

KIC 005819178

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})
005819178-01	OBS	No	0.991129	132.244075	46.9	1.592	10.7	8.3	2.22	7282	1.76	23519.97
005819178-02	OBS	No	0.991154	132.447438	40.0	2.069	8.9	7.9	2.22	7282	1.63	23519.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005819178-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005819178-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

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

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

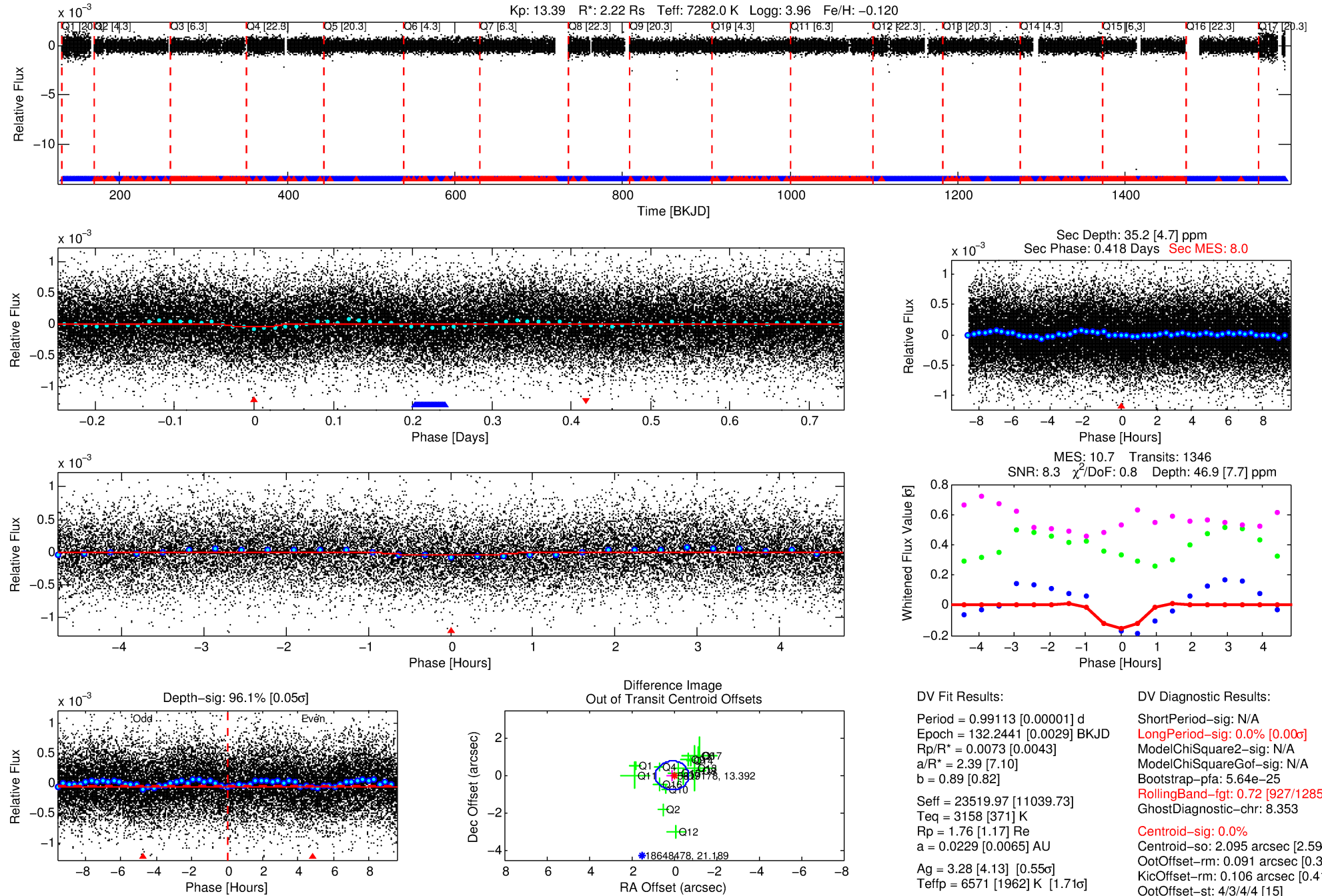
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005819178-01

No Significant Match Found

DV One-Page Summary

KIC: 5819178 Candidate: 1 of 2 Period: 0.991 d



DV Fit Results:

Period = 0.99113 [0.00001] d
Epoch = 132.2441 [0.0029] BKJD
Rp/R* = 0.0073 [0.0043]
a/R* = 2.39 [7.10]
b = 0.89 [0.82]
Seff = 23519.97 [11039.73]
Teq = 3158 [371] K
Rp = 1.76 [1.17] Re
a = 0.0229 [0.0065] AU
Ag = 3.28 [4.13] [0.55 σ]
Teffp = 6571 [1962] K [1.71 σ]

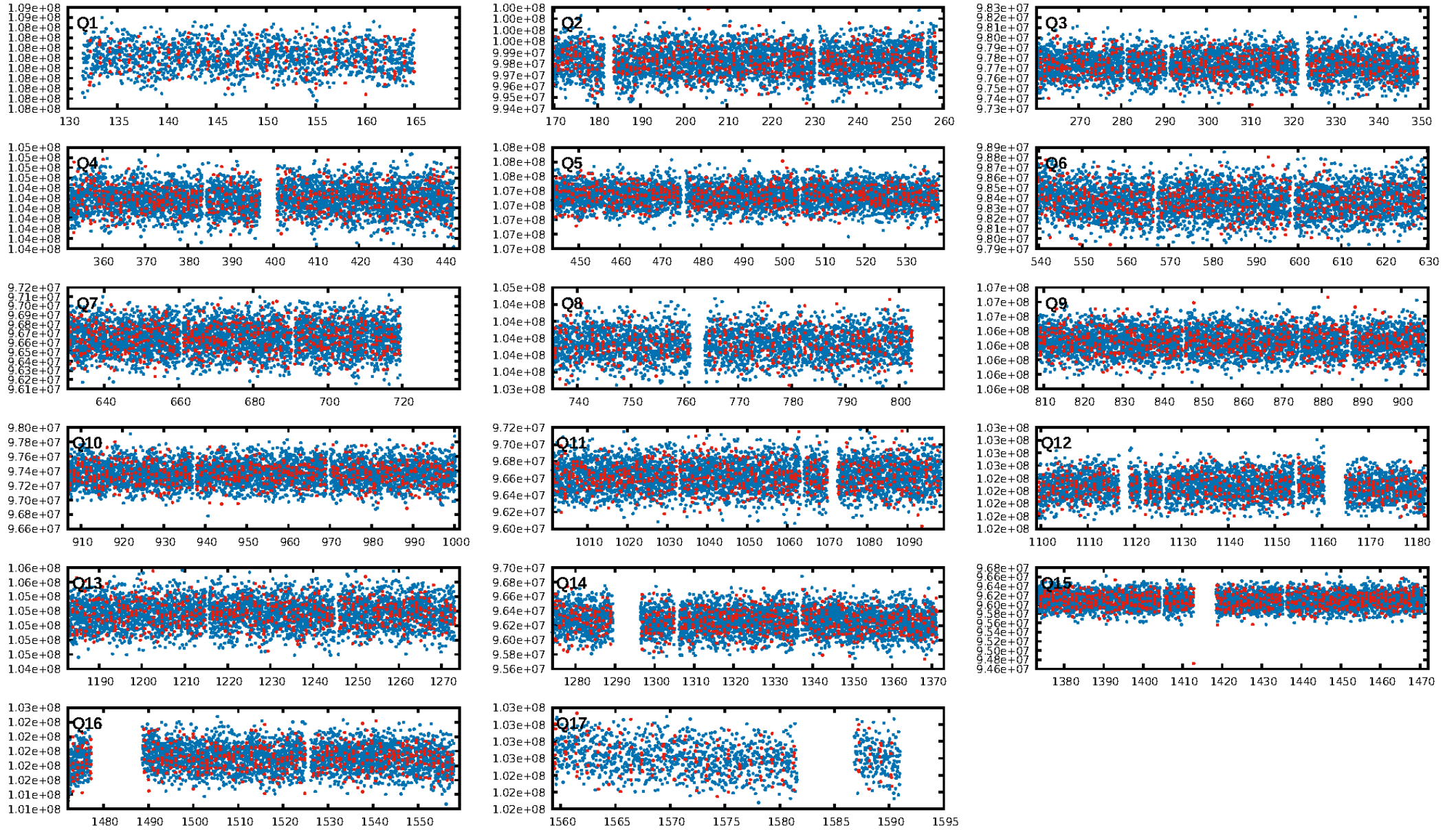
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.64e-25
RollingBand-fgt: 0.72 [927/1285]
GhostDiagnostic-chr: 8.353
Centroid-sig: 0.0%
Centroid-so: 2.095 arcsec [2.59 σ]
OotOffset-rm: 0.091 arcsec [0.35 σ]
KicOffset-rm: 0.106 arcsec [0.41 σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 0.00 [0/17]

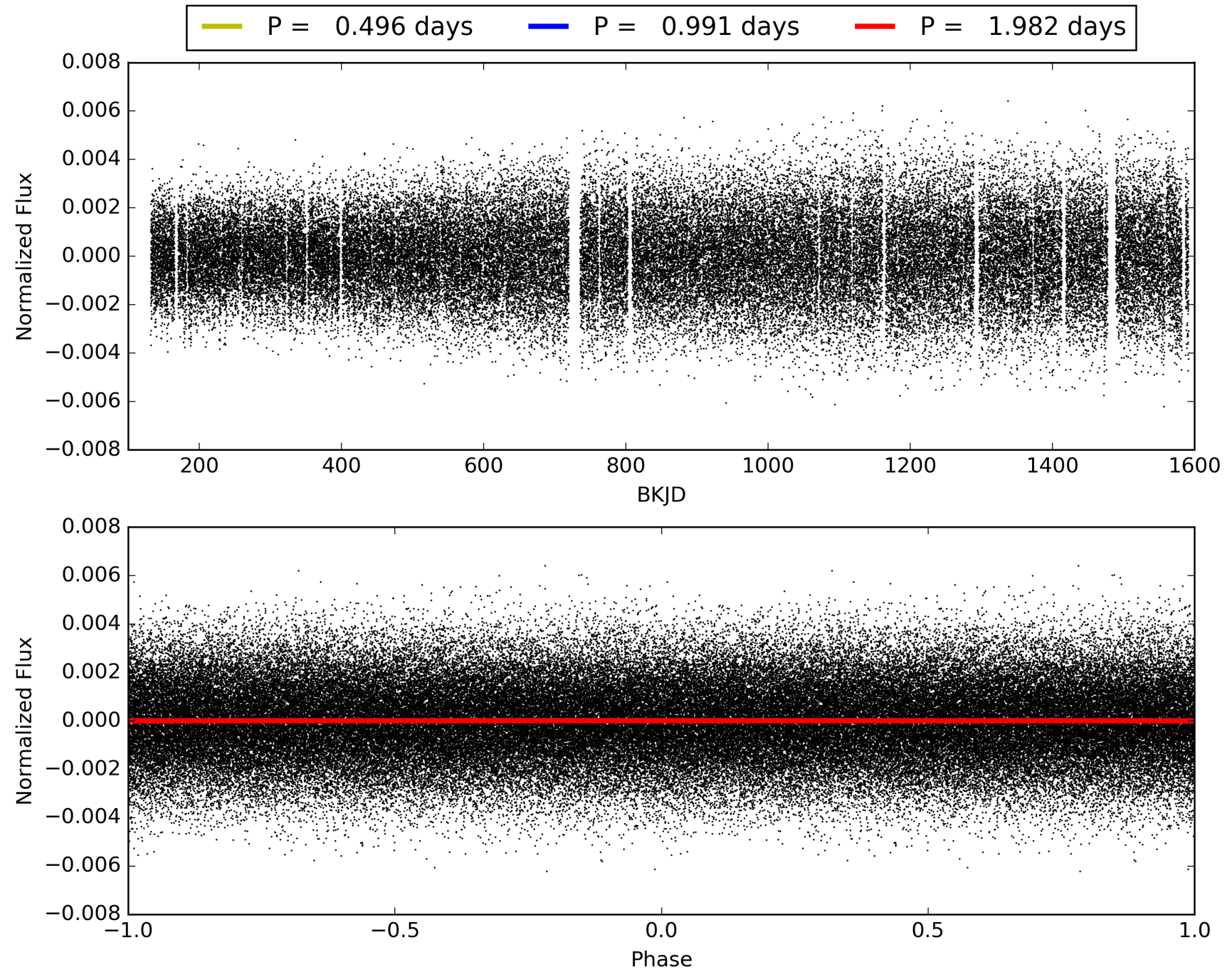
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:14:15 Z

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

TCE 005819178-01, PDC Light Curves

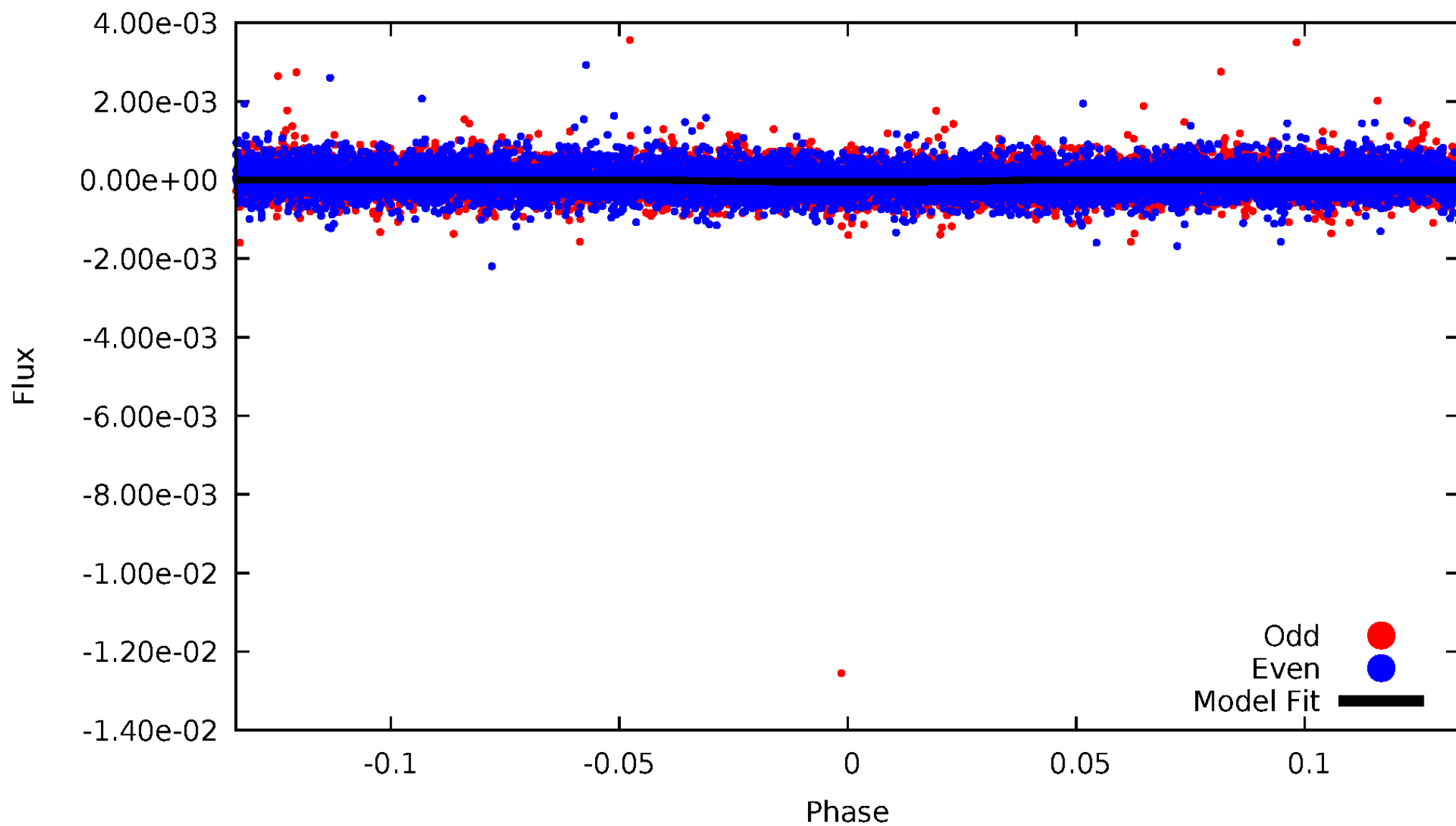


TCE 005819178-01



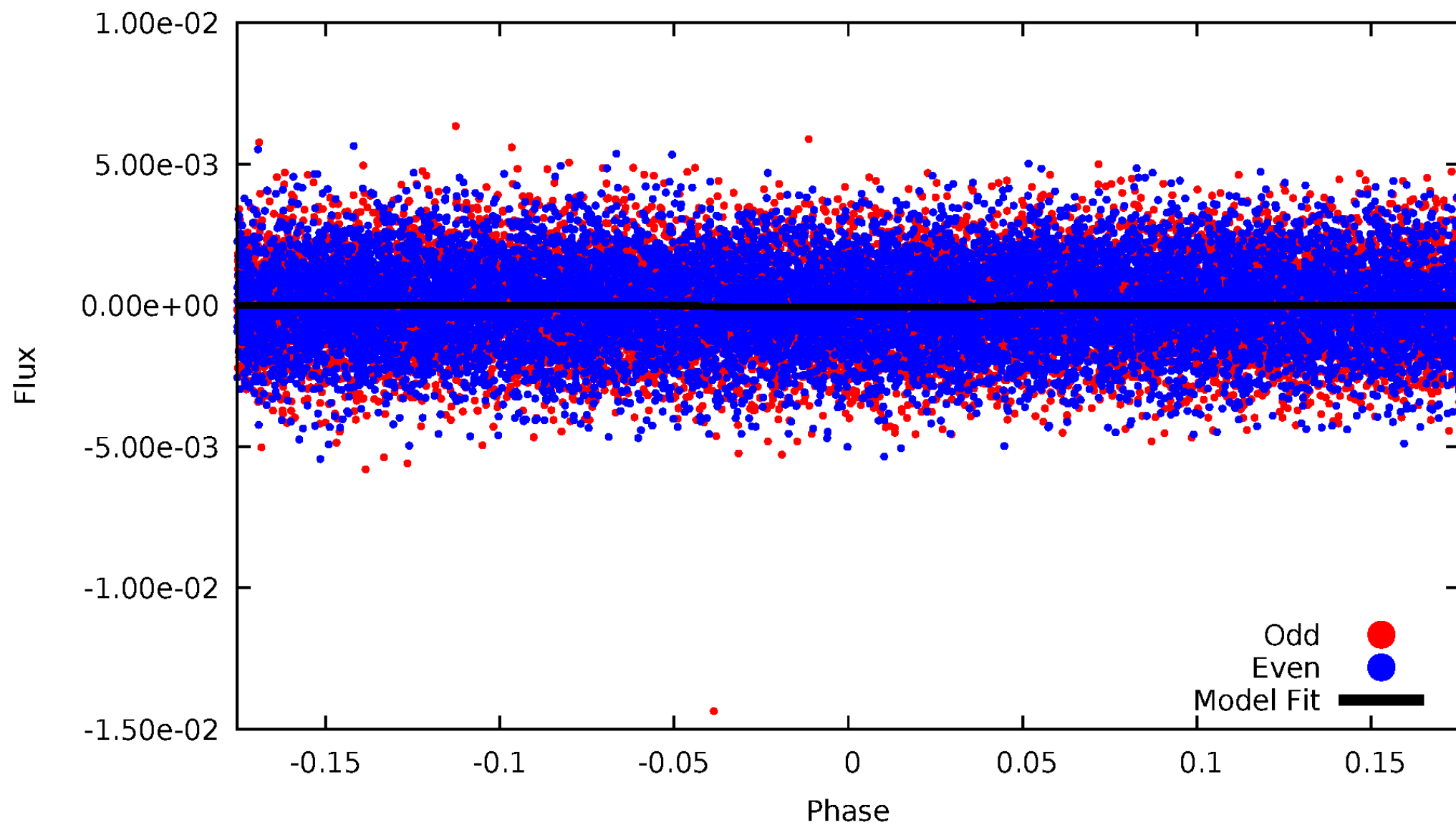
DV Odd/Even

TCE 005819178-01



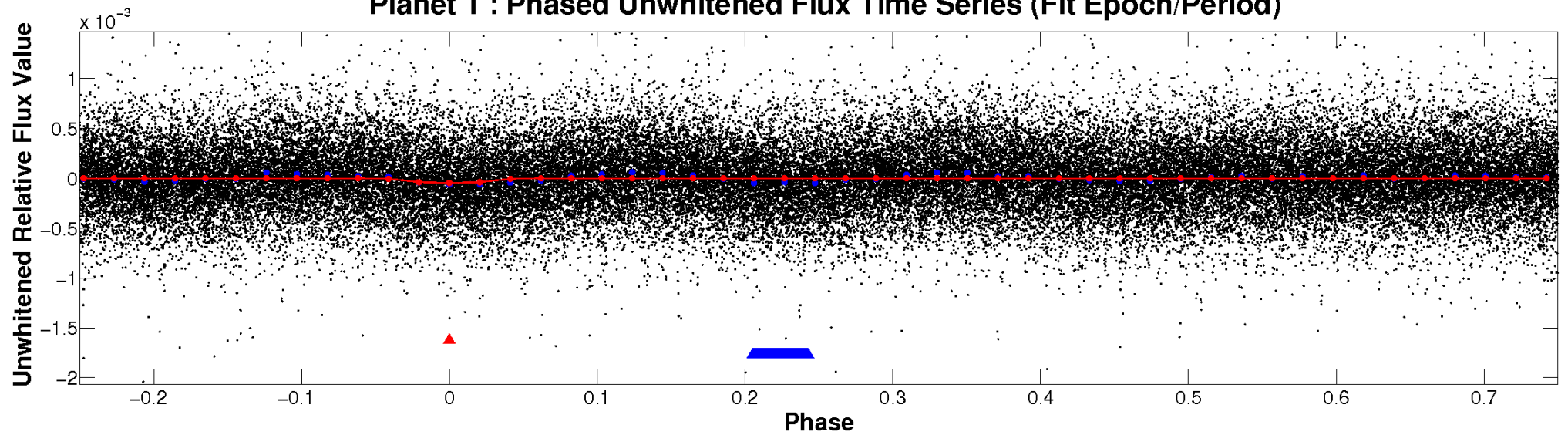
ALT Odd/Even

TCE 005819178-01

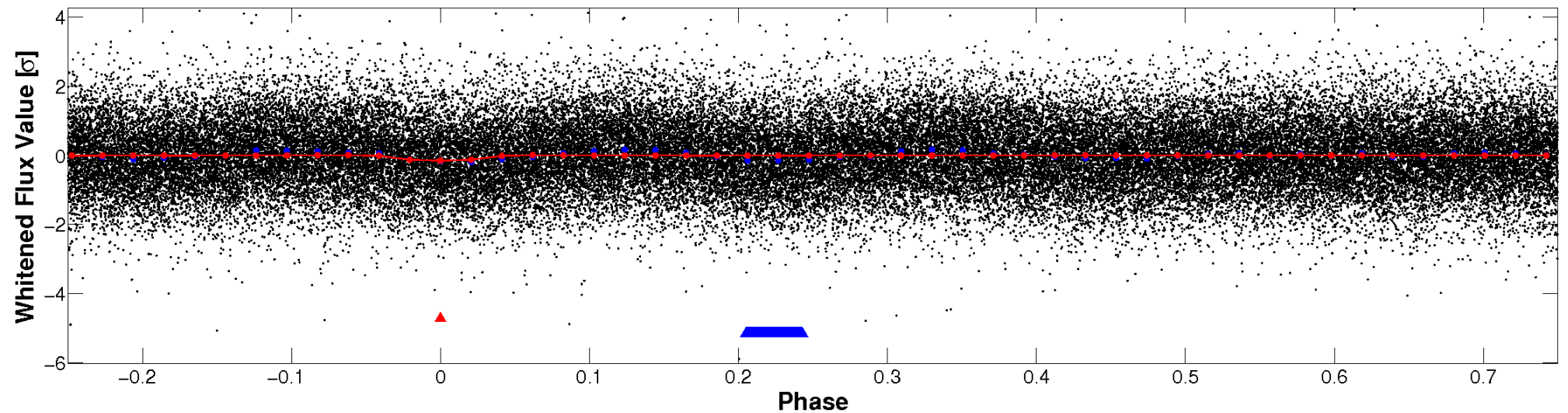


Non-Whitened Vs. Whitened Light Curve

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

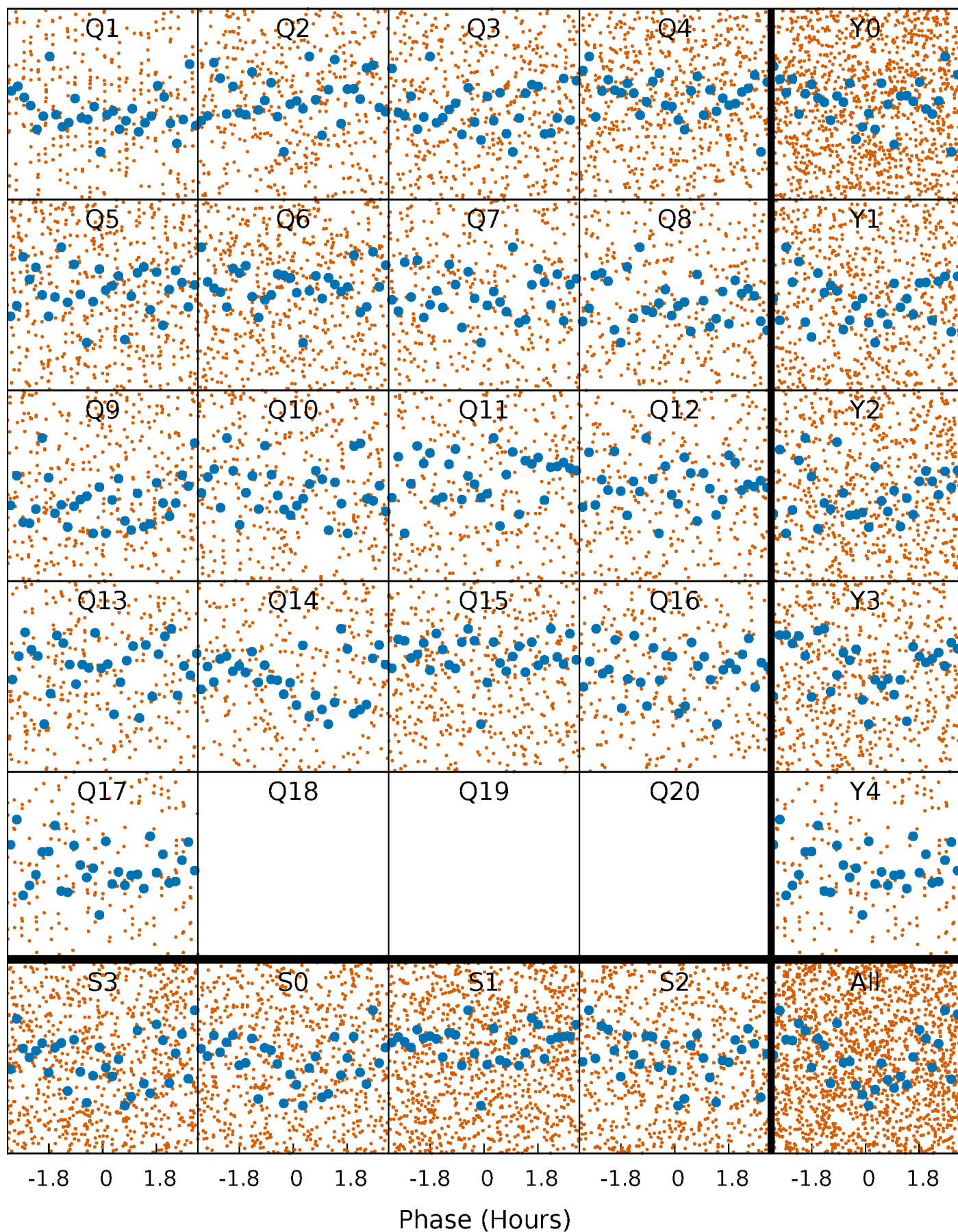


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



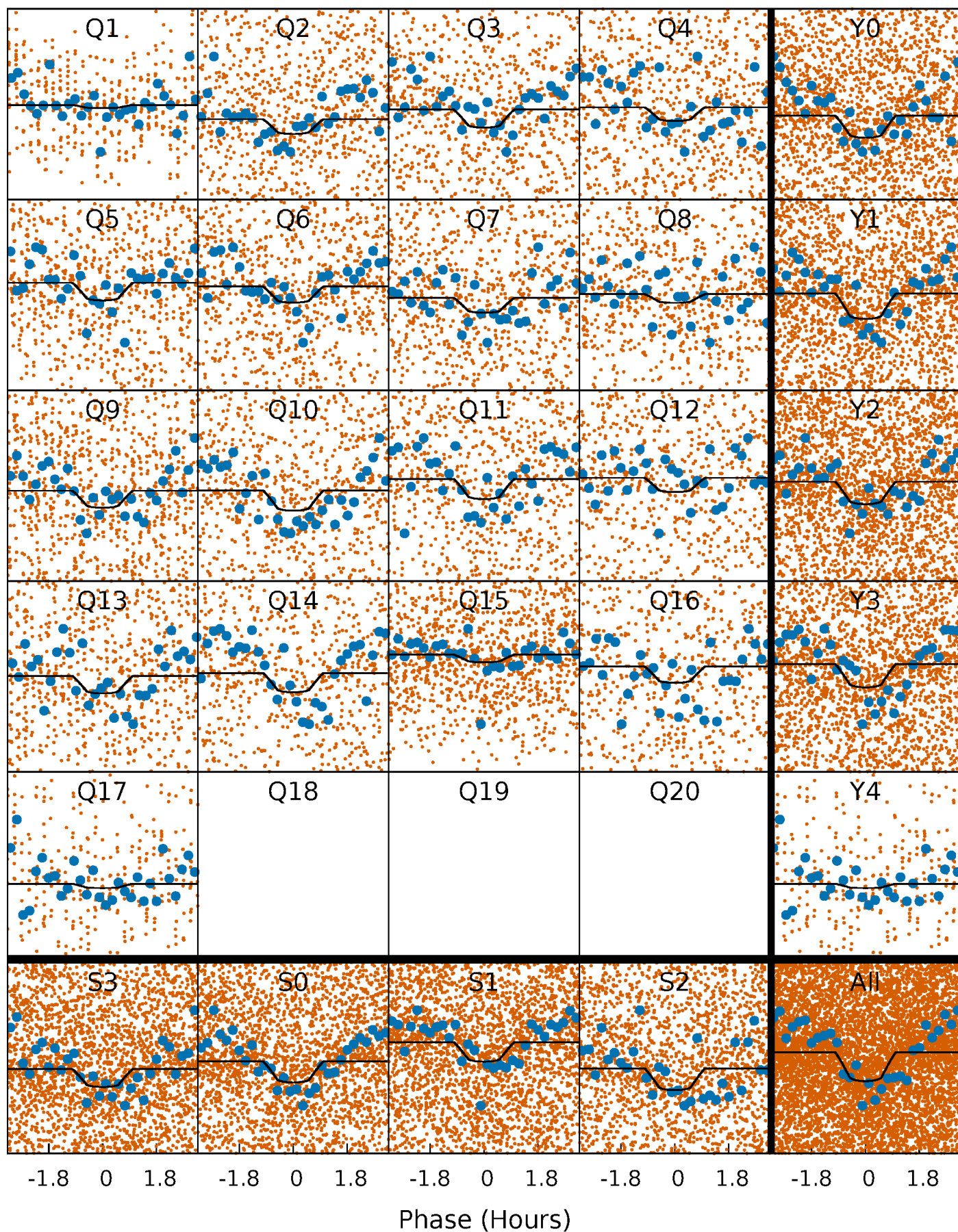
PDC Quarter-Phased Transit Curves

TCE 005819178-01 P= 0.991129 Days $T_0=132.244075$ (BKJD)



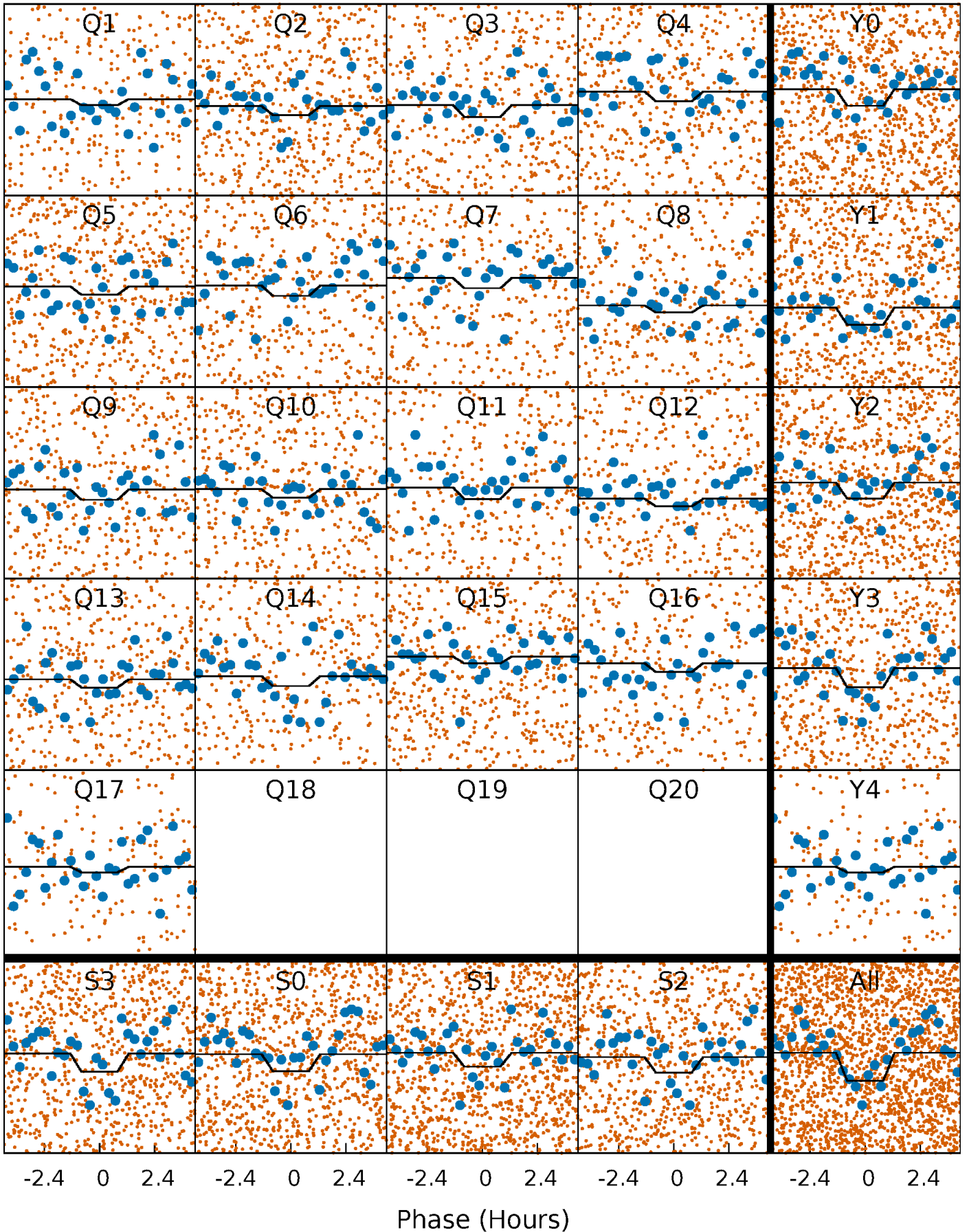
DV Quarter-Phased Transit Curves

TCE 005819178-01 P= 0.991129 Days $T_0=132.244075$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

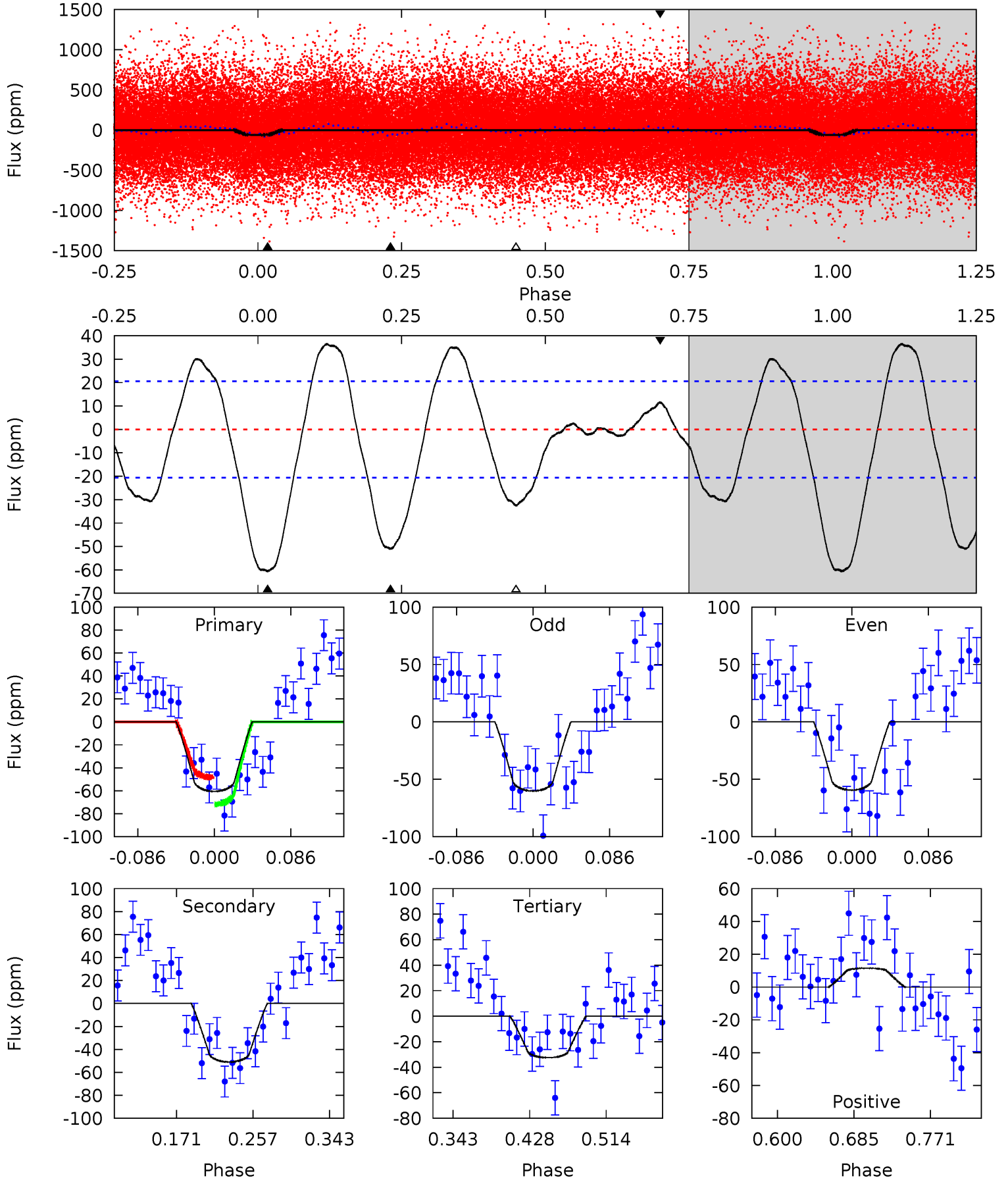
TCE 005819178-01 P= 0.991157 Days $T_0=132.244688$ (BKJD)



DV Model-Shift Uniqueness Test

005819178-01, P = 0.991129 Days, E = 131.252946 Days

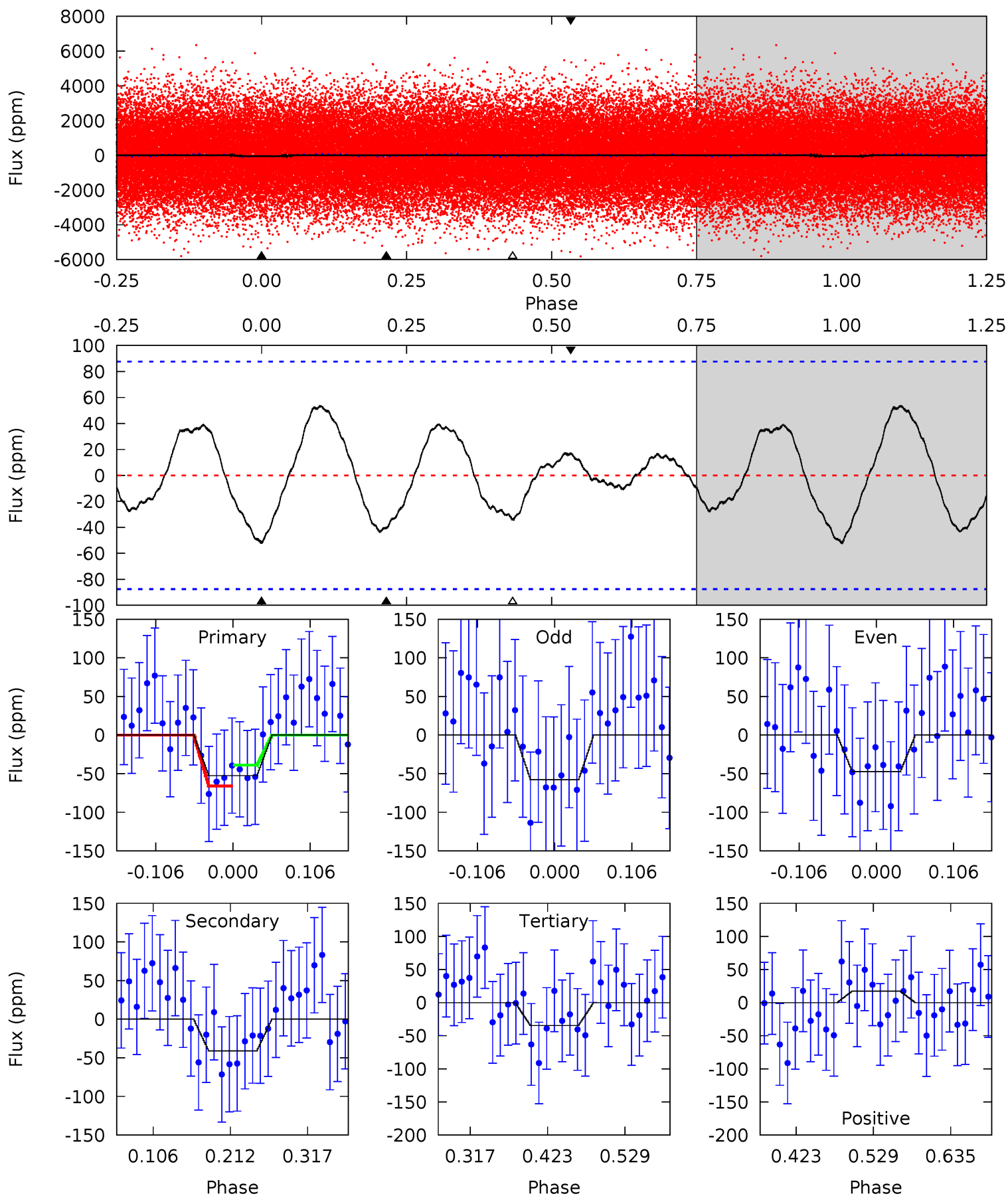
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	11.4	7.24	2.57	4.60	1.72	4.50	6.27	10.9	4.13	8.80	0.09	1.03	0.38	2.62



Alt Model-Shift Uniqueness Test

005819178-01, P = 0.991157 Days, E = 131.253531 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.73	2.14	1.80	0.90	4.55	1.62	0.98	0.93	1.83	0.34	1.24	0.27	1.27	0.51	0.70



Stellar Parameters For KIC 005819178

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7282^{+228}_{-330}	$3.961^{+0.246}_{-0.143}$	$-0.120^{+0.250}_{-0.350}$	$2.216^{+0.576}_{-0.704}$	$1.636^{+0.184}_{-0.342}$	$0.212^{+0.353}_{-0.085}$
	+3%/-5%	+6%/-4%	+208%/-292%	+26%/-32%	+11%/-21%	+167%/-40%
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 005819178-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-51 ± 4	$1.73^{+1.02}_{-0.89}$	4330^{+365}_{-395}	6792^{+4425}_{-1410}	$4.833^{+14.418}_{-3.014}$
Alt.	-41 ± 19	$1.74^{+1.18}_{-0.85}$	4353^{+336}_{-358}	6328^{+3524}_{-1608}	$3.546^{+10.388}_{-2.423}$

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

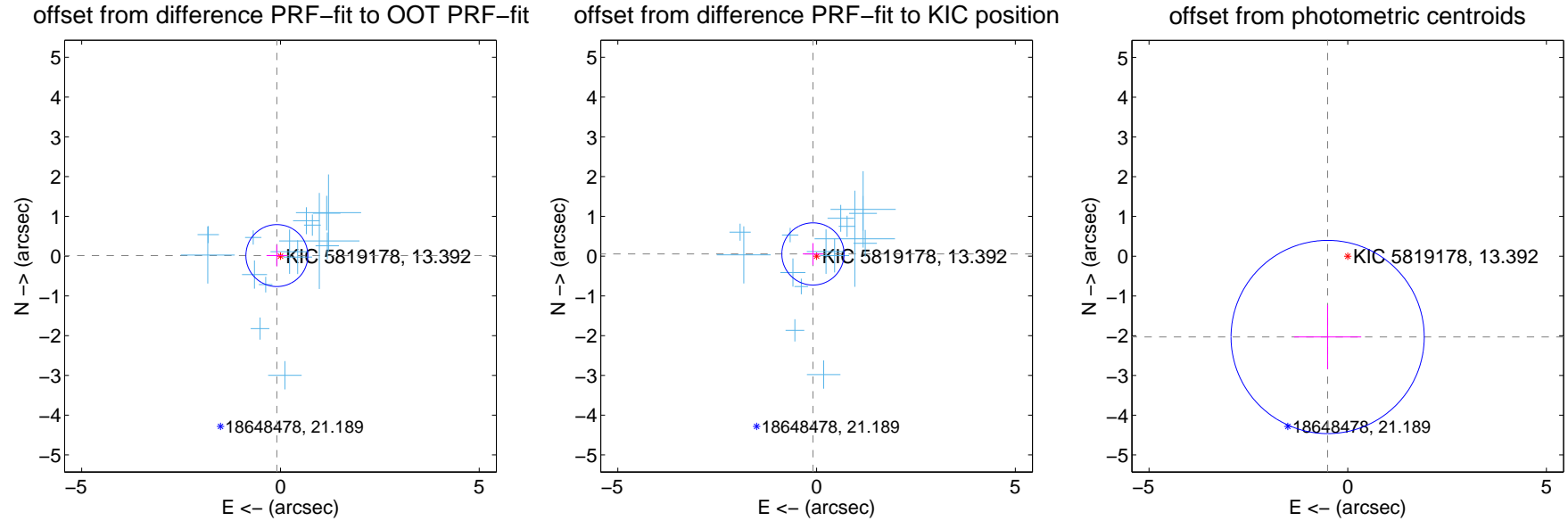
DV Centroid Data

Supplemental centroid analysis for 005819178-01. Kepler magnitude: 13.39. Transit SNR 8.34

There are 15 quarters with good PRF difference image offsets

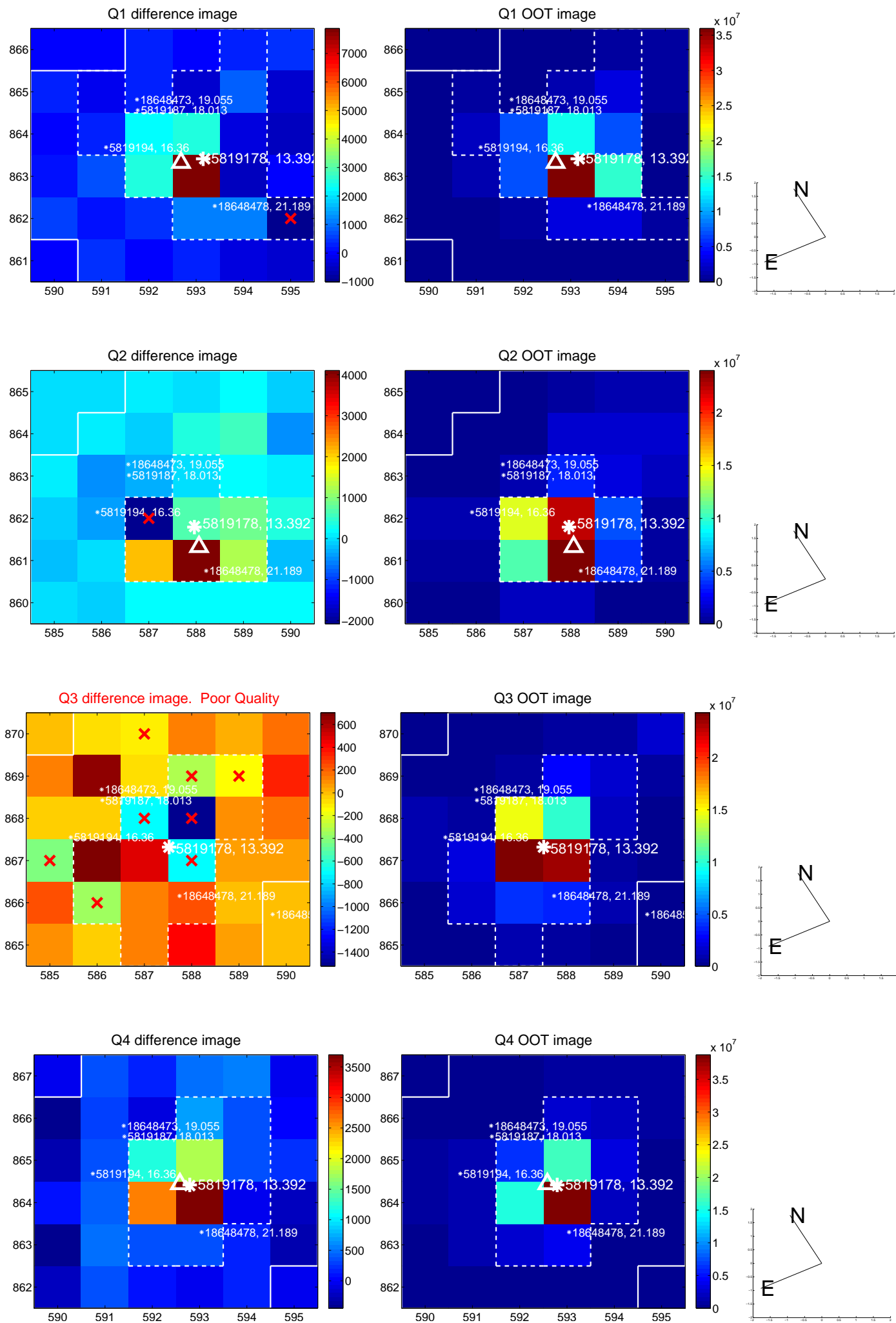
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.260	0.35	0.090 ± 0.260	0.014 ± 0.269
PRF-fit source offset from KIC position	0.106 ± 0.261	0.41	0.091 ± 0.256	0.055 ± 0.274
photometric centroid source offset	2.09 ± 0.81	2.59	0.51 ± 0.85	-2.03 ± 0.81

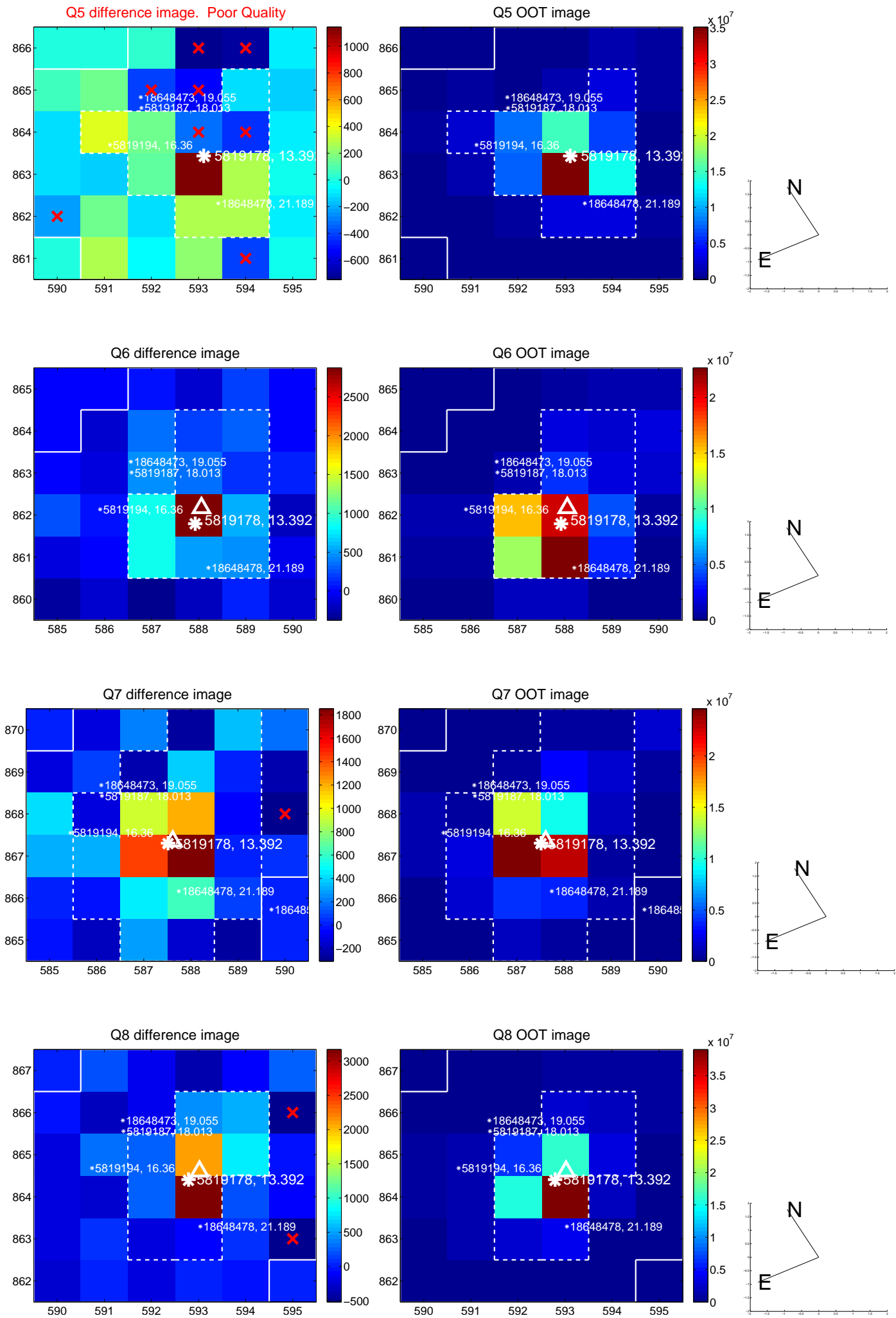


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

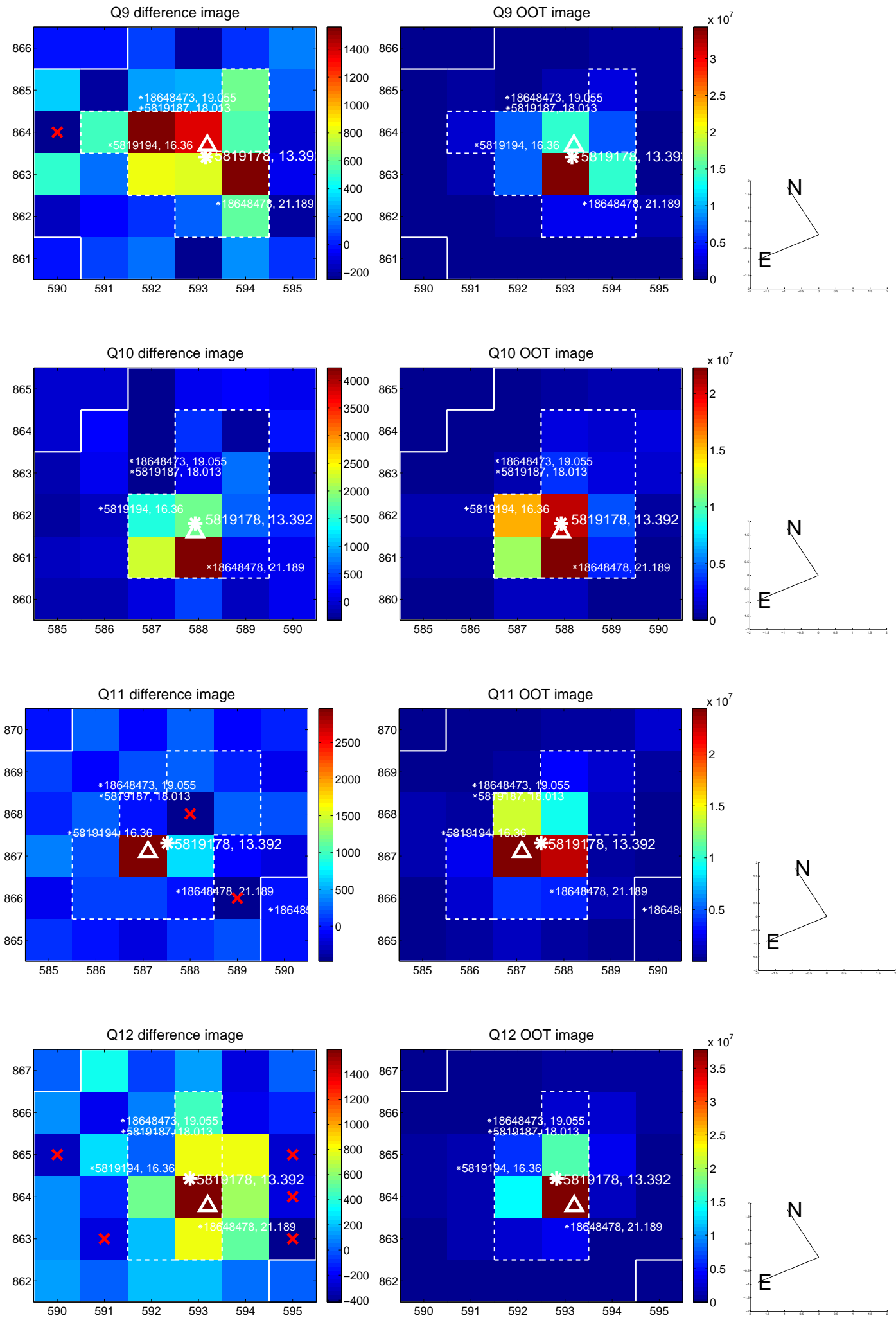
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



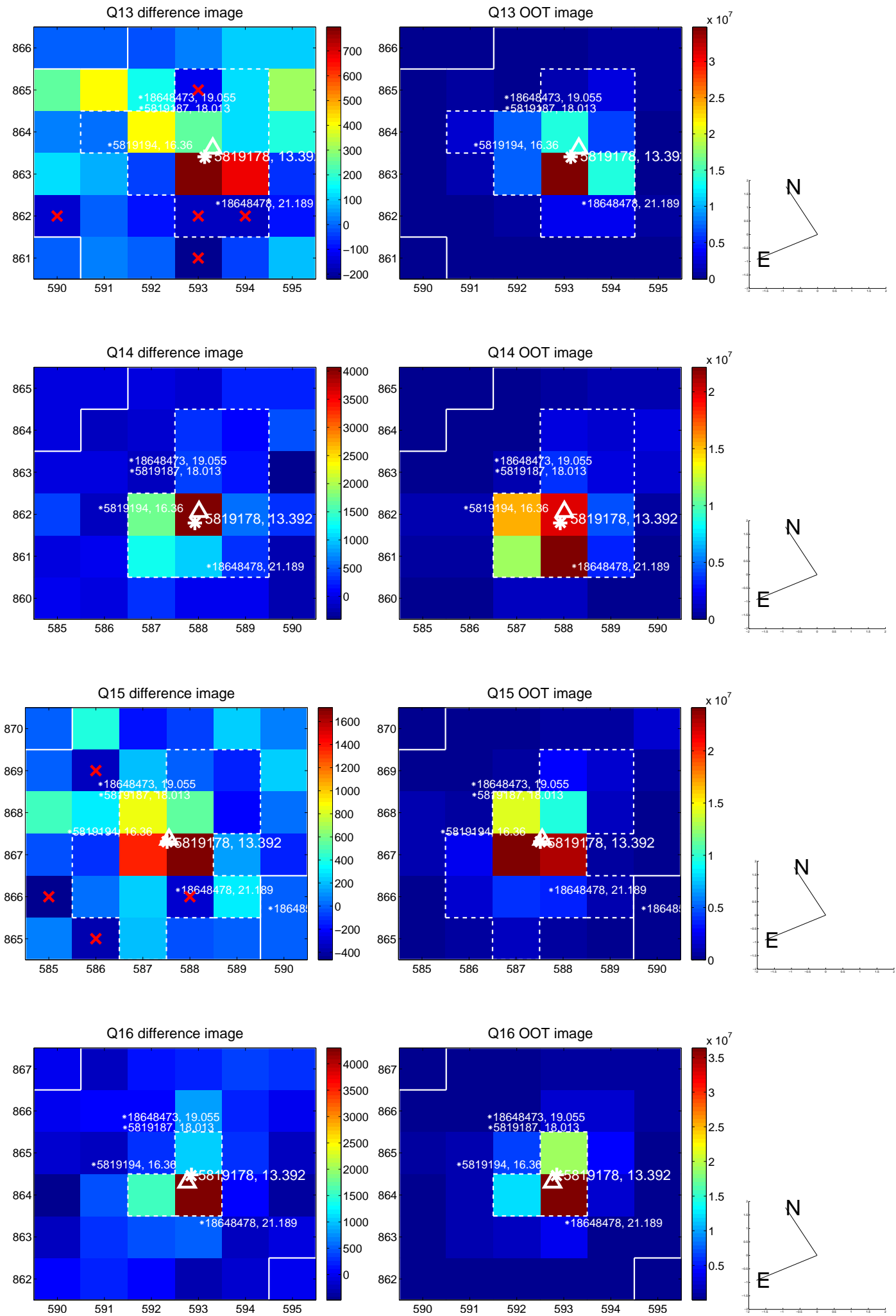
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



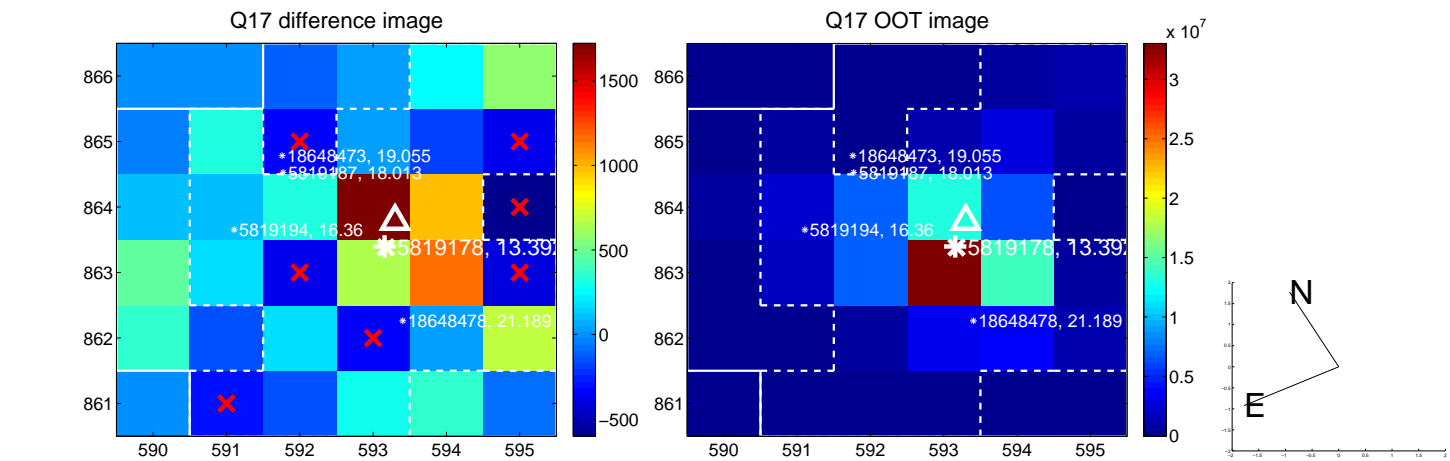
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



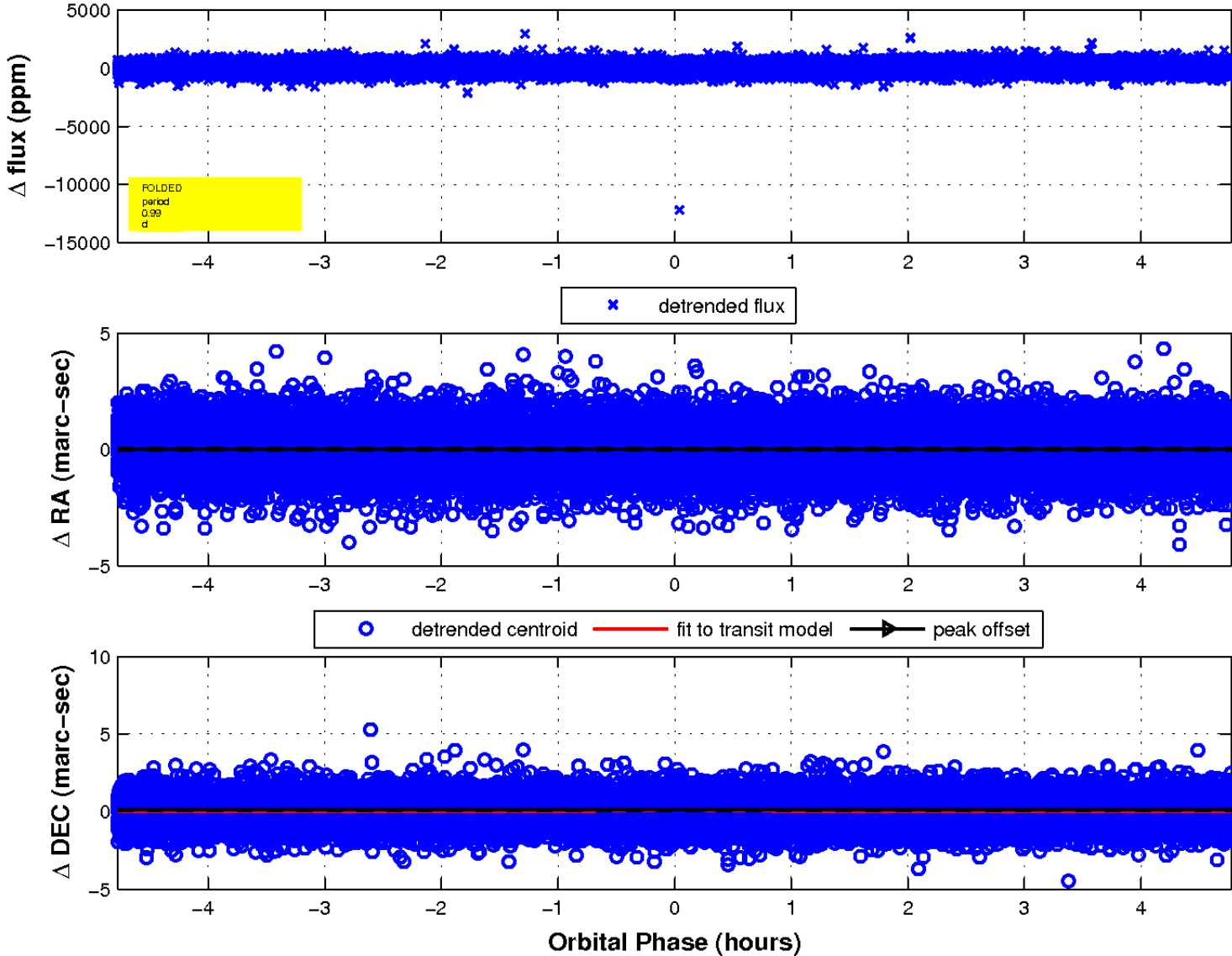
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

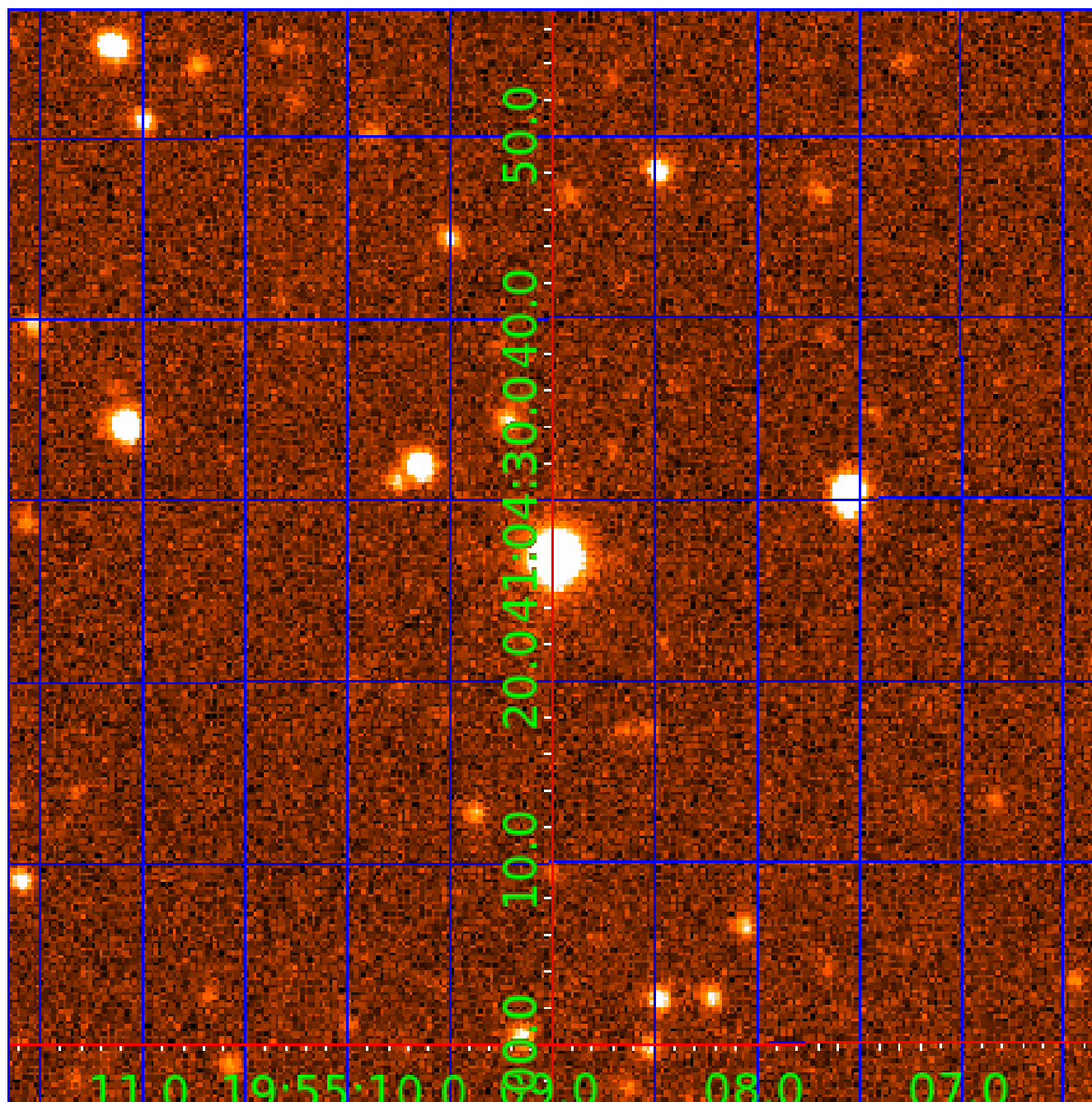


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005819178

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})
005819178-01	OBS	No	0.991129	132.244075	46.9	1.592	10.7	8.3	2.22	7282	1.76	23519.97
005819178-02	OBS	No	0.991154	132.447438	40.0	2.069	8.9	7.9	2.22	7282	1.63	23519.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005819178-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005819178-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

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

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

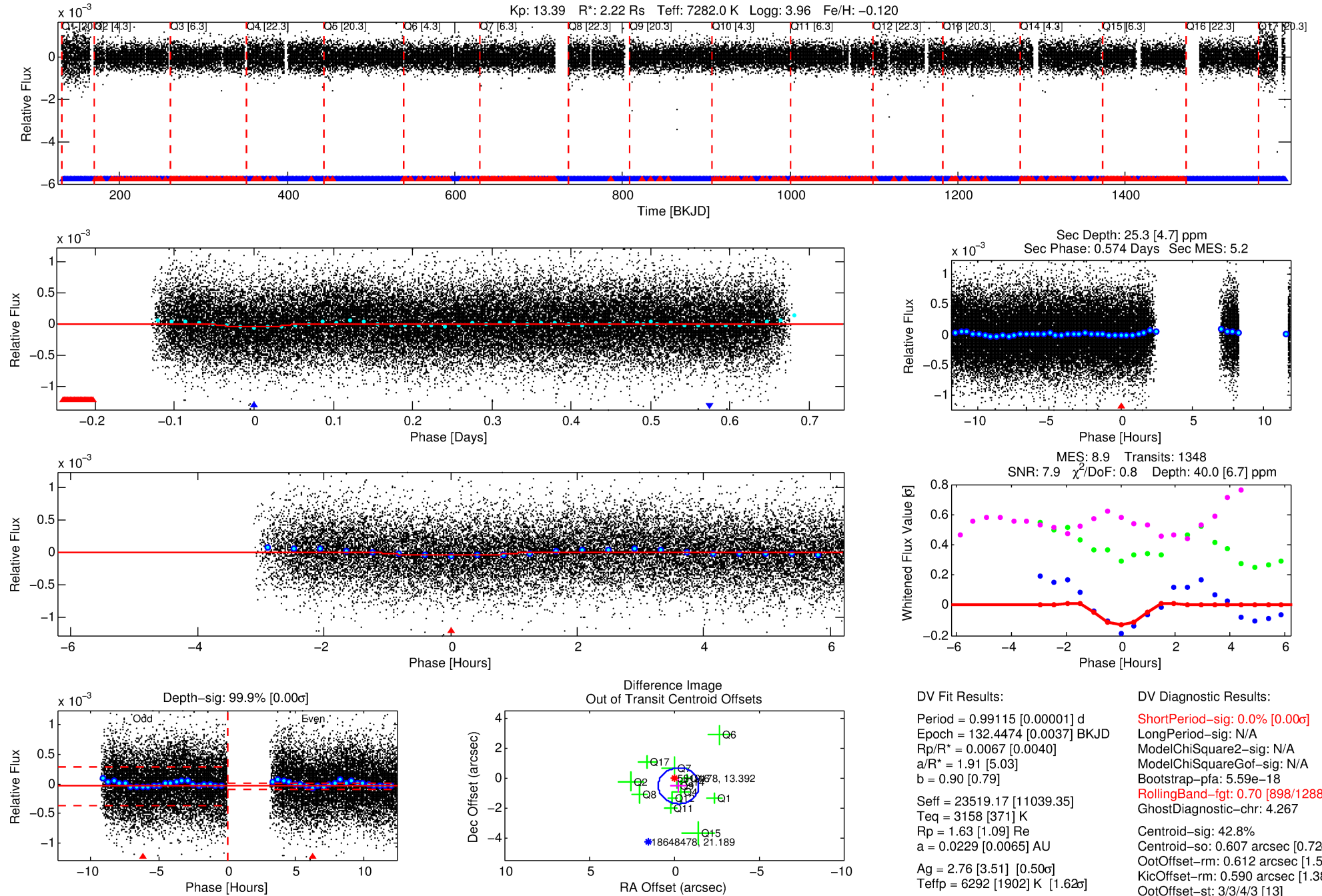
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005819178-02

No Significant Match Found

DV One-Page Summary

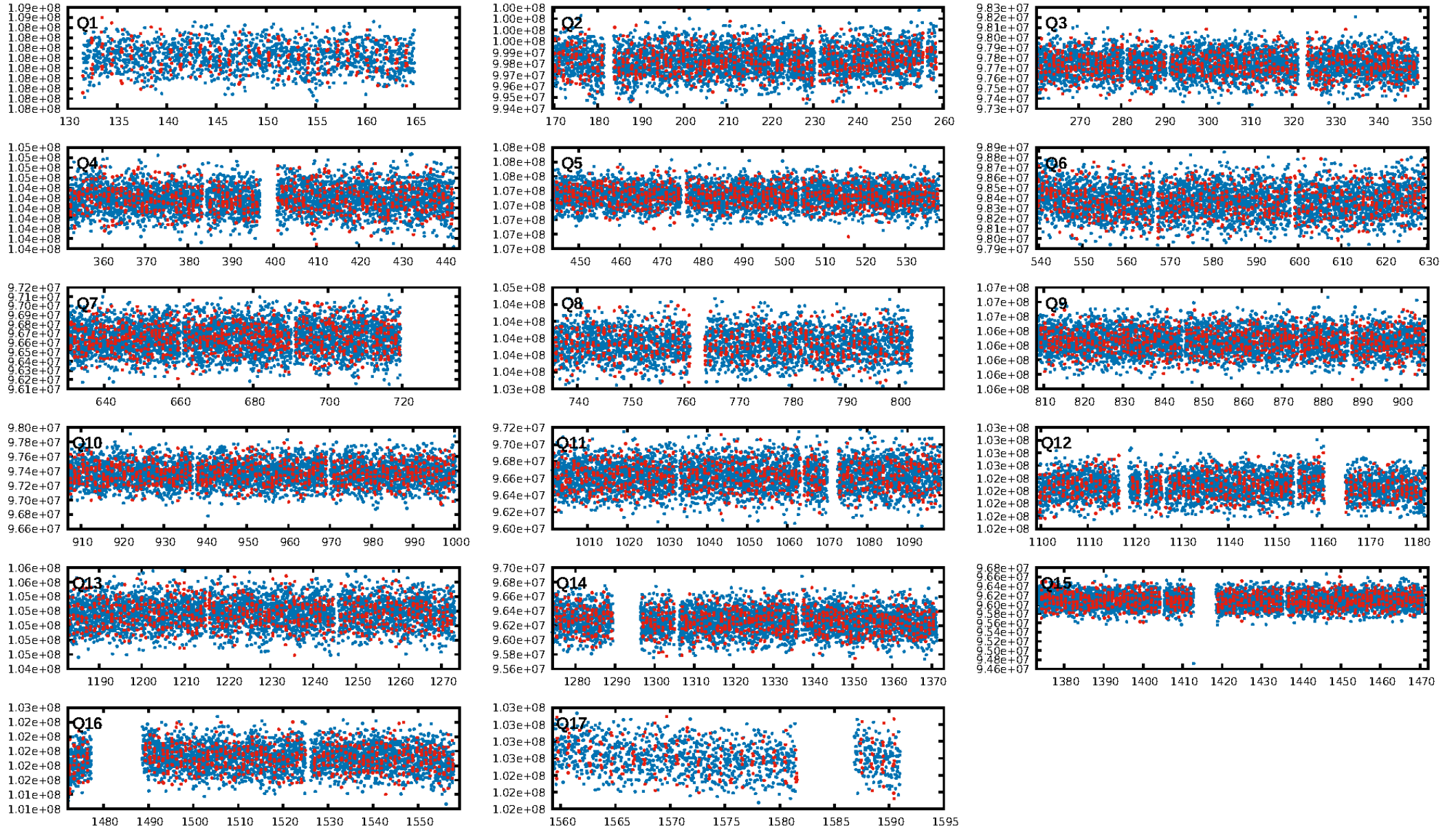
KIC: 5819178 Candidate: 2 of 2 Period: 0.991 d



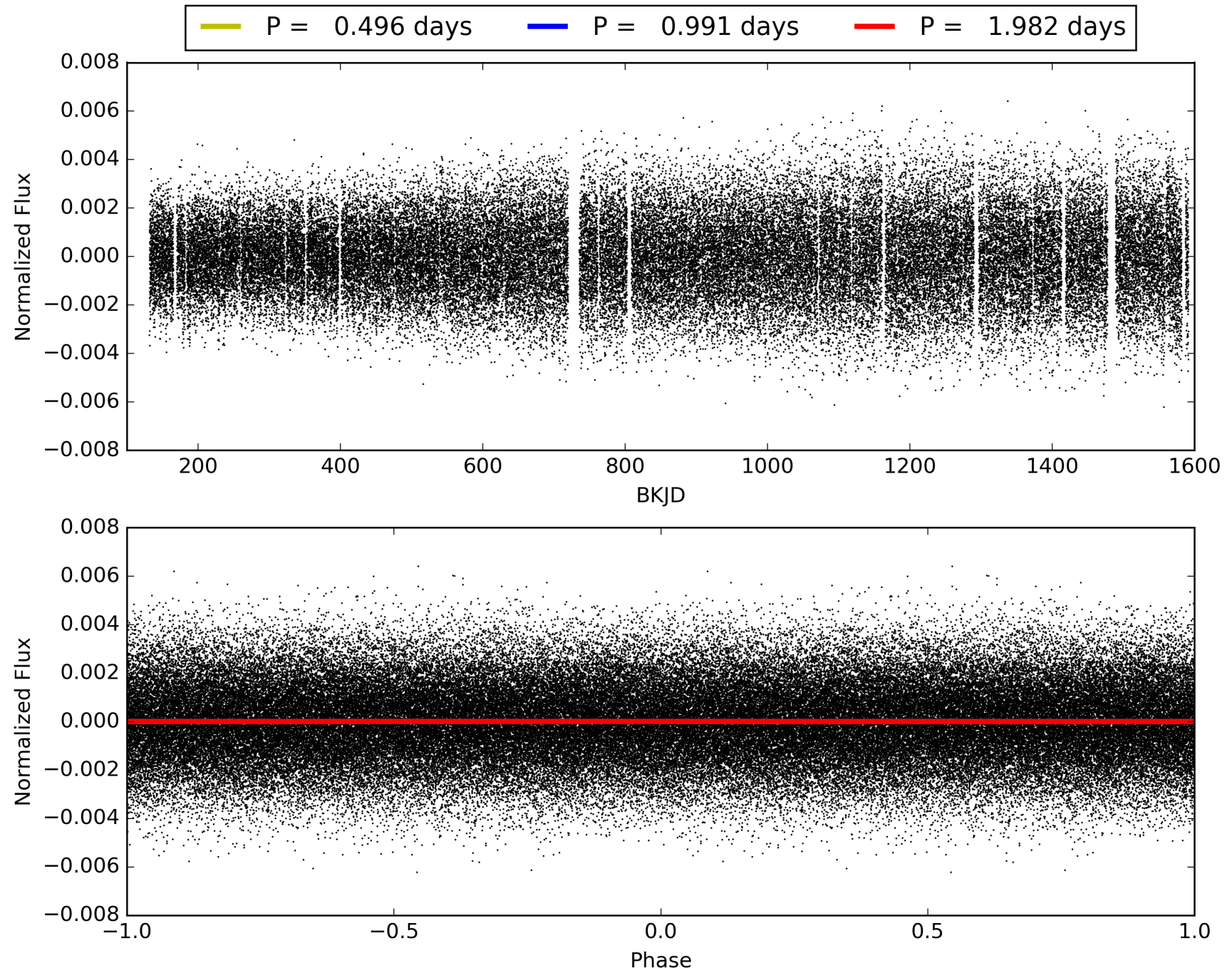
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:14:25 Z

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

TCE 005819178-02, PDC Light Curves

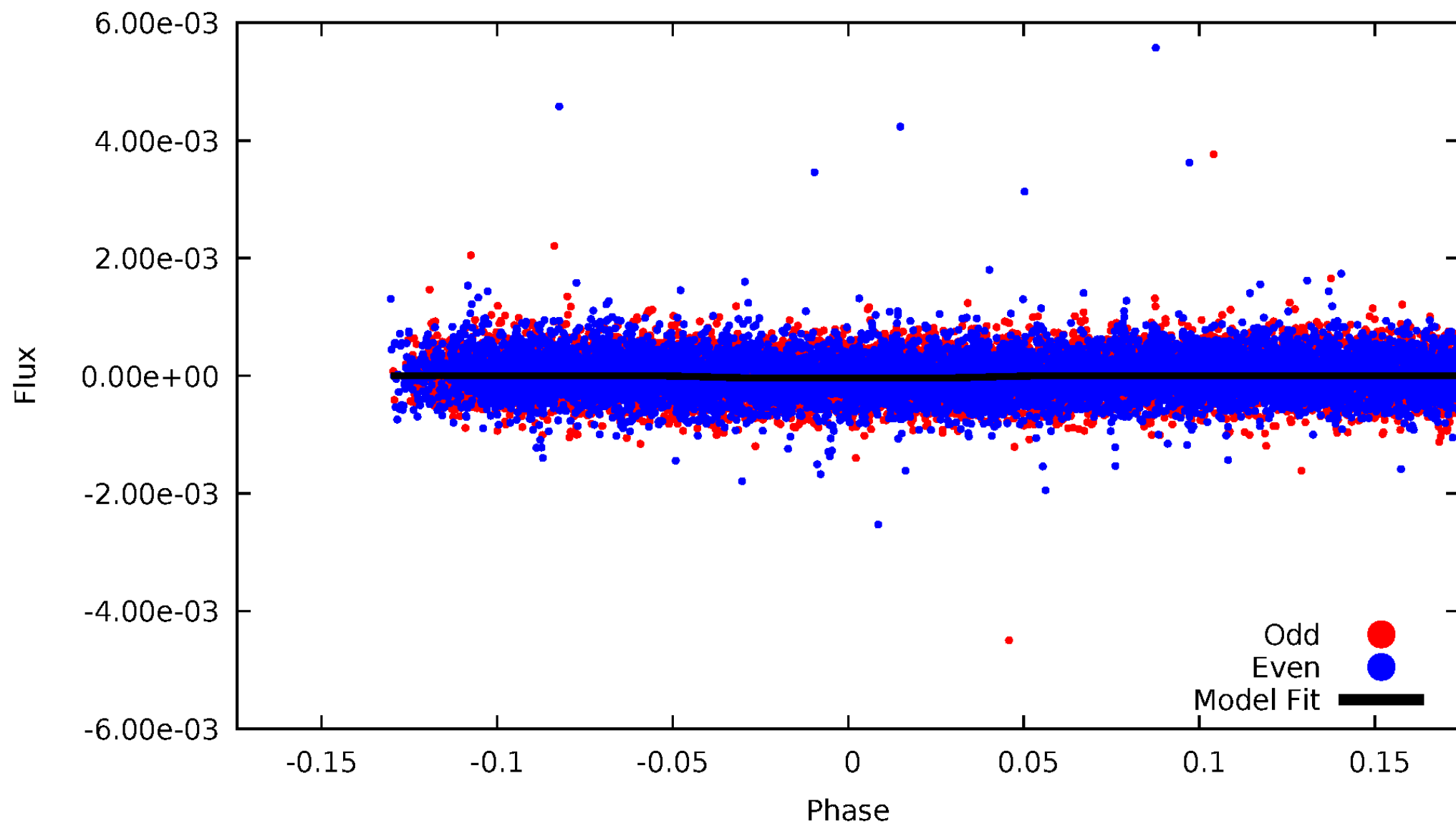


TCE 005819178-02



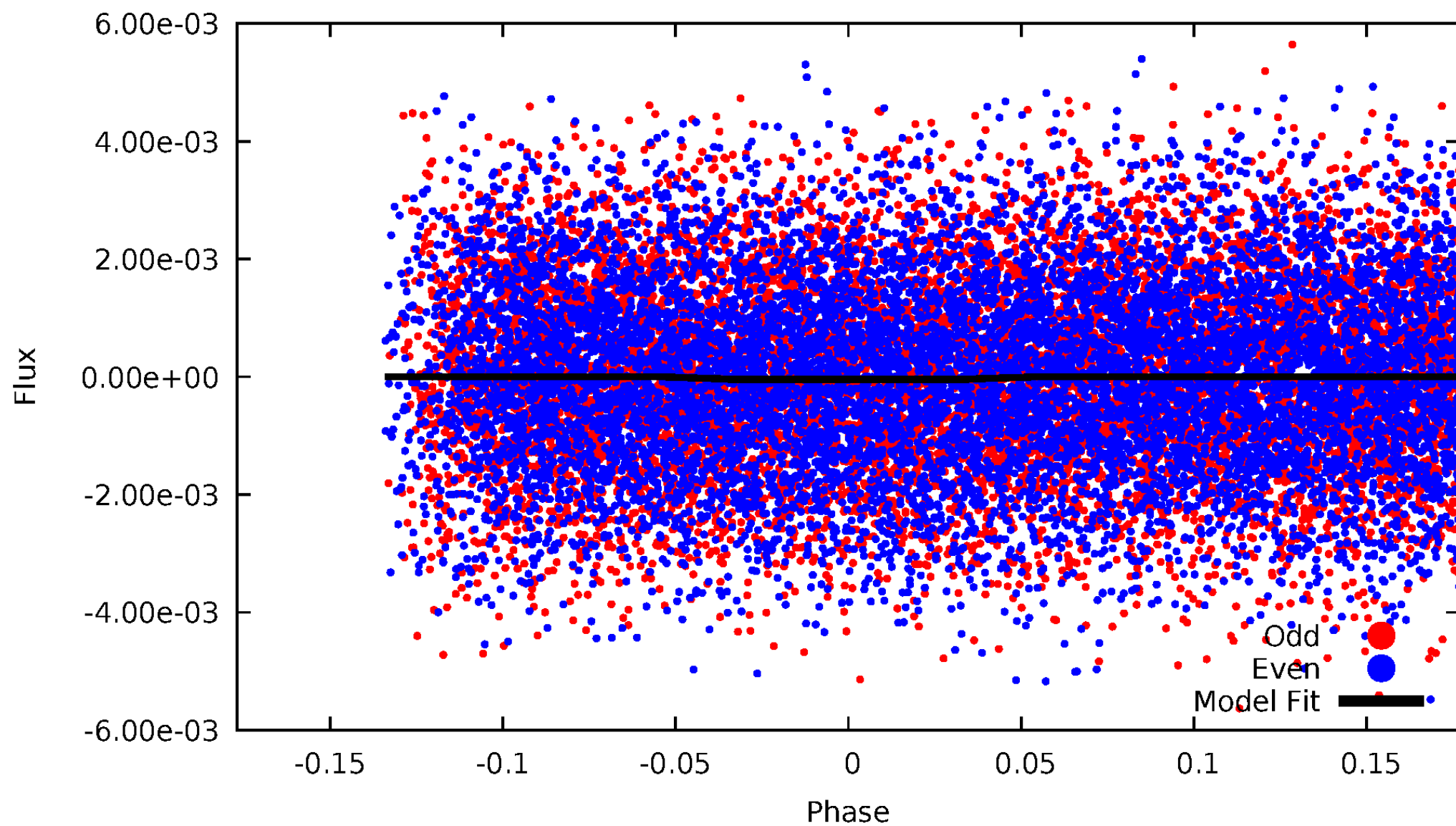
DV Odd/Even

TCE 005819178-02



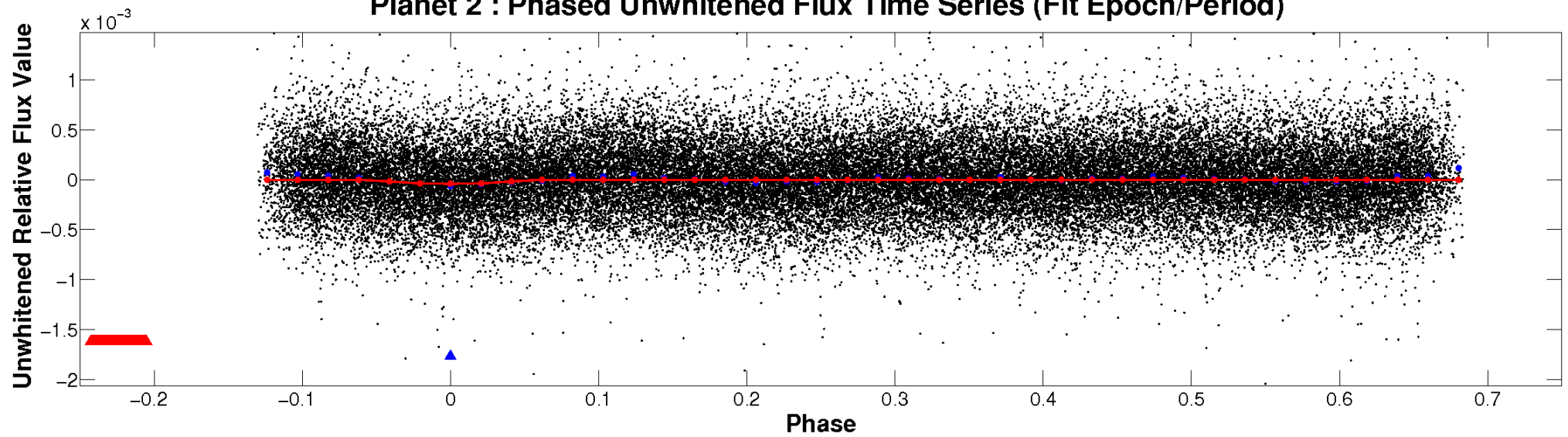
ALT Odd/Even

TCE 005819178-02

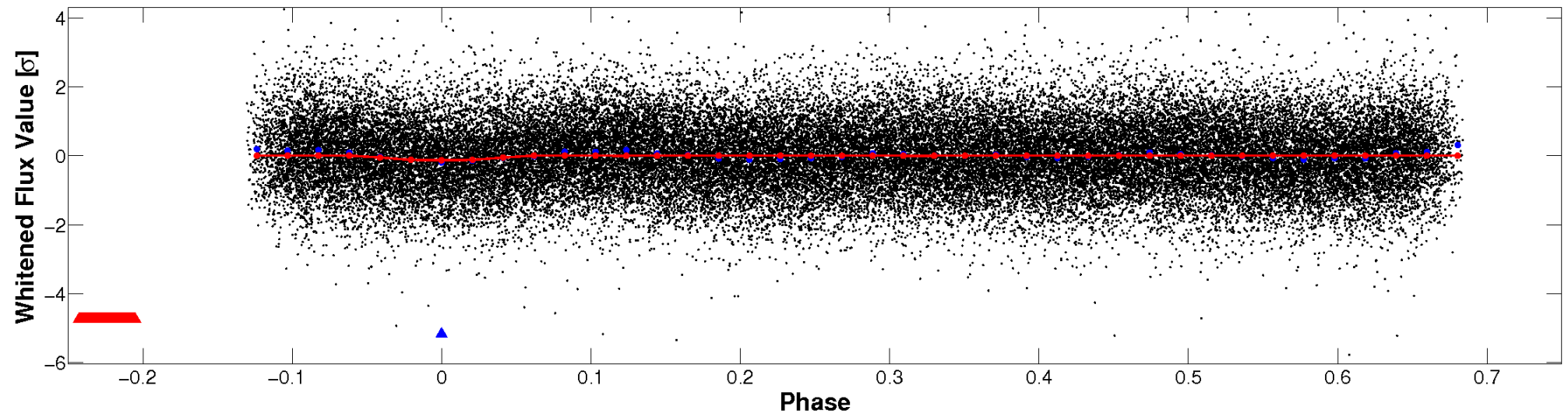


Non-Whitened Vs. Whitened Light Curve

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

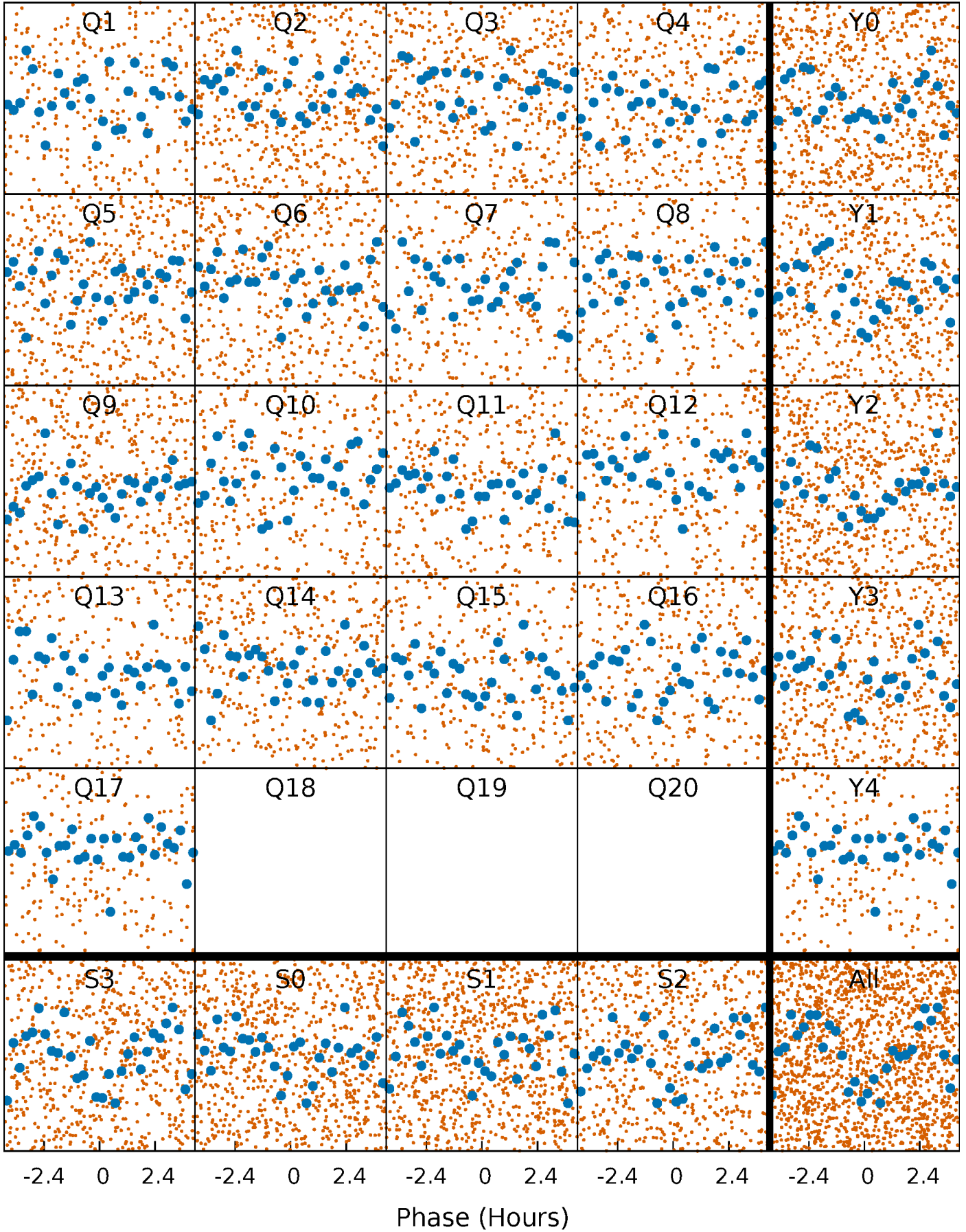


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



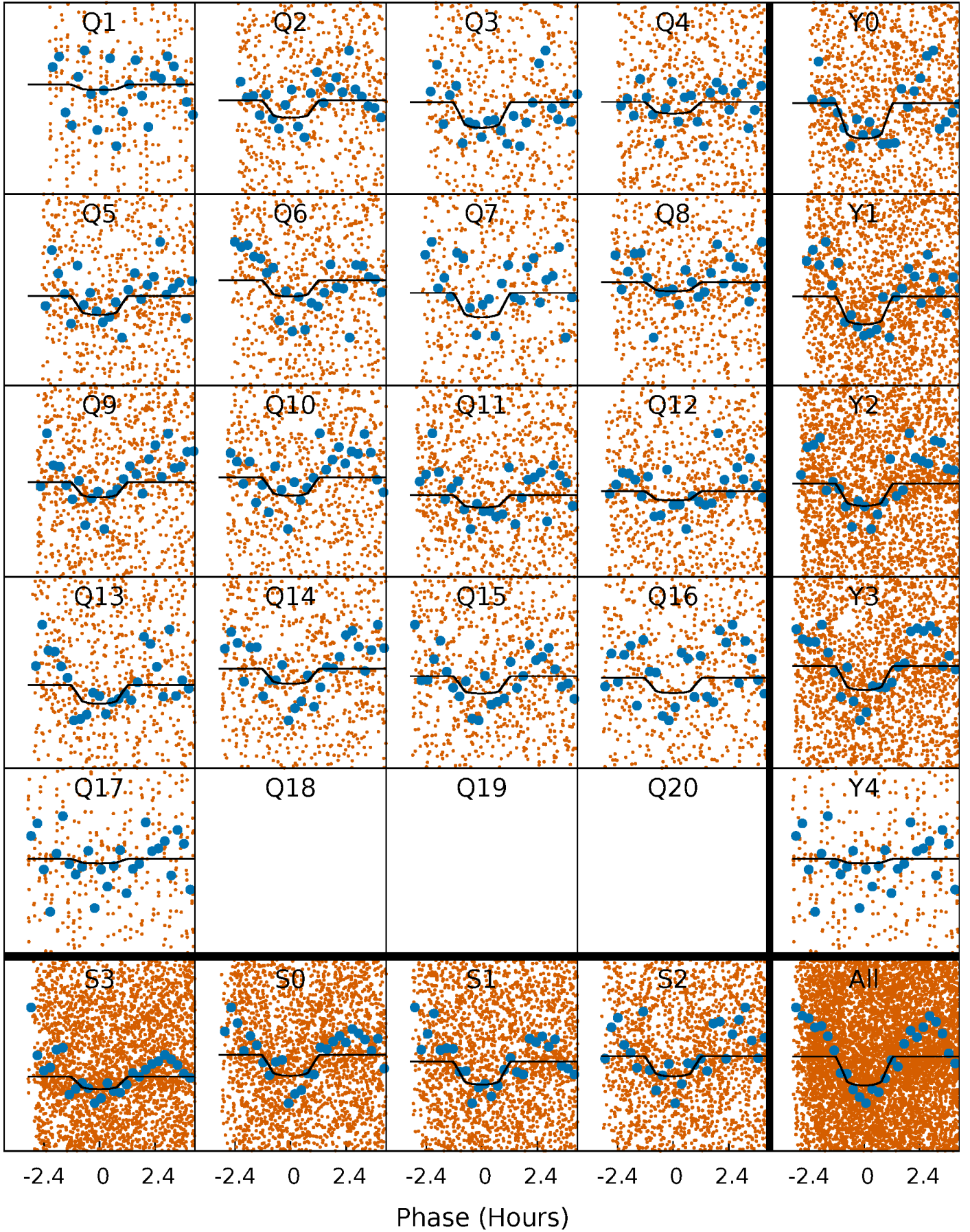
PDC Quarter-Phased Transit Curves

TCE 005819178-02 P= 0.991154 Days $T_0=132.447438$ (BKJD)



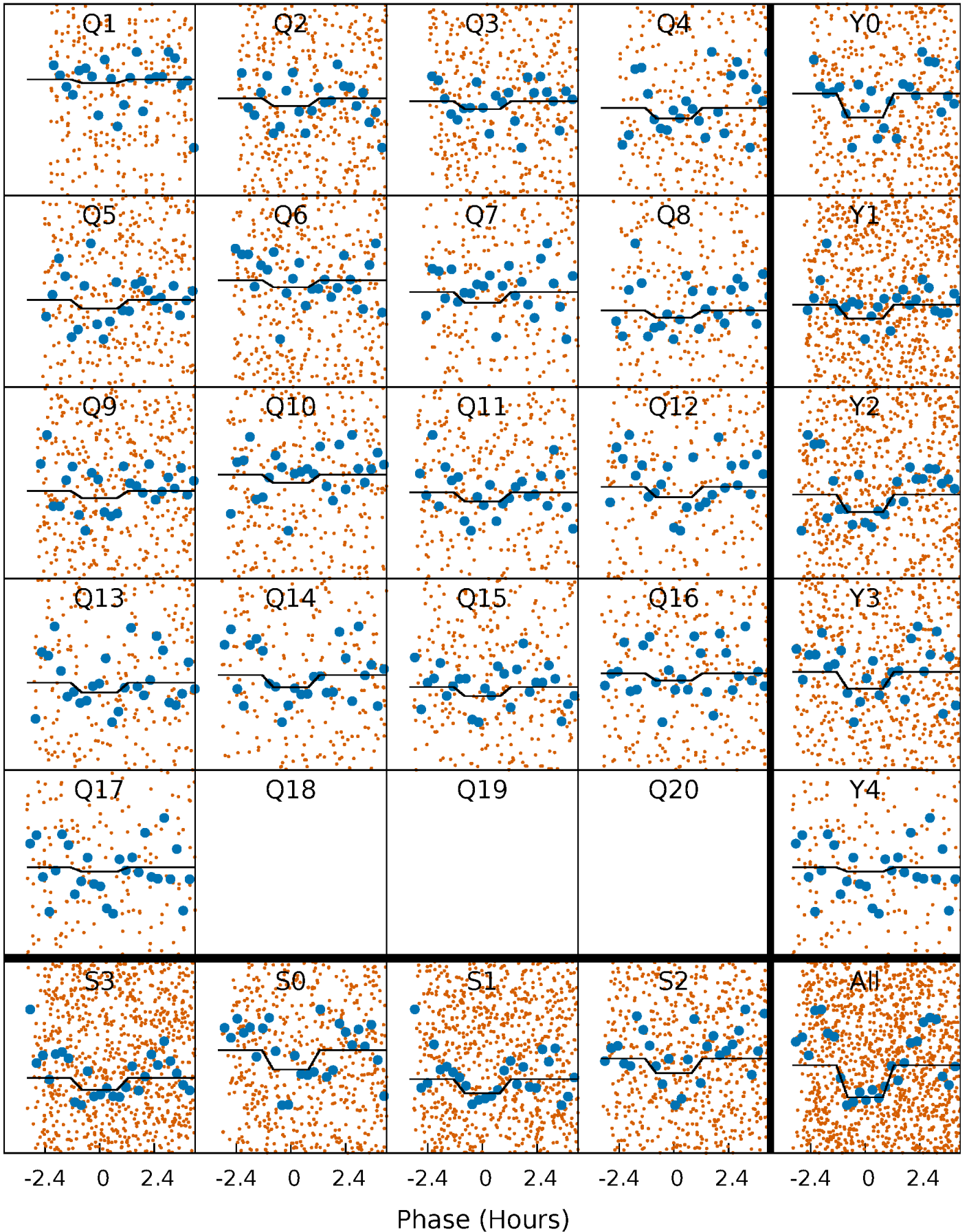
DV Quarter-Phased Transit Curves

TCE 005819178-02 $P = 0.991154$ Days $T_0 = 132.447438$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

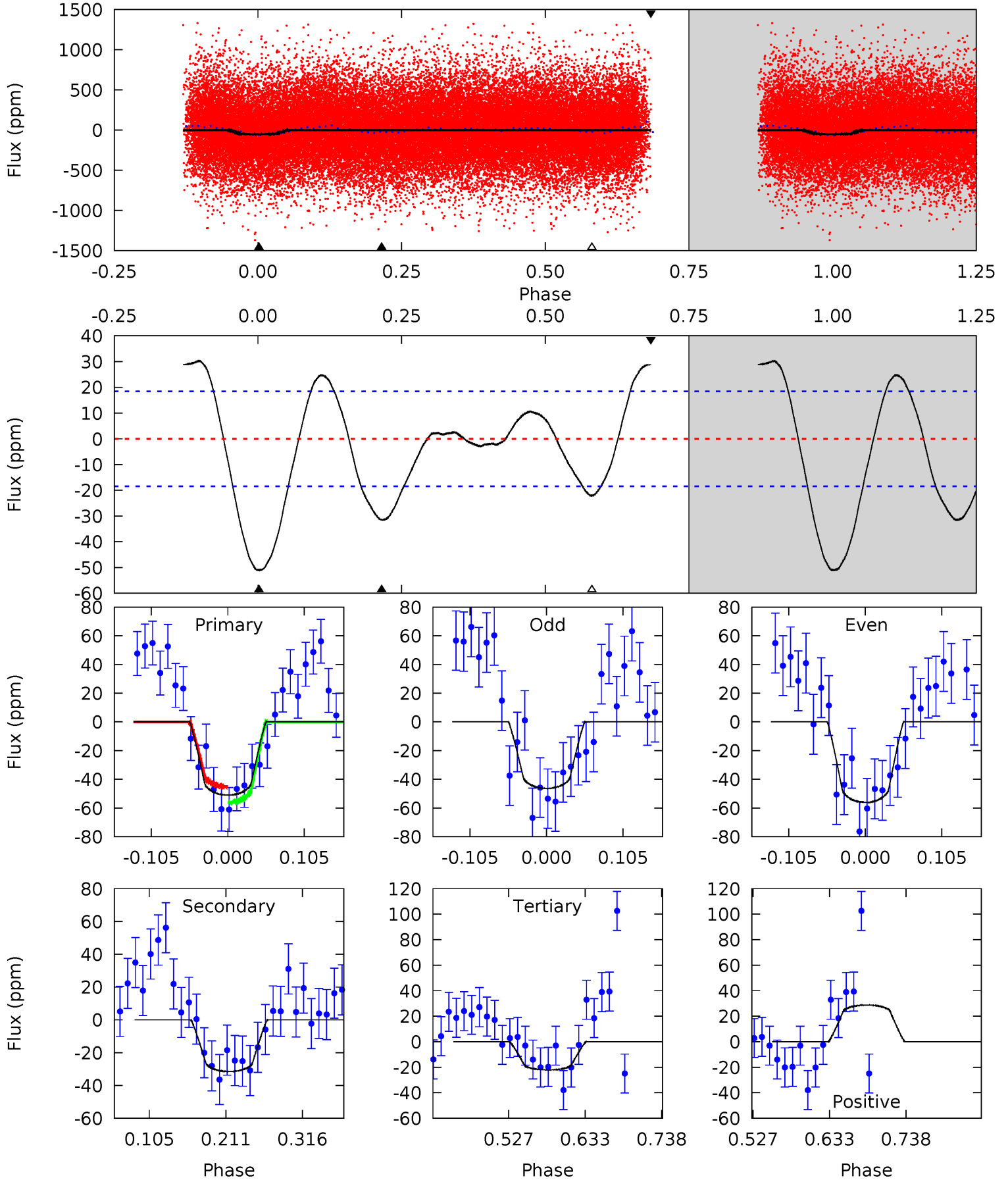
TCE 005819178-02 $P = 0.991157$ Days $T_0 = 132.447150$ (BKJD)



DV Model-Shift Uniqueness Test

005819178-02, P = 0.991154 Days, E = 131.456284 Days

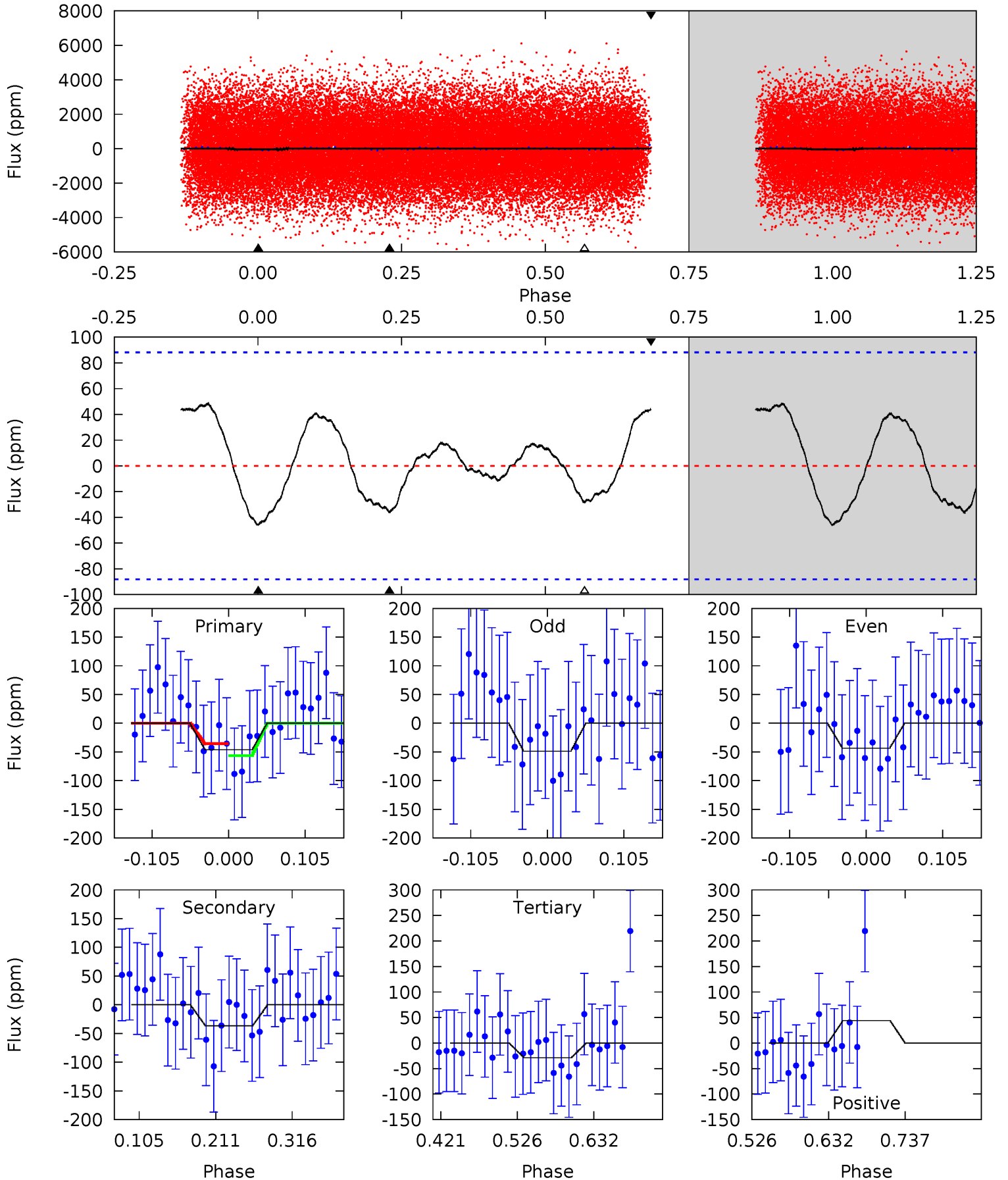
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	7.78	5.46	7.11	4.55	1.62	3.00	7.15	5.50	2.33	0.67	1.22	0.97	0.37	1.37



Alt Model-Shift Uniqueness Test

005819178-02, P = 0.991157 Days, E = 131.455993 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.38	1.89	1.49	2.27	4.55	1.62	0.95	0.89	0.11	0.40	-0.38	0.13	0.92	0.51	0.54



Stellar Parameters For KIC 005819178

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7282^{+228}_{-330}	$3.961^{+0.246}_{-0.143}$	$-0.120^{+0.250}_{-0.350}$	$2.216^{+0.576}_{-0.704}$	$1.636^{+0.184}_{-0.342}$	$0.212^{+0.353}_{-0.085}$
	+3%/-5%	+6%/-4%	+208%/-292%	+26%/-32%	+11%/-21%	+167%/-40%
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 005819178-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-32 ± 4	$1.58^{+0.92}_{-0.82}$	4337^{+333}_{-360}	6333^{+3867}_{-1374}	$3.614^{+11.909}_{-2.218}$
Alt.	-37 ± 19	$1.56^{+0.96}_{-0.86}$	4348^{+319}_{-381}	6452^{+5019}_{-1754}	$4.026^{+16.630}_{-2.913}$

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

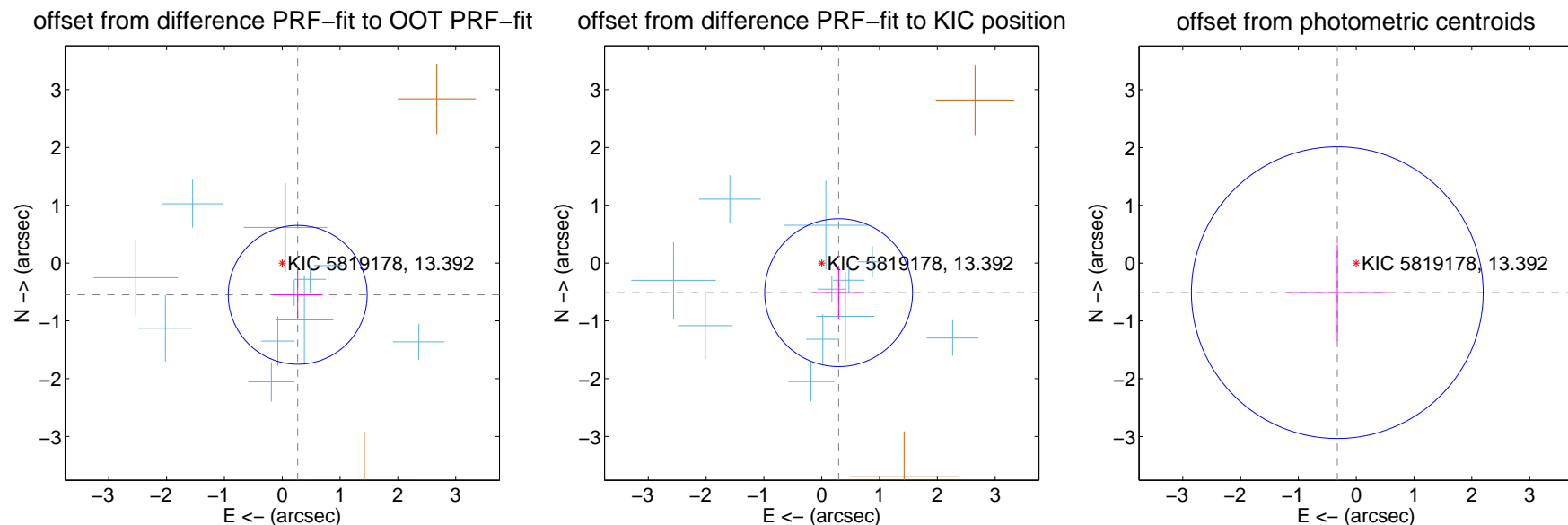
DV Centroid Data

Supplemental centroid analysis for 005819178-02. Kepler magnitude: 13.39. Transit SNR 7.91

There are 11 quarters with good PRF difference image offsets

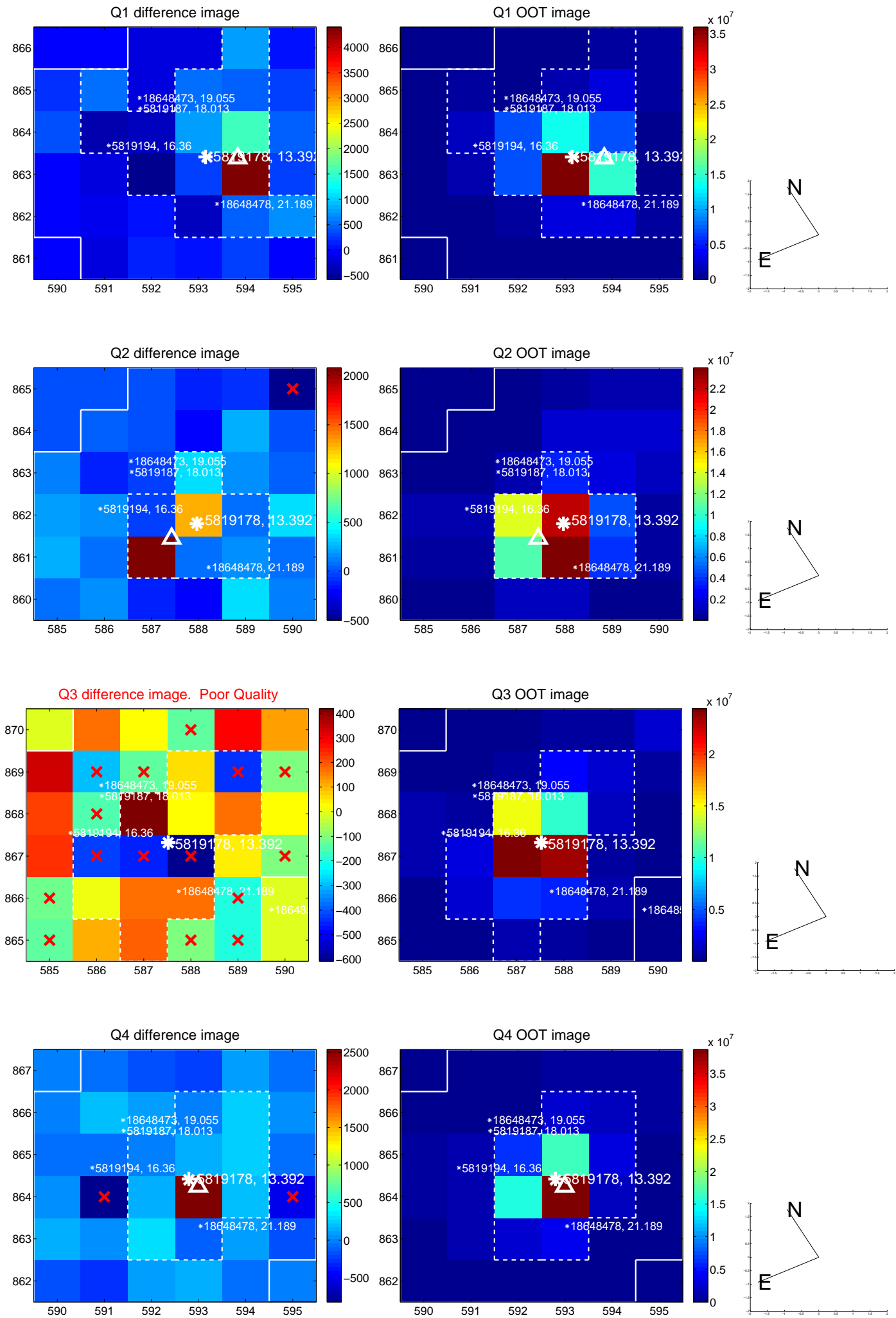
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.612 ± 0.400	1.53	-0.268 ± 0.431	-0.550 ± 0.416
PRF-fit source offset from KIC position	0.590 ± 0.426	1.38	-0.292 ± 0.446	-0.513 ± 0.455
photometric centroid source offset	0.61 ± 0.84	0.72	0.33 ± 0.87	-0.51 ± 0.83

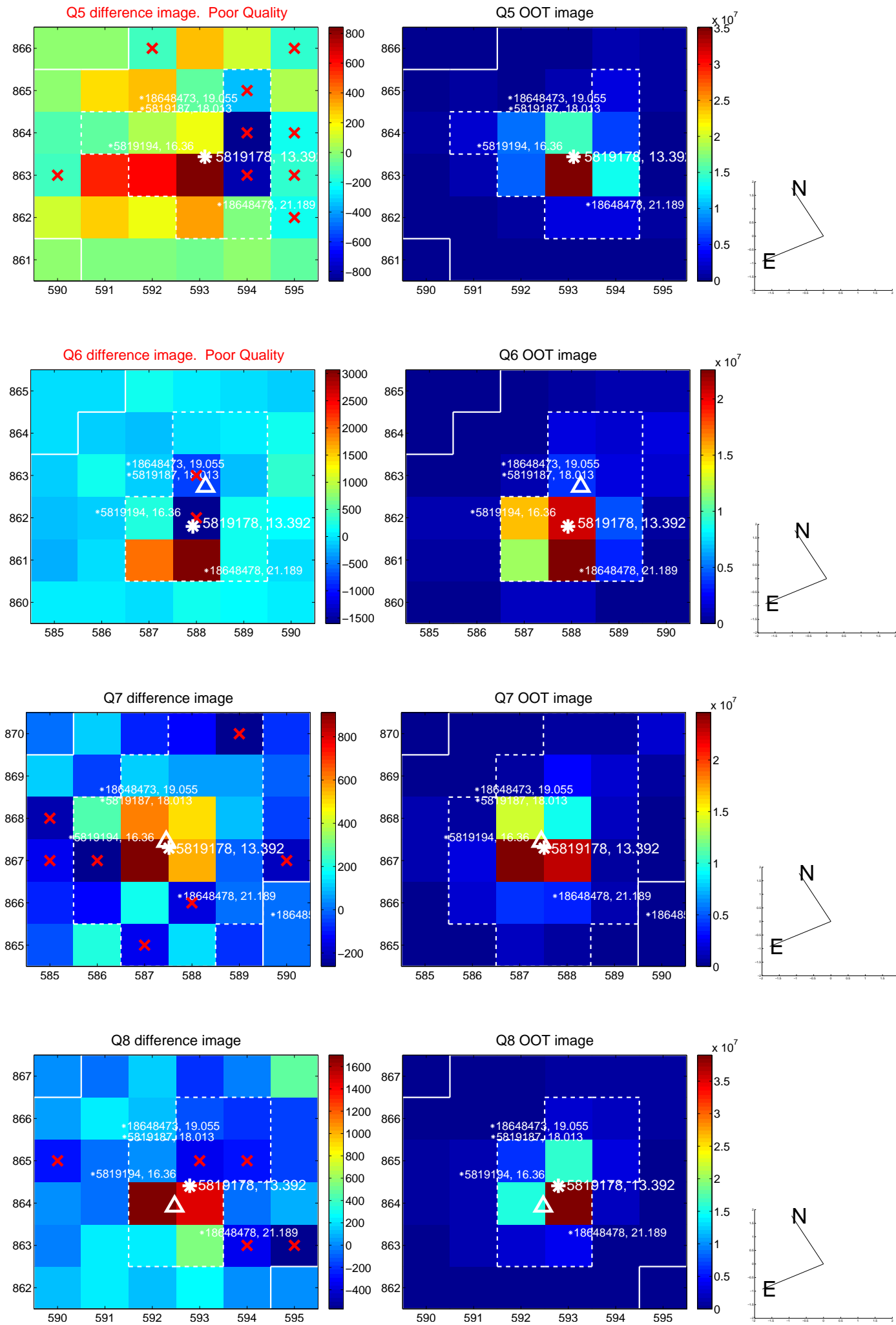


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

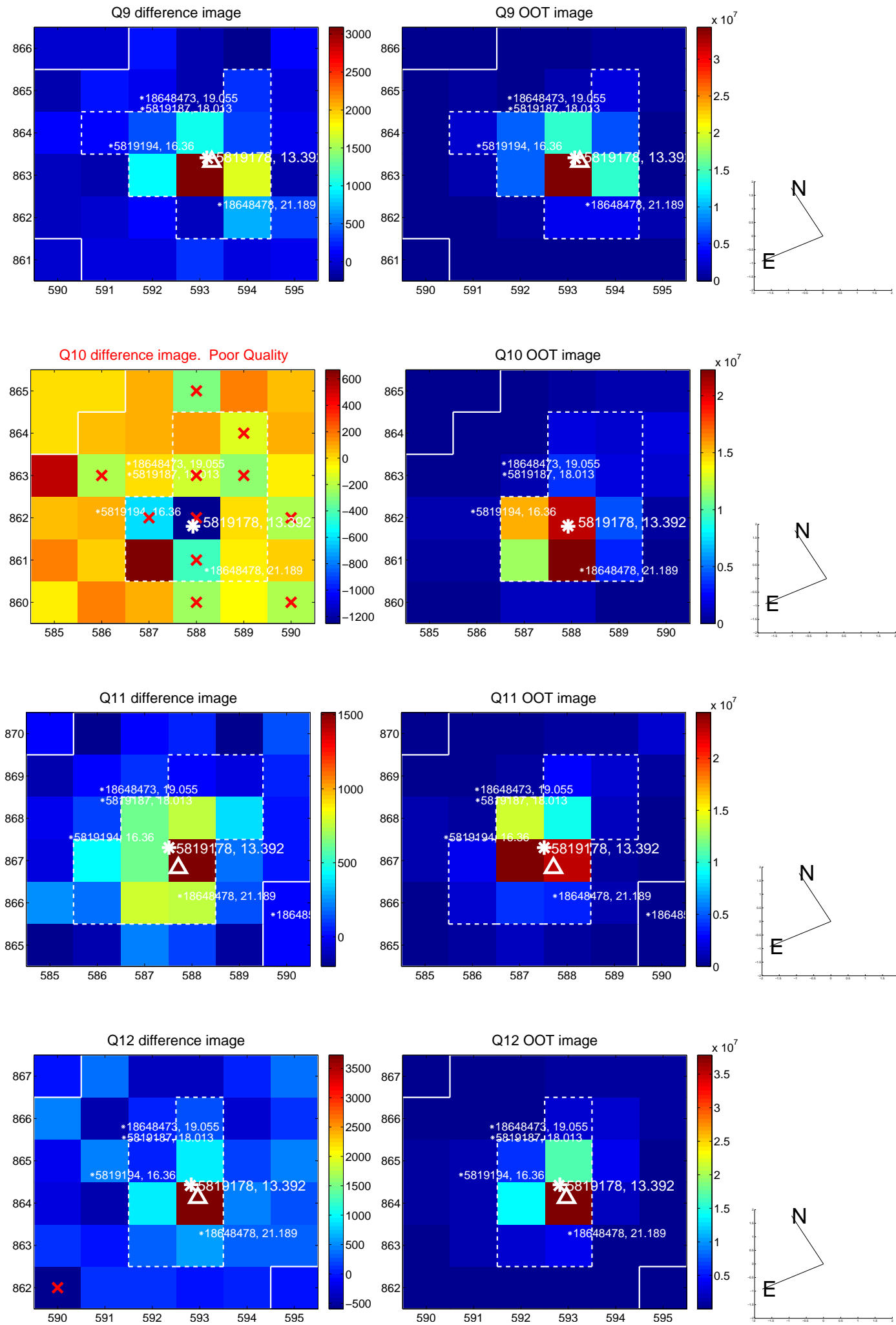
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



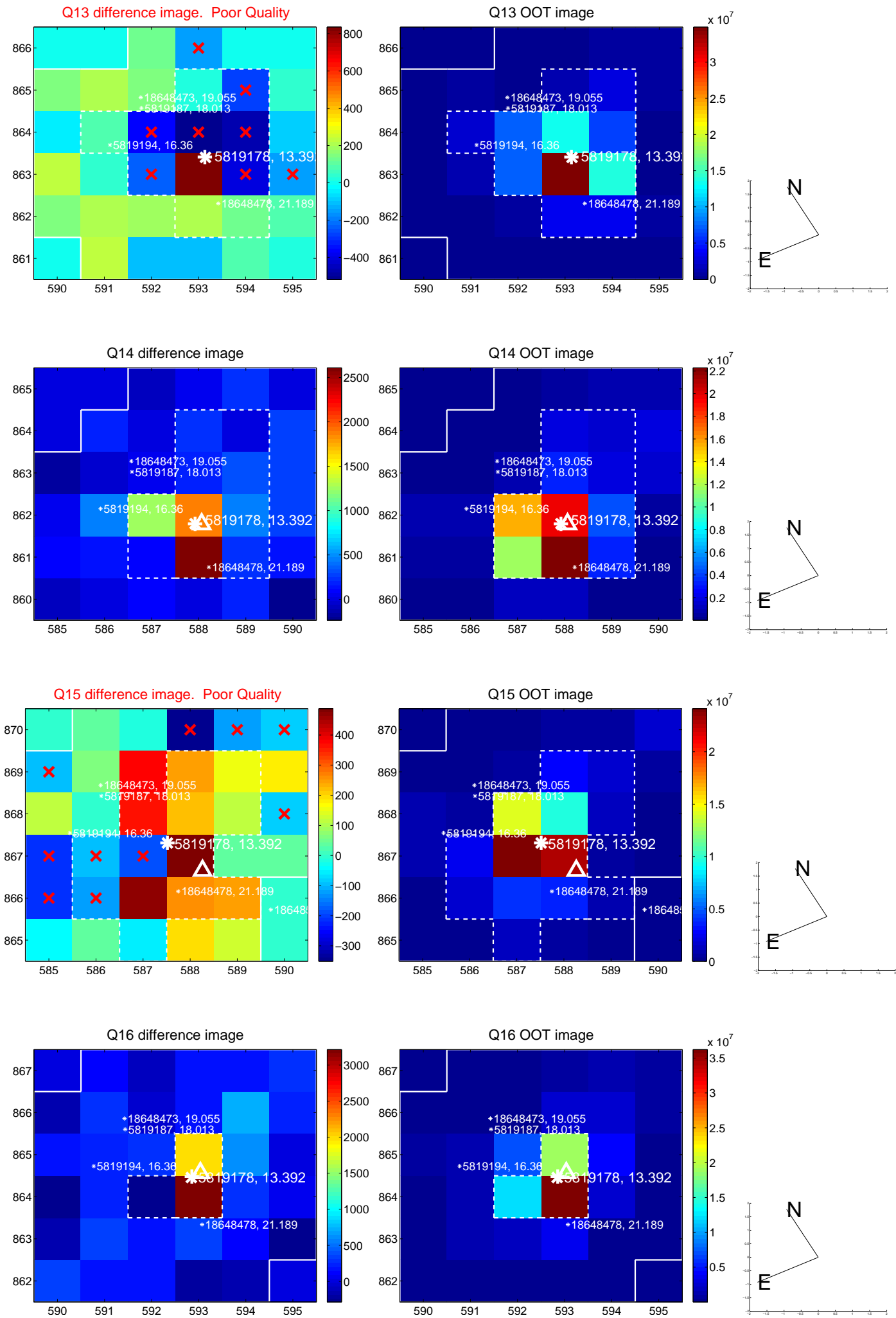
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



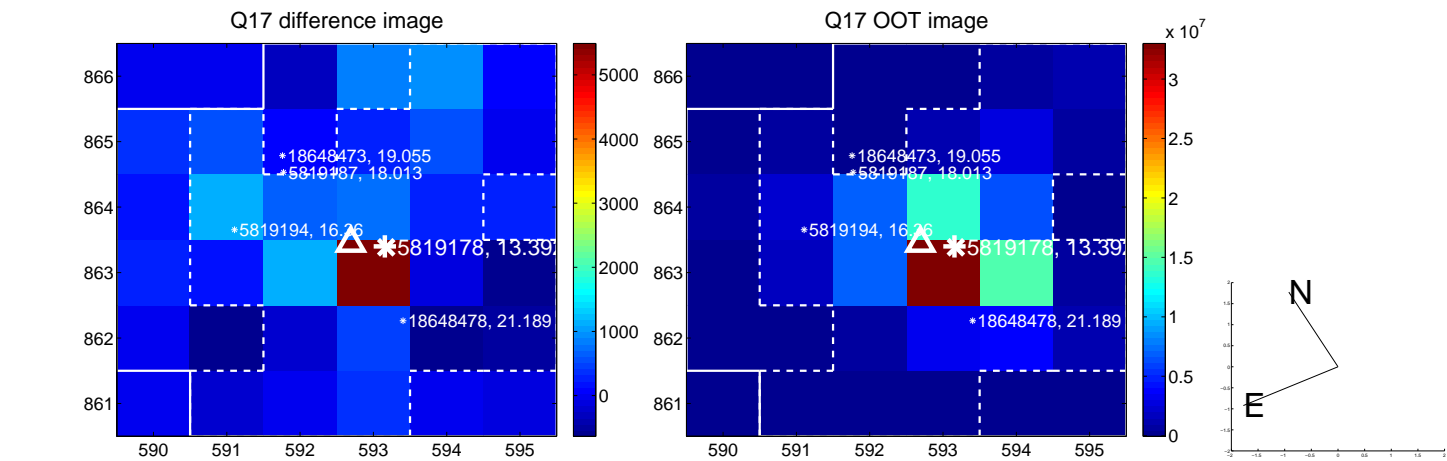
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



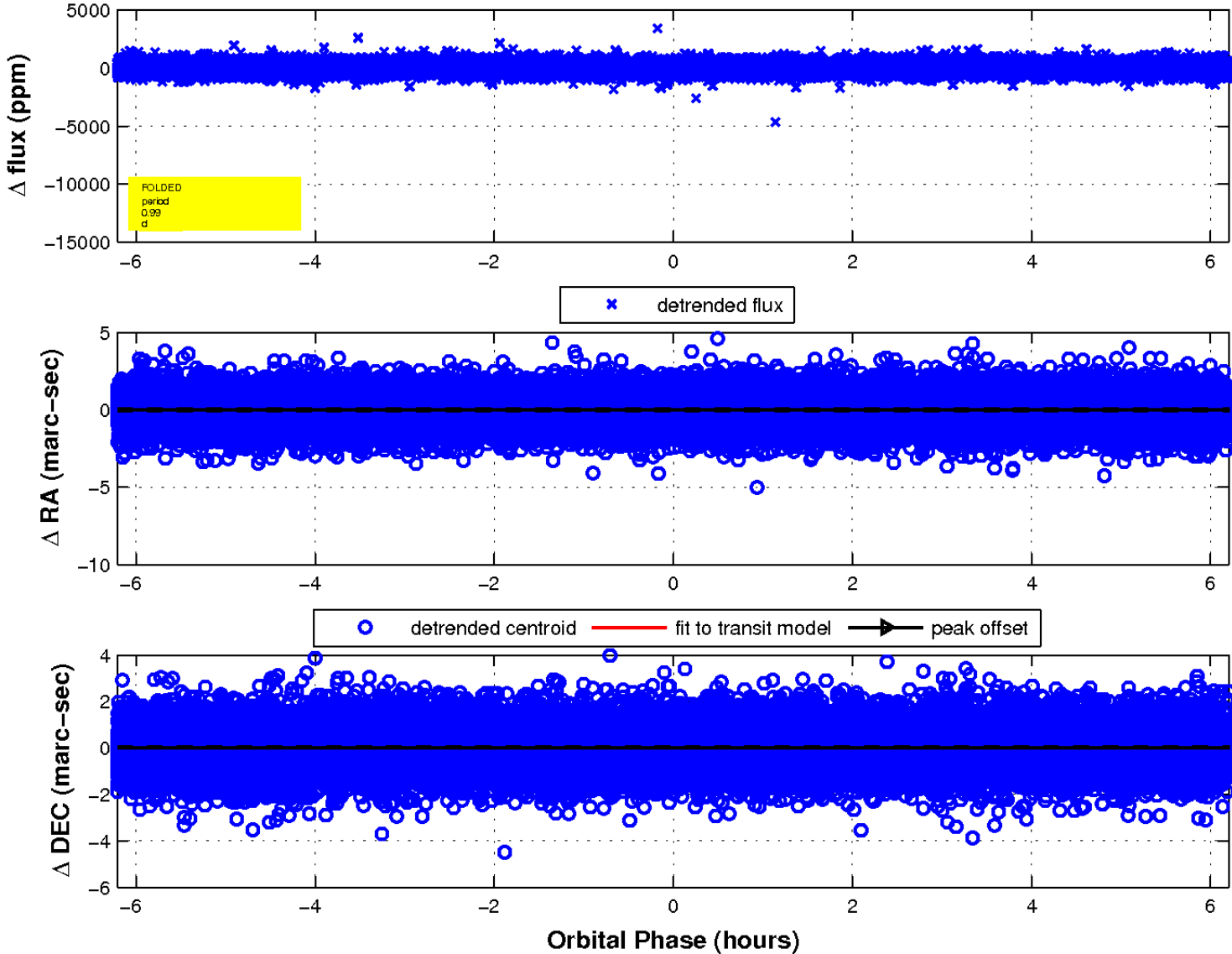
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

