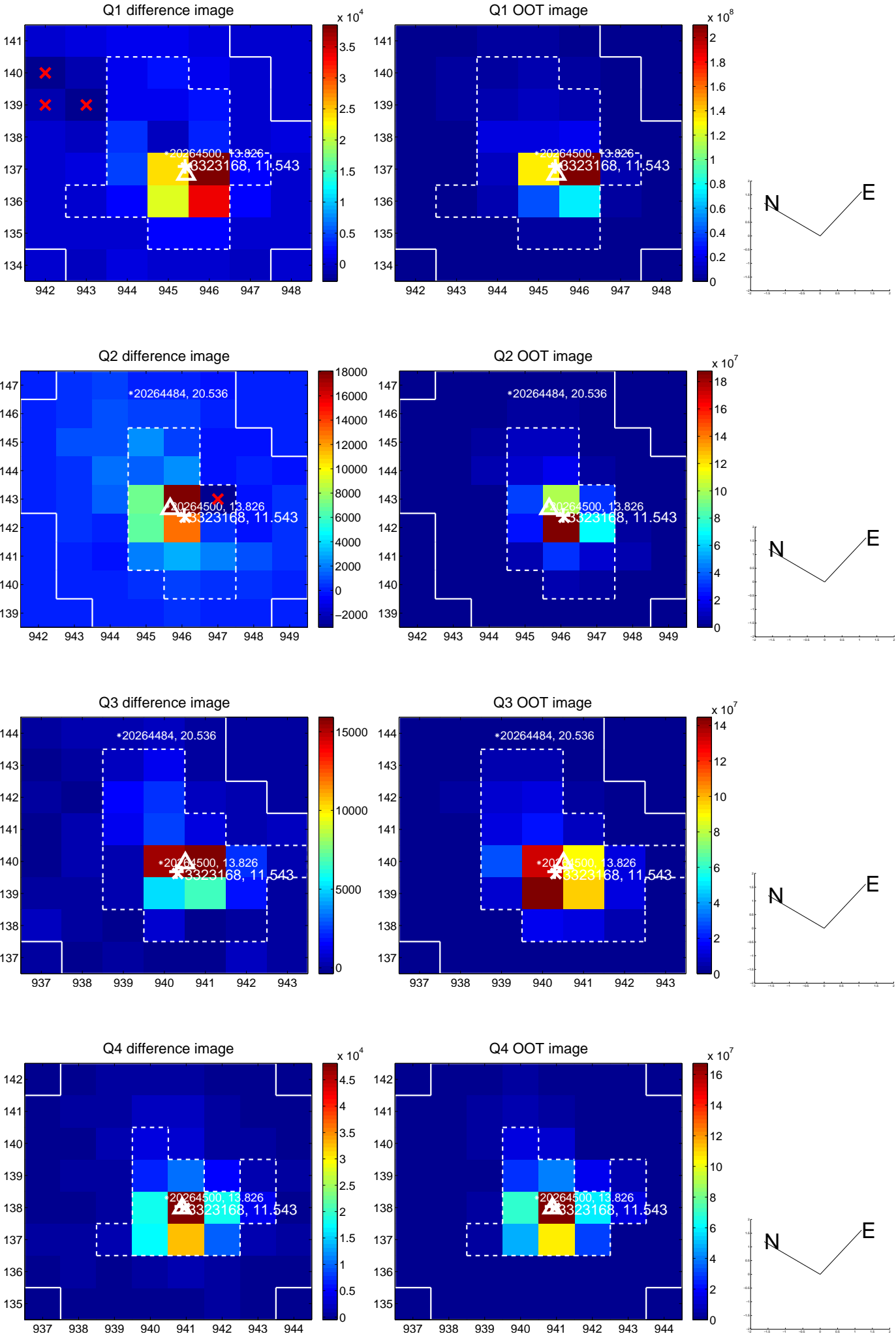
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.373 ± 0.237	1.58	0.061 ± 0.175	-0.369 ± 0.228
PRF-fit source offset from KIC position	0.223 ± 0.234	0.95	0.186 ± 0.172	-0.124 ± 0.240
photometric centroid source offset	0.25 ± 0.08	3.31	0.17 ± 0.05	0.18 ± 0.09

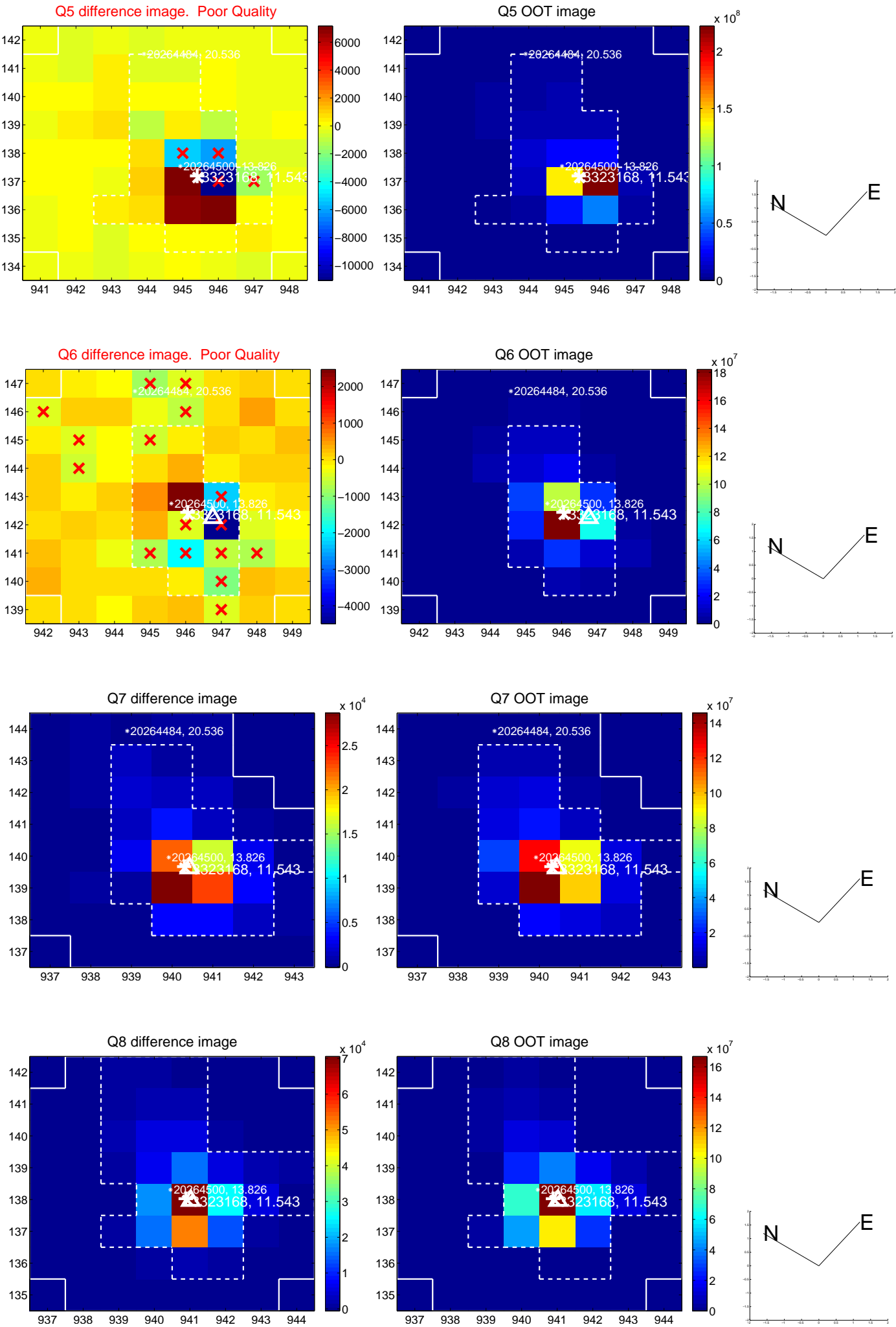


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

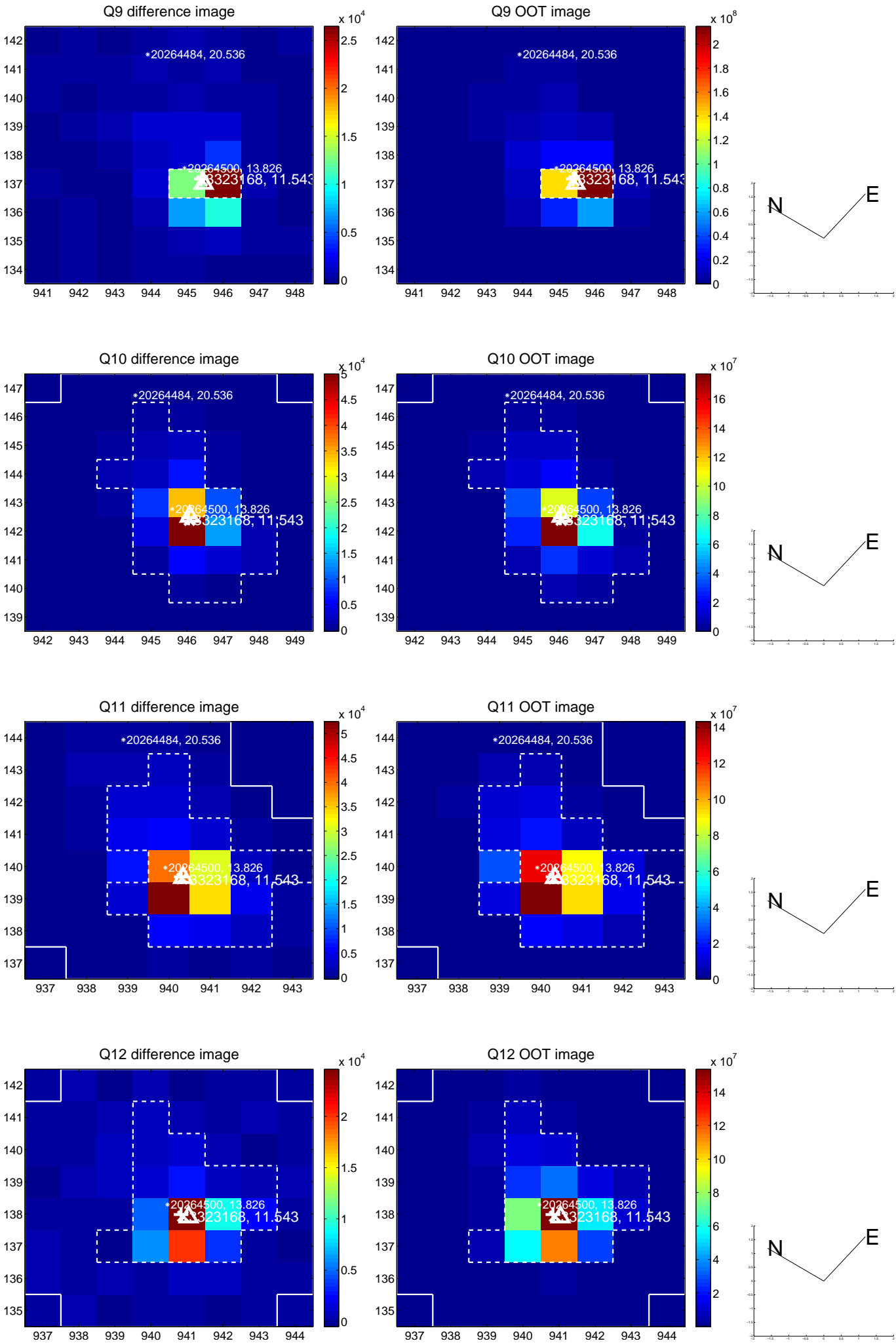
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



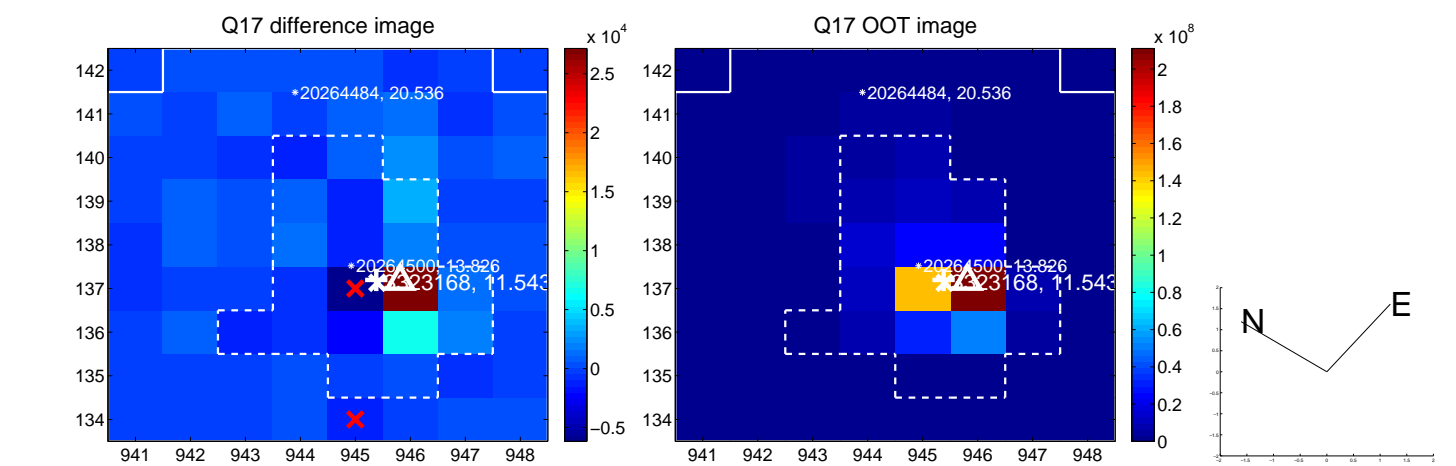
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



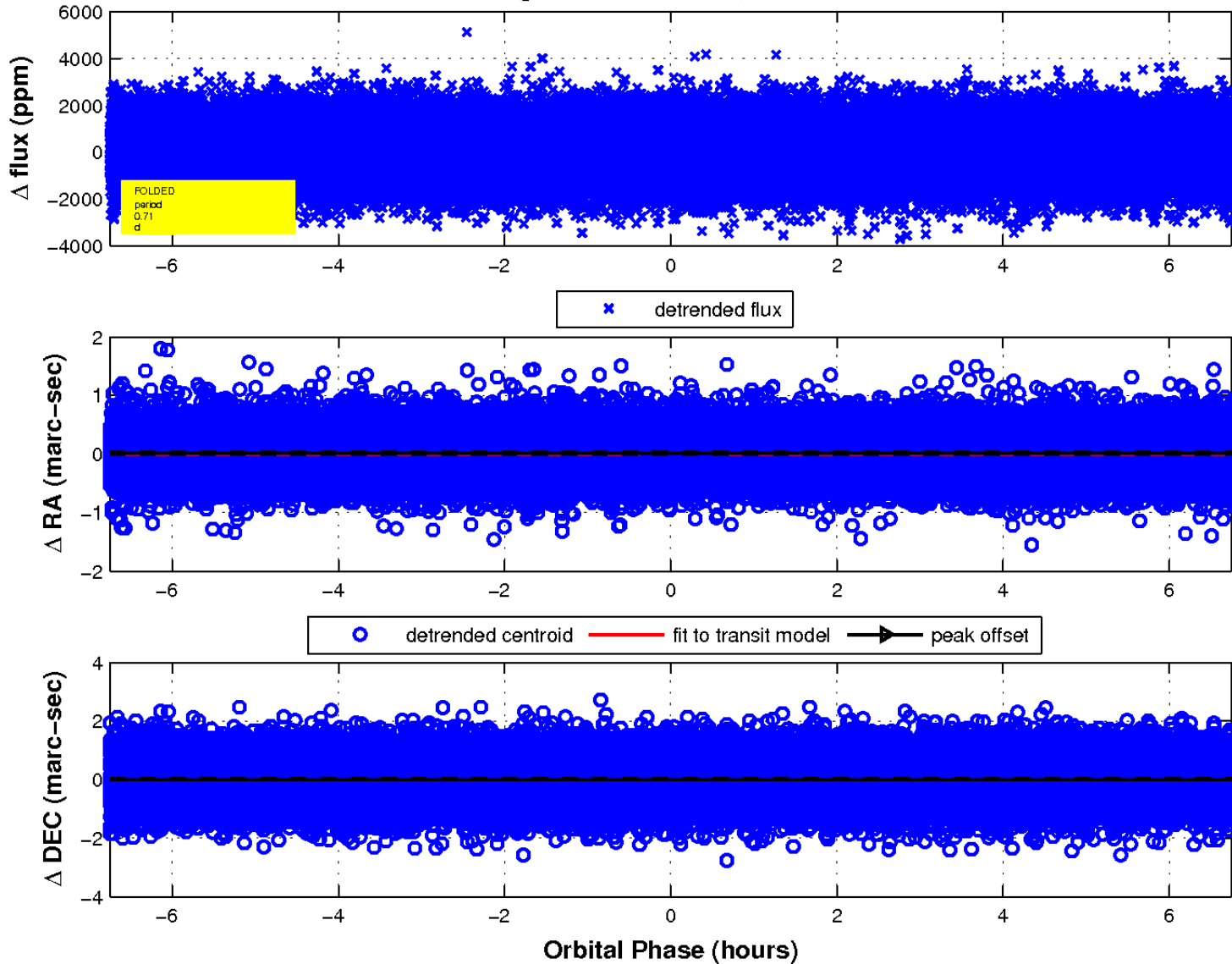
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

