

KIC 006187341

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})
006187341-01	OBS	4216.01	0.984591	132.386101	679.4	0.737	17.9	26.3	0.72	4971	2.33	960.31
006187341-02	OBS	No	0.984574	131.904616	672.1	0.764	16.9	27.9	0.72	4971	2.04	960.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006187341-01	OBS	PC	1.00	0	0	0	0	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE
006187341-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 006187341-01

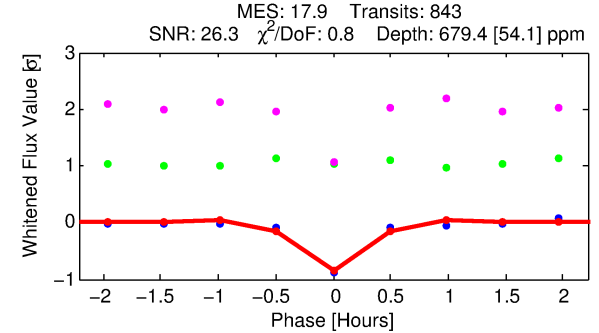
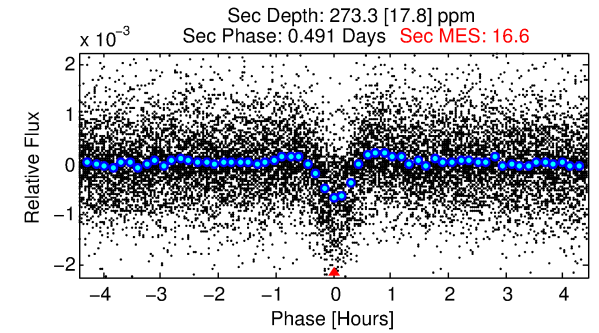
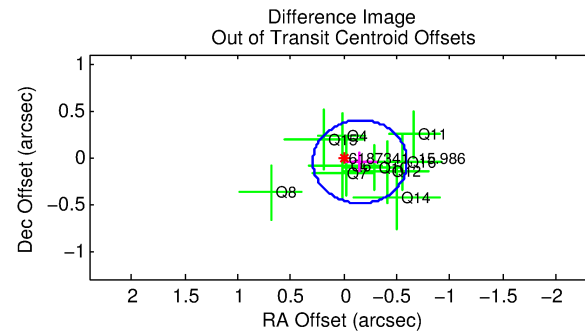
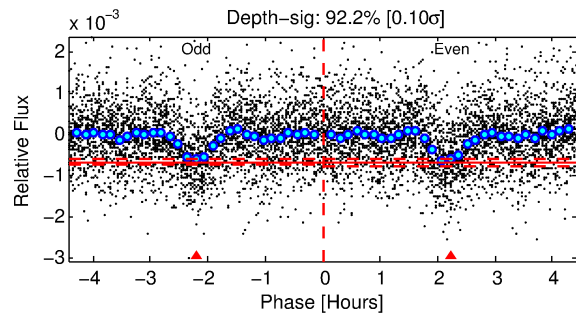
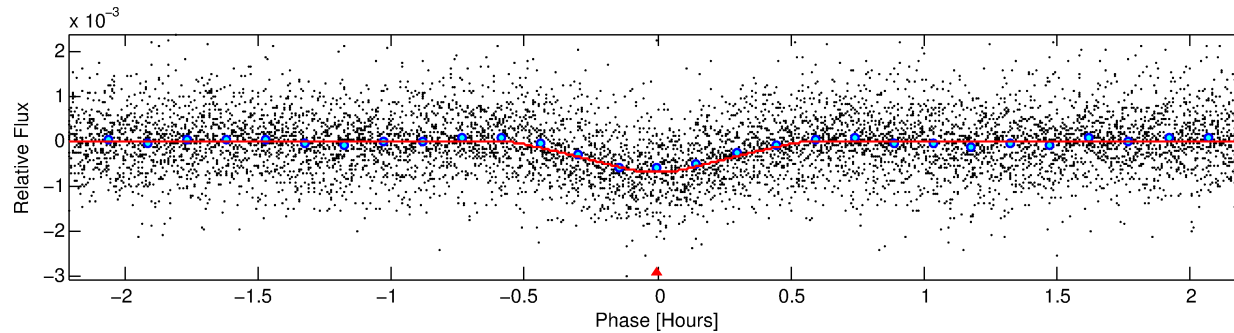
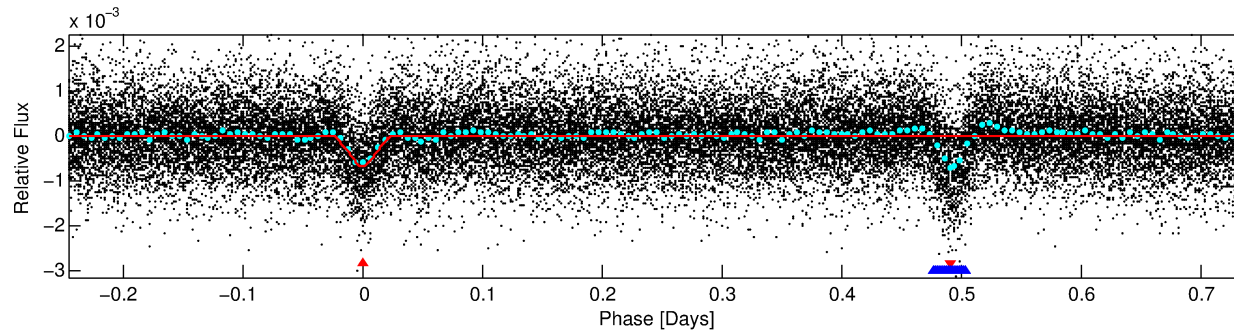
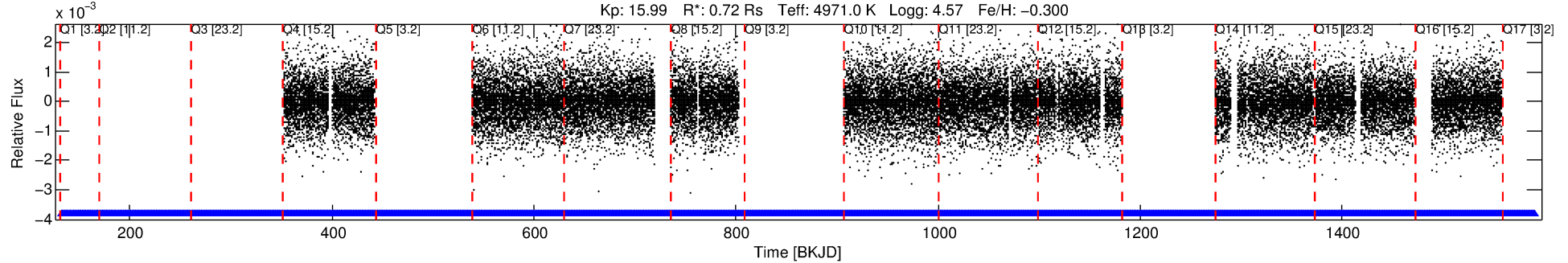
No Significant Match Found

DV One-Page Summary

KIC: 6187341 Candidate: 1 of 2 Period: 0.985 d

KOI: K04216.01 Corr: 0.866

Kp: 15.99 R*: 0.72 Rs Teff: 4971.0 K Logg: 4.57 Fe/H: -0.300



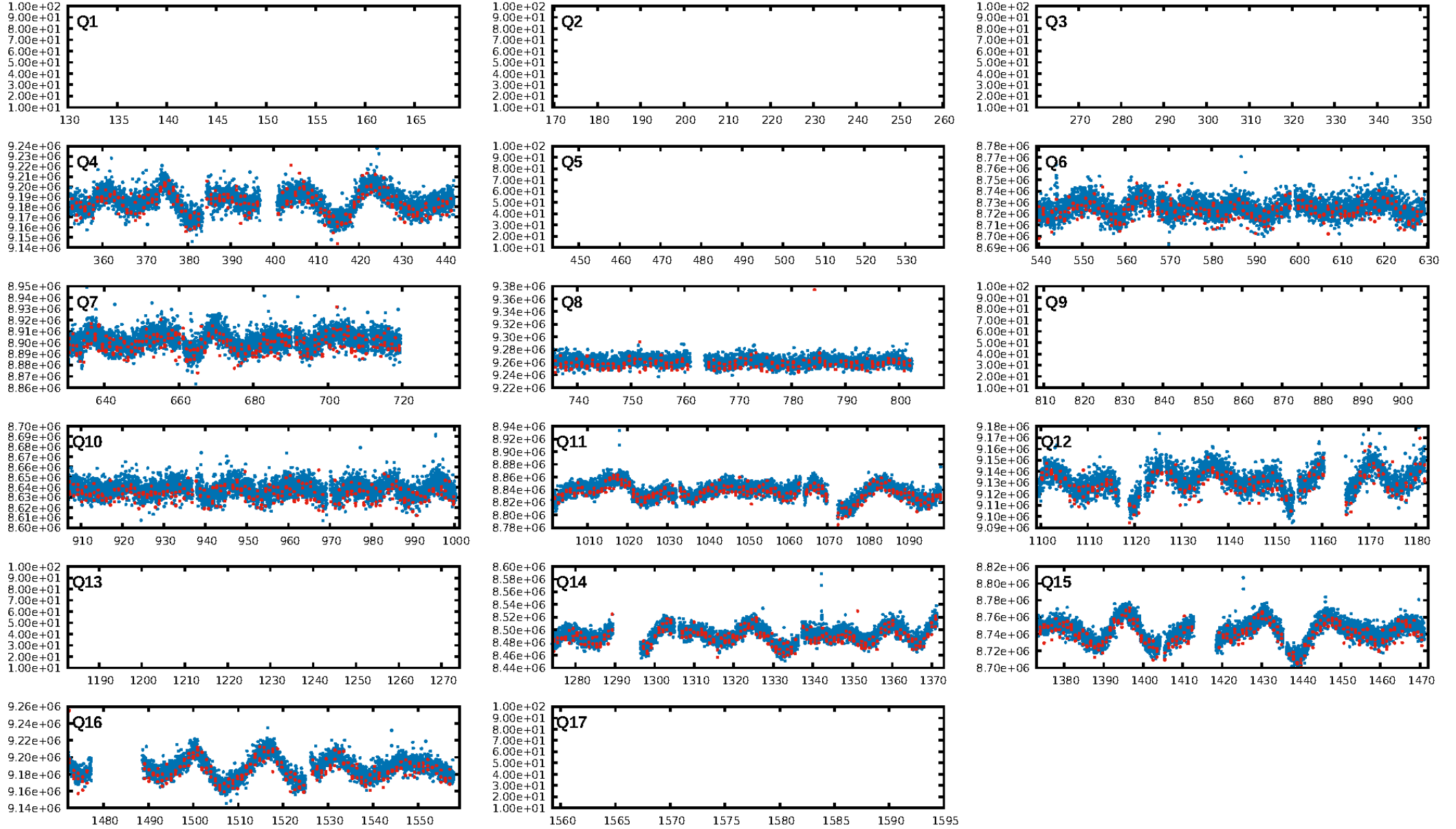
DV Fit Results:

Period = 0.98459 [0.00000] d
Epoch = 132.3861 [0.0005] BKJD
Rp/R* = 0.0298 [0.0091]
a/R* = 5.21 [5.73]
b = 0.90 [0.26]
Seff = 960.31 [184.07]
Teq = 1419 [68] K
Rp = 2.34 [0.75] Re
a = 0.0171 [0.0015] AU
Ag = 8.10 [5.10] [1.39σ]
Teffp = 3702 [585] K [3.87σ]

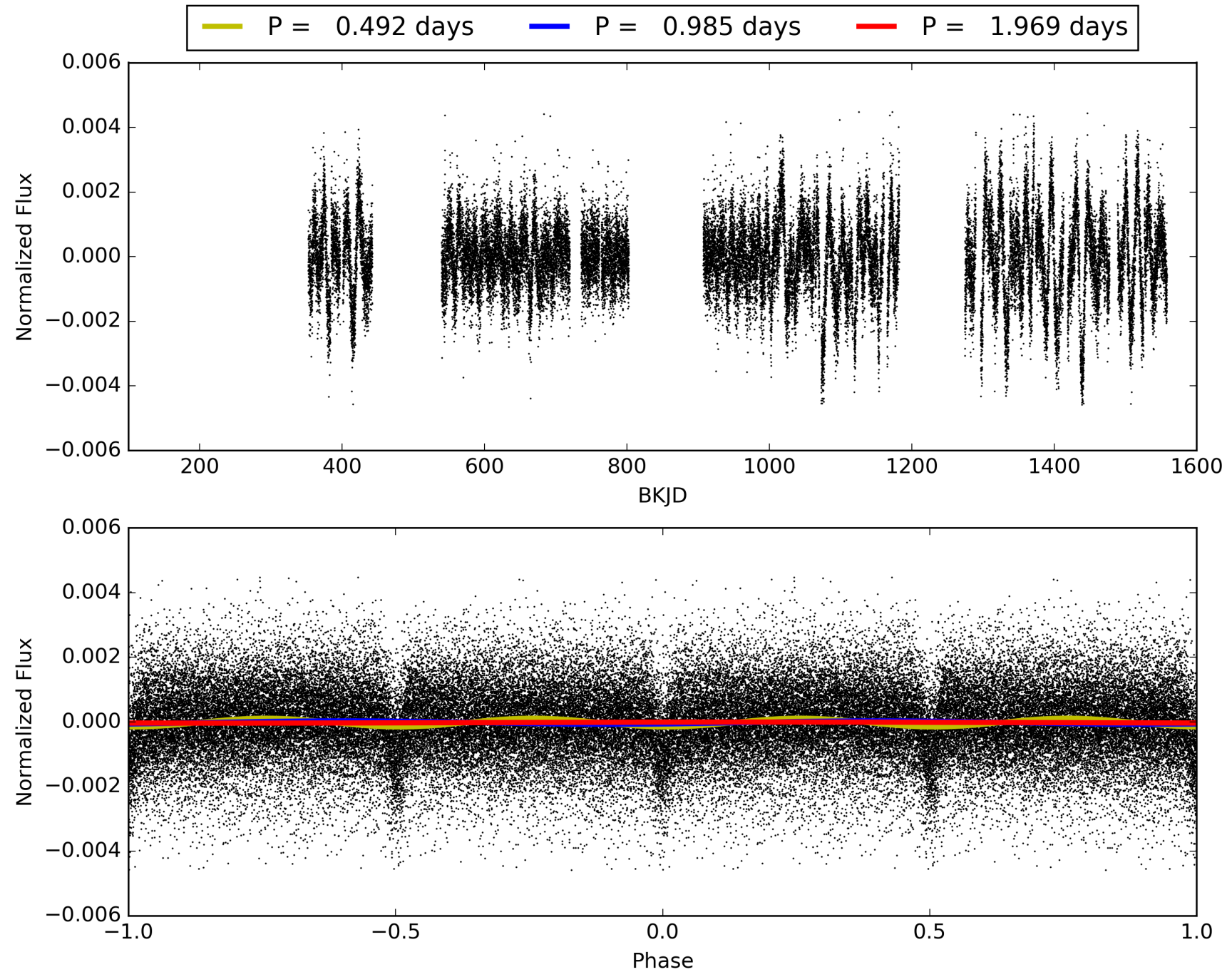
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.46e-67
RollingBand-fgt: 1.00 [843/843]
GhostDiagnostic-chr: 1.884
Centroid-sig: 12.4%
Centroid-so: 0.727 arcsec [1.38σ]
OotOffset-rm: 0.162 arcsec [1.09σ]
OotOffset-st: 3/3/4/0 [10]
KicOffset-rm: 0.188 arcsec [1.19σ]
KicOffset-st: 3/3/4/0 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [10/10]

TCE 006187341-01, PDC Light Curves

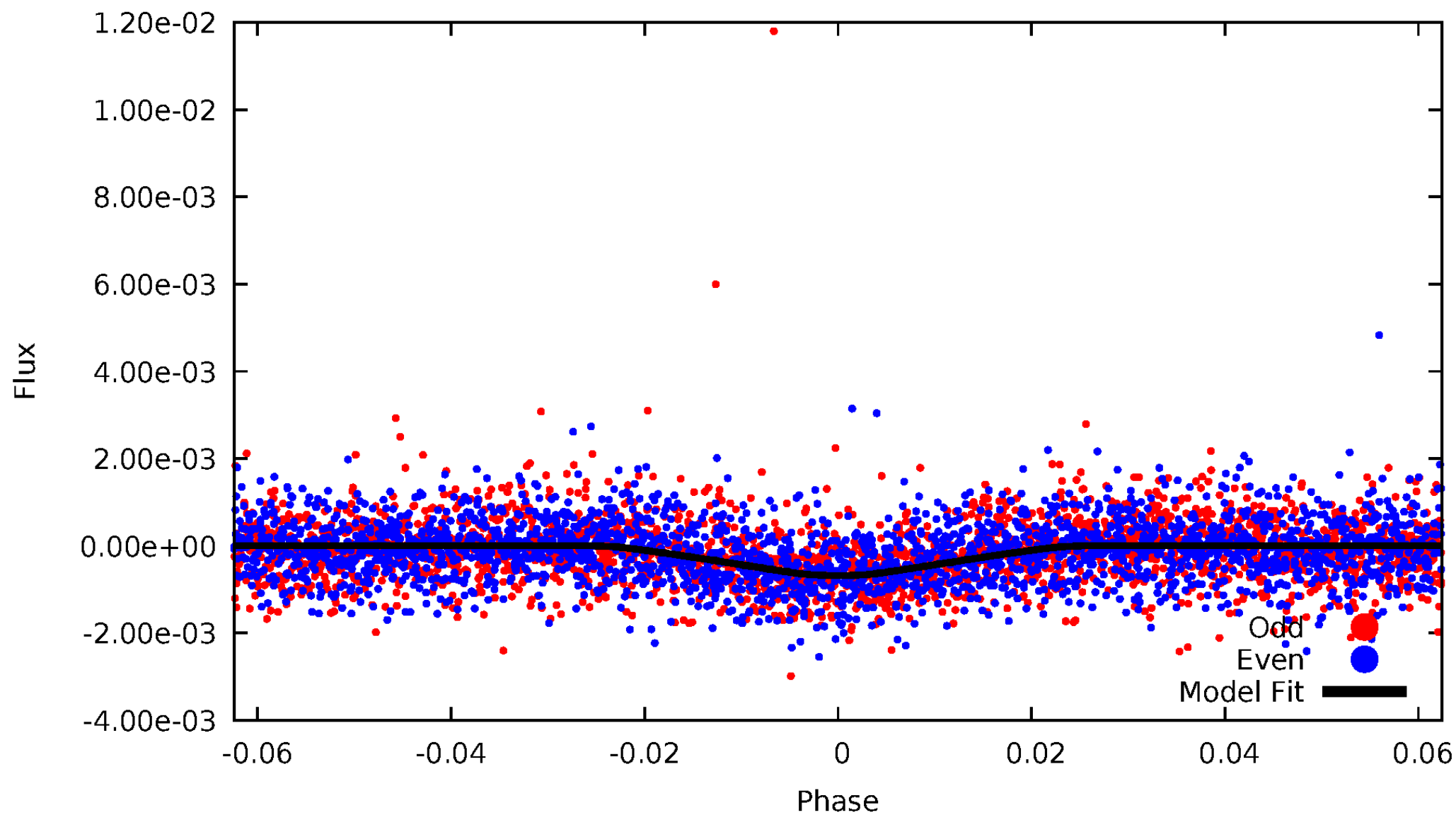


TCE 006187341-01



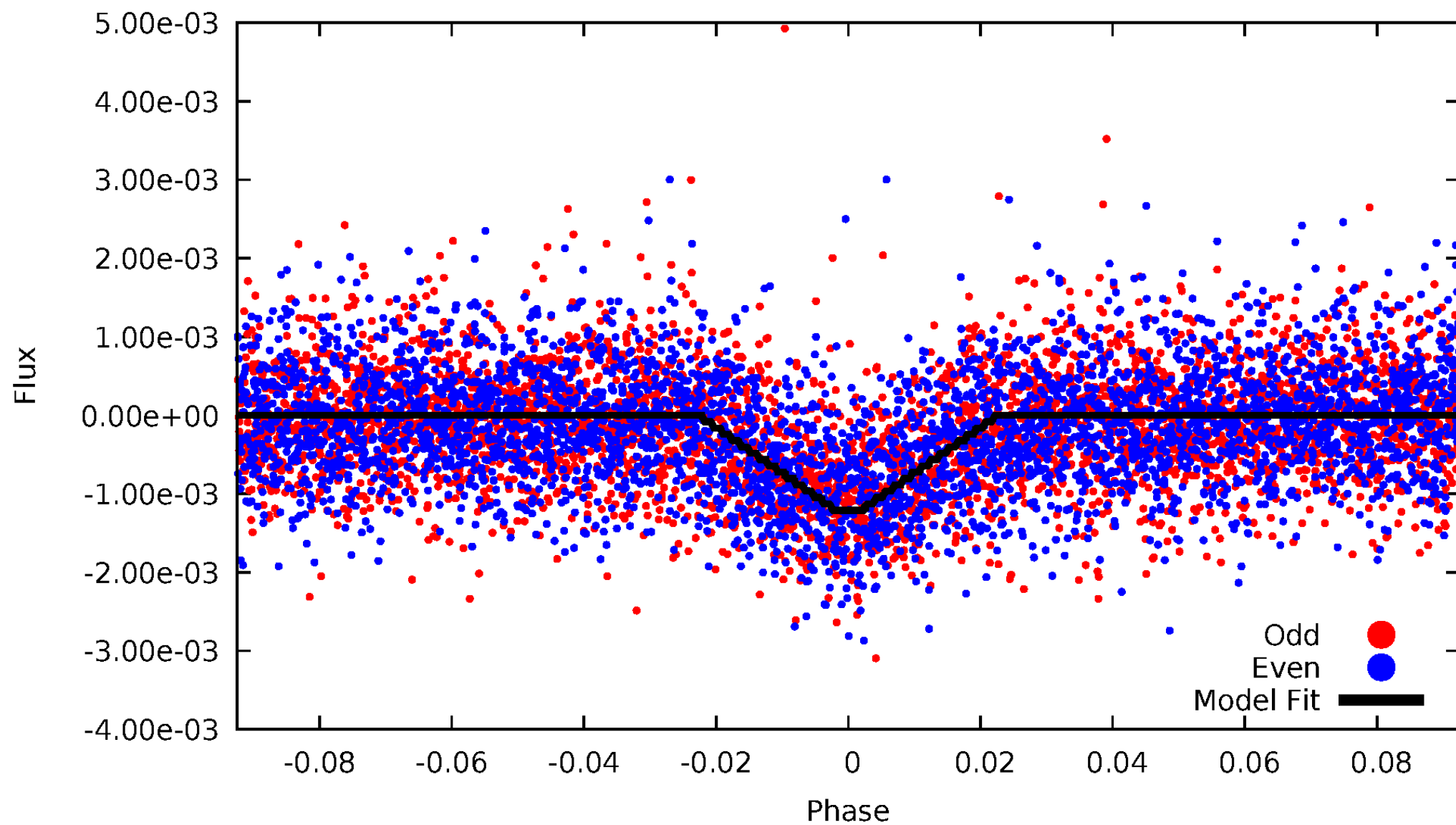
DV Odd/Even

TCE 006187341-01



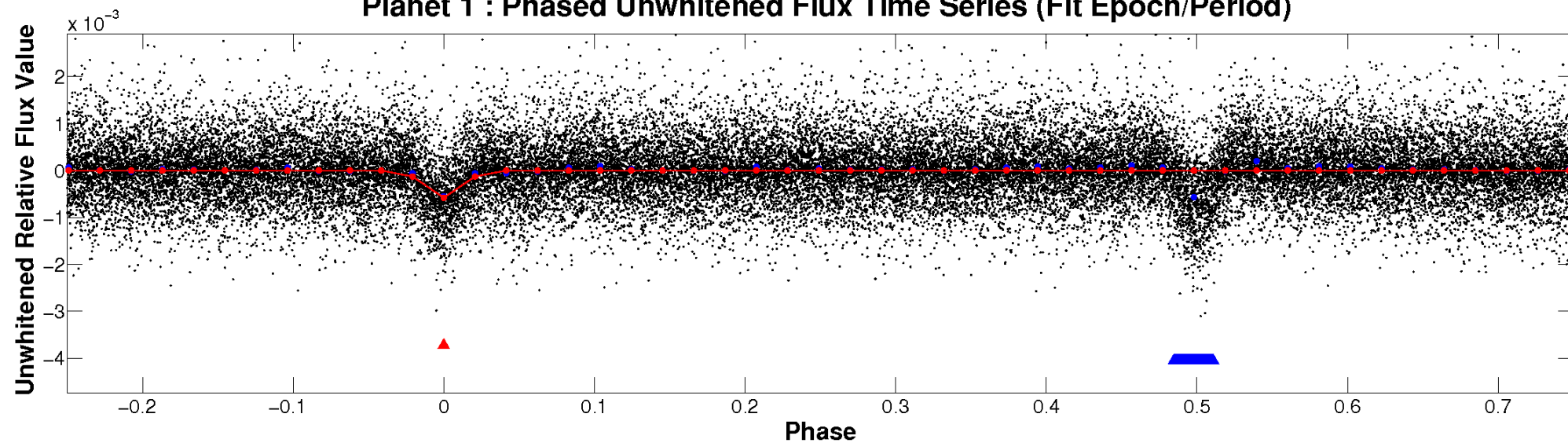
ALT Odd/Even

TCE 006187341-01

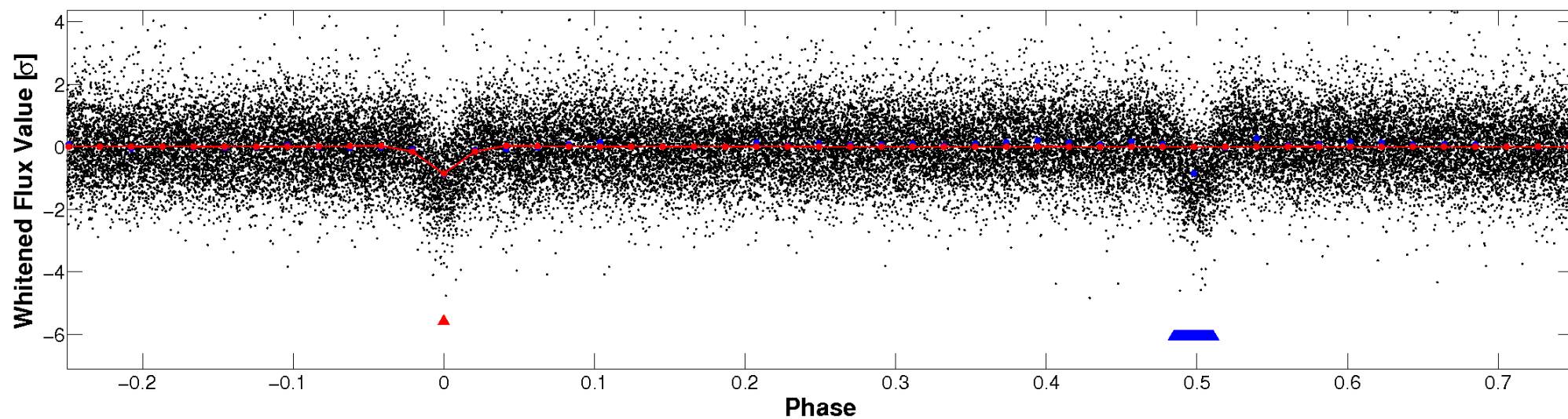


Non-Whitened Vs. Whitened Light Curve

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

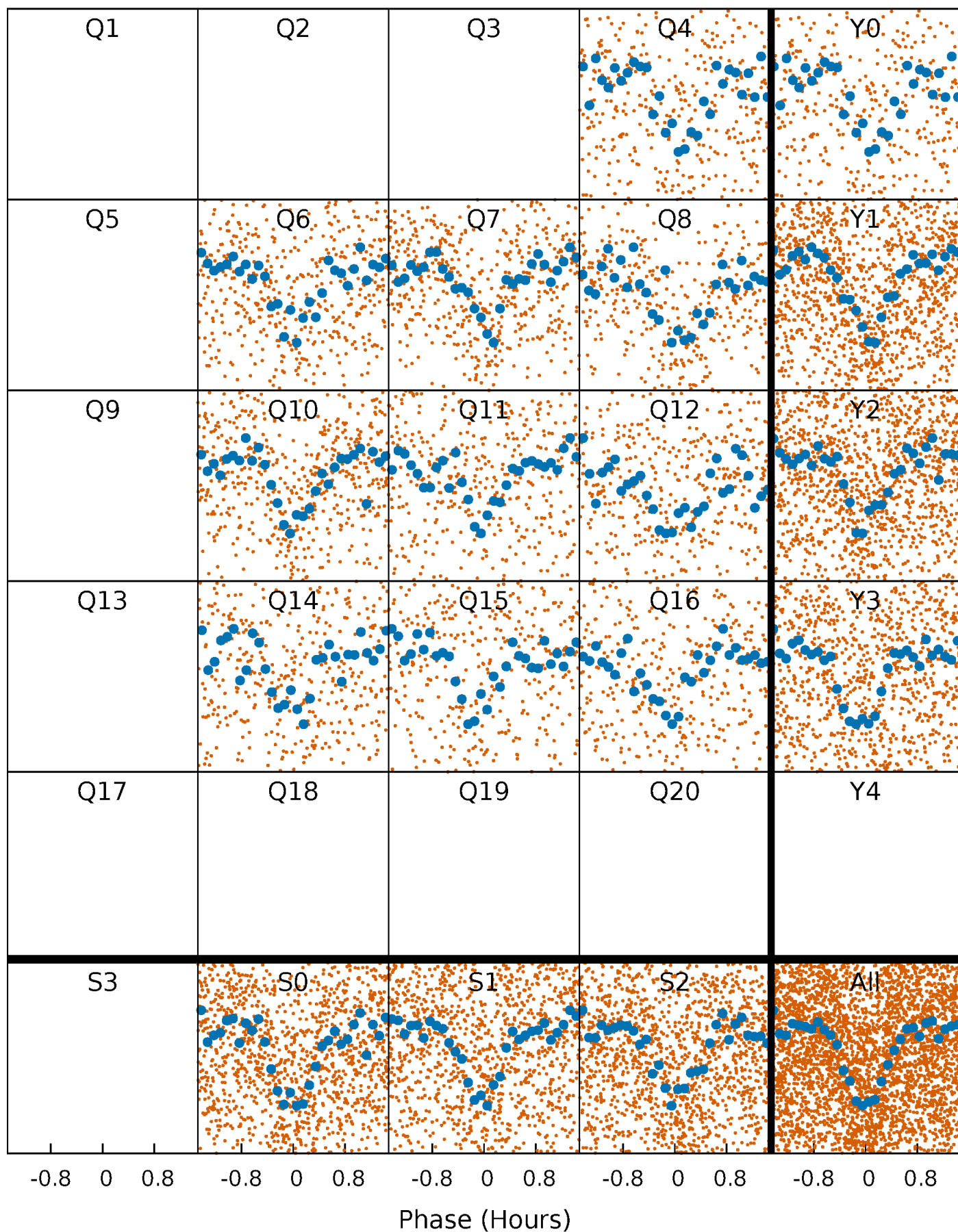


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



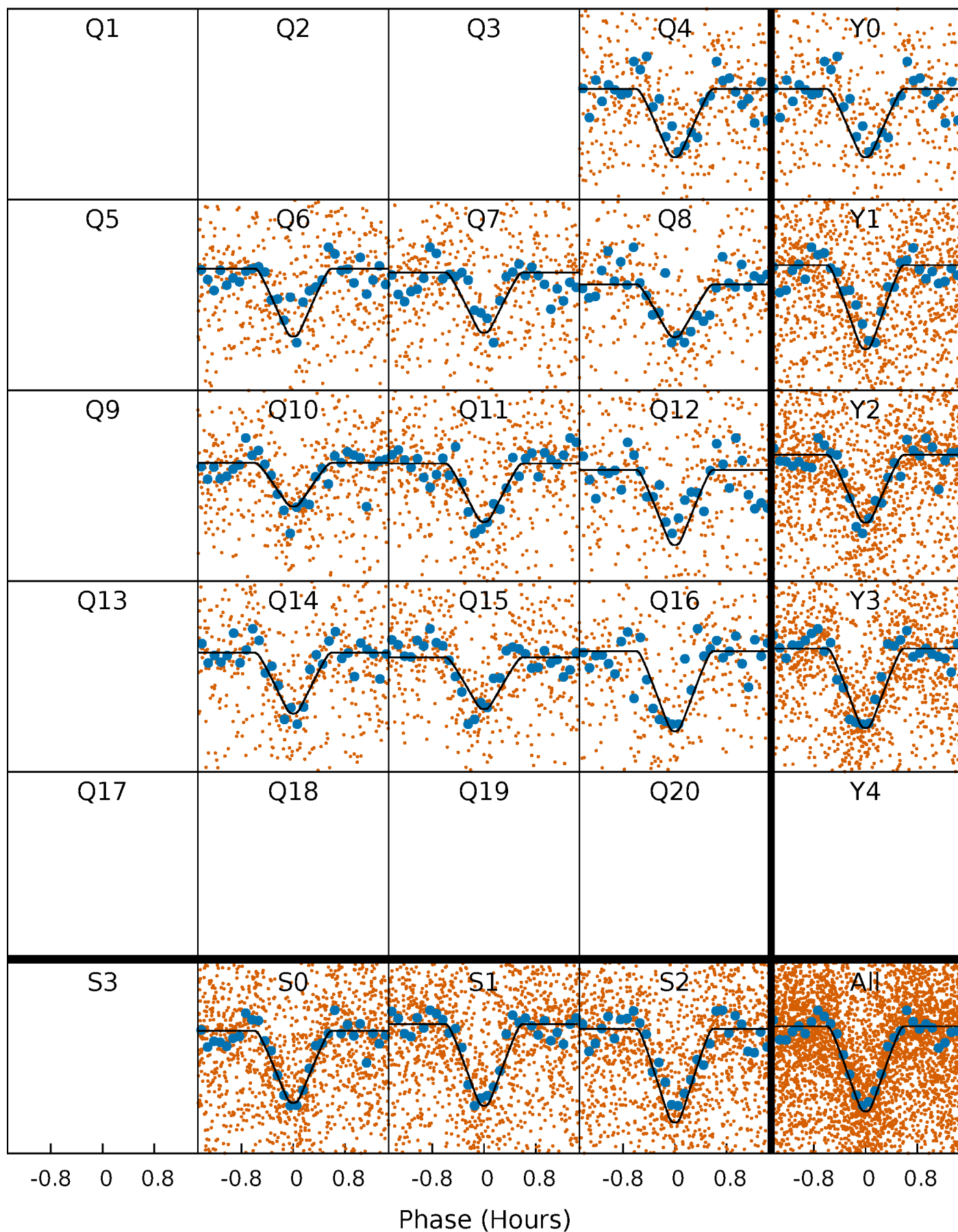
PDC Quarter-Phased Transit Curves

TCE 006187341-01 P= 0.984591 Days $T_0=132.386101$ (BKJD)



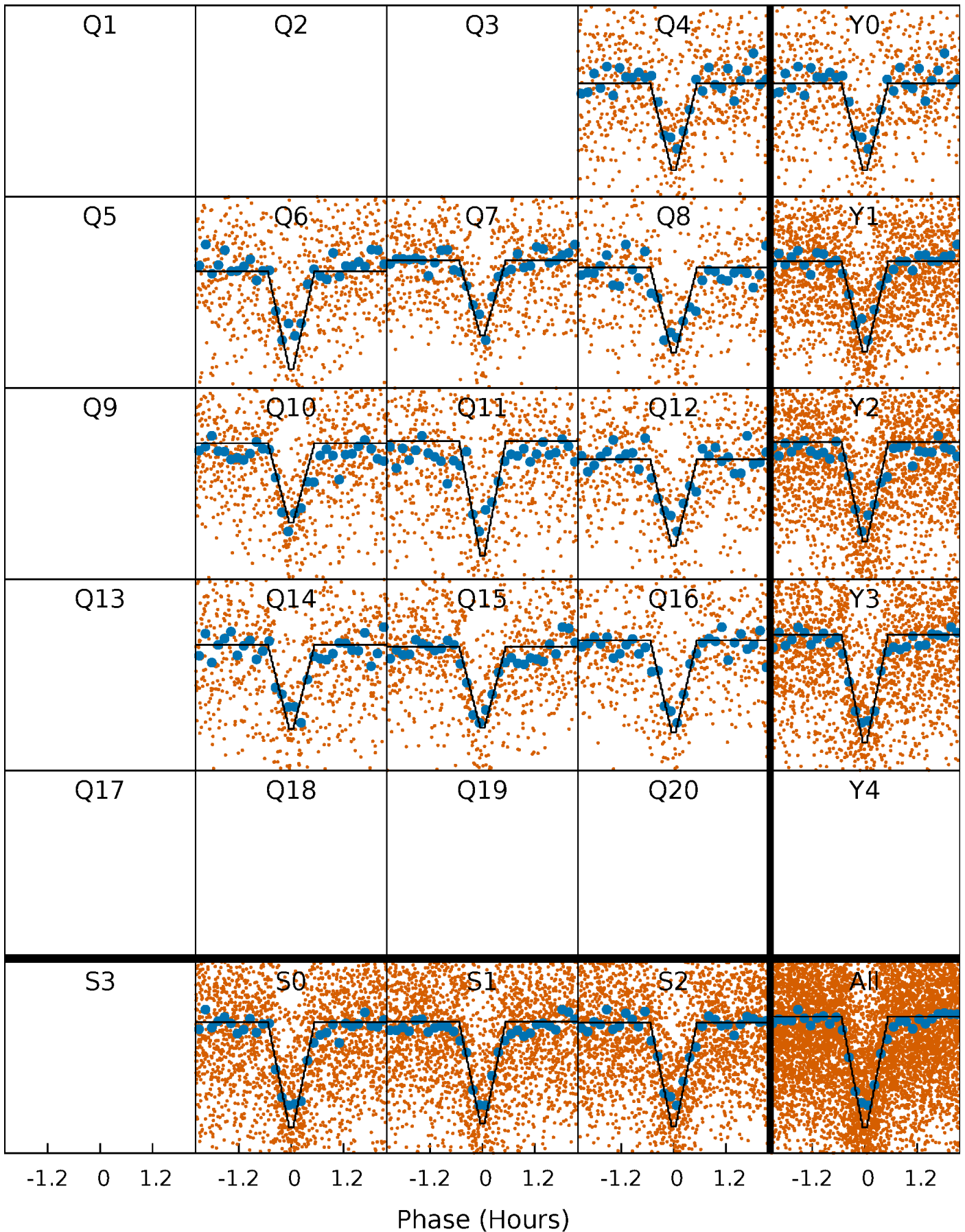
DV Quarter-Phased Transit Curves

TCE 006187341-01 P= 0.984591 Days $T_0=132.386101$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

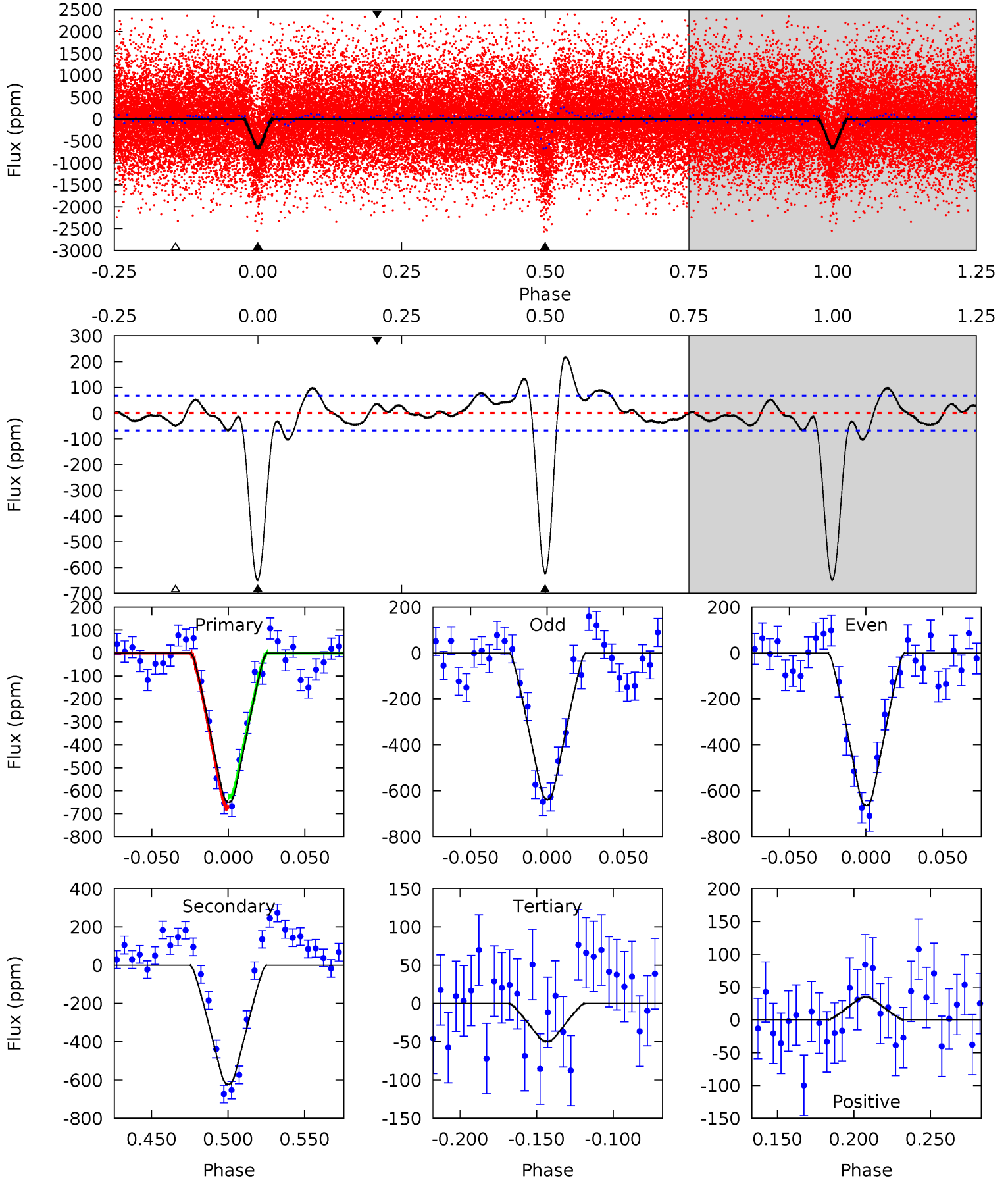
TCE 006187341-01 P= 0.984584 Days $T_0=132.392187$ (BKJD)



DV Model-Shift Uniqueness Test

006187341-01, P = 0.984591 Days, E = 132.386101 Days

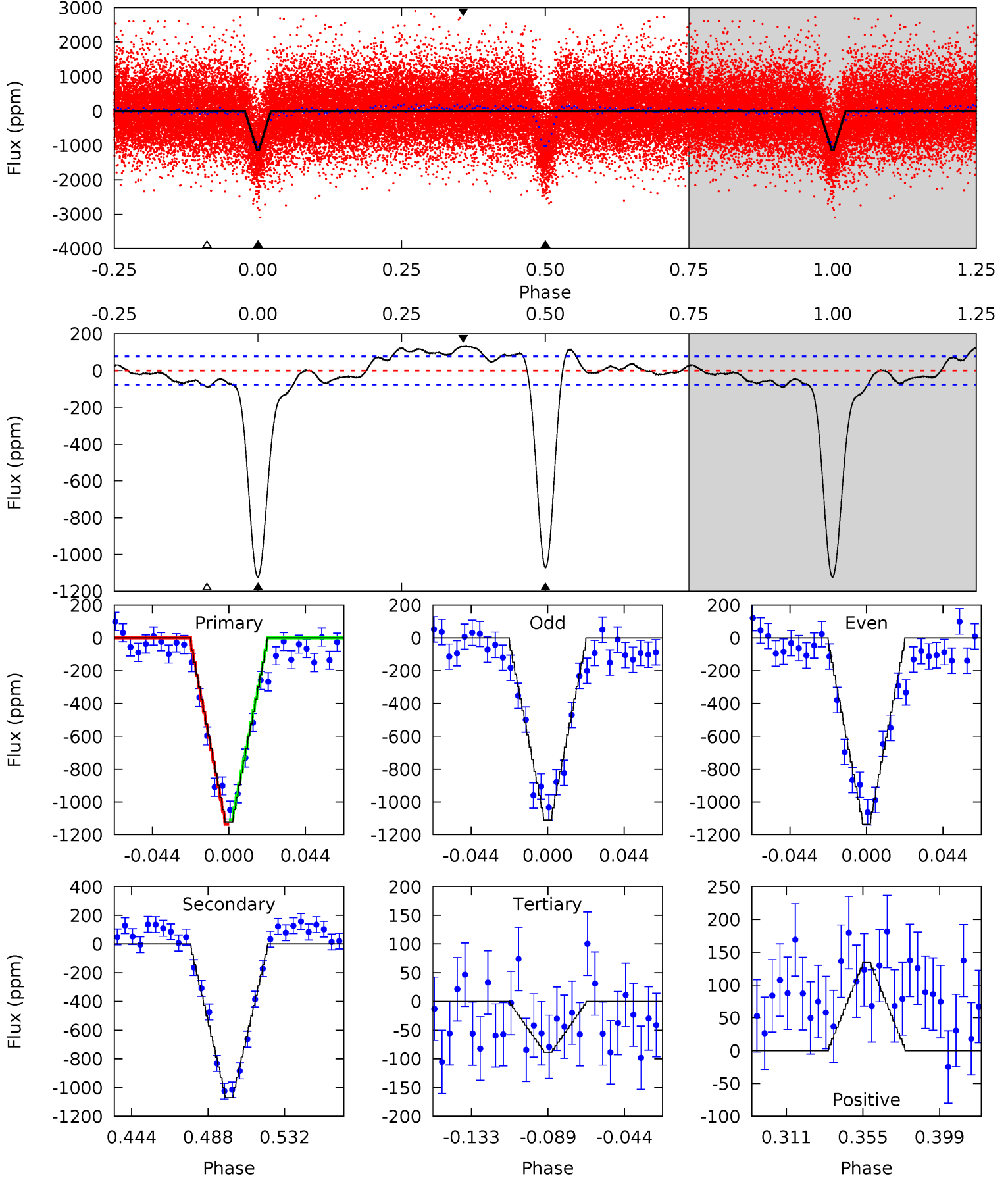
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.2	43.3	3.47	2.41	4.71	1.96	2.81	41.7	42.8	39.8	40.9	0.91	0.94	0.25	1.78



Alt Model-Shift Uniqueness Test

006187341-01, P = 0.984584 Days, E = 132.392187 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.7	66.6	5.51	8.34	4.73	2.01	3.93	64.2	61.4	61.0	58.2	0.80	1.01	0.11	0.88



Stellar Parameters For KIC 006187341

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4971^{+176}_{-176}	$4.566^{+0.072}_{-0.048}$	$-0.300^{+0.350}_{-0.300}$	$0.718^{+0.072}_{-0.072}$	$0.693^{+0.093}_{-0.050}$	$2.634^{+0.829}_{-0.438}$
	+4%/-4%	+2%/-1%	+117%/-100%	+10%/-10%	+13%/-7%	+31%/-17%
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 006187341-01 / KOI 4216.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-622 ± 14	$2.33^{+0.77}_{-0.77}$	1977^{+83}_{-88}	4603^{+844}_{-476}	19^{+24}_{-8}
Alt.	-1072 ± 16	$2.72^{+0.77}_{-0.73}$	1973^{+83}_{-84}	4830^{+776}_{-469}	24^{+21}_{-9}

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

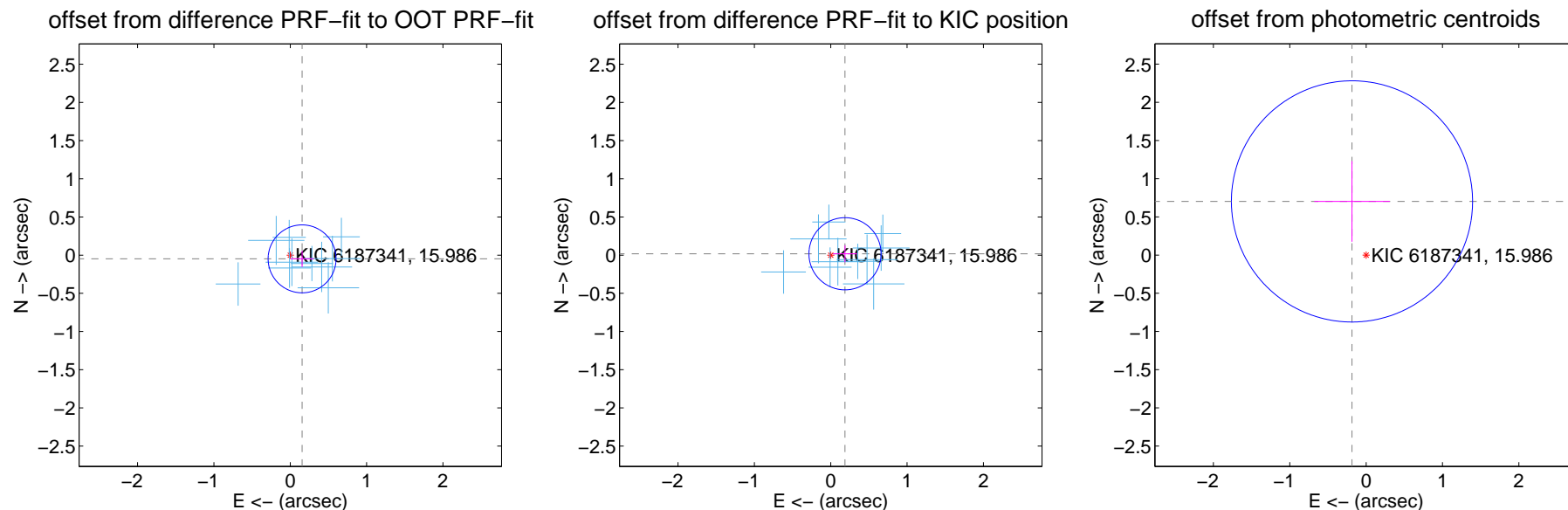
DV Centroid Data

Supplemental centroid analysis for 006187341-01. Kepler magnitude: 15.99. Transit SNR 26.31

There are 10 quarters with good PRF difference image offsets

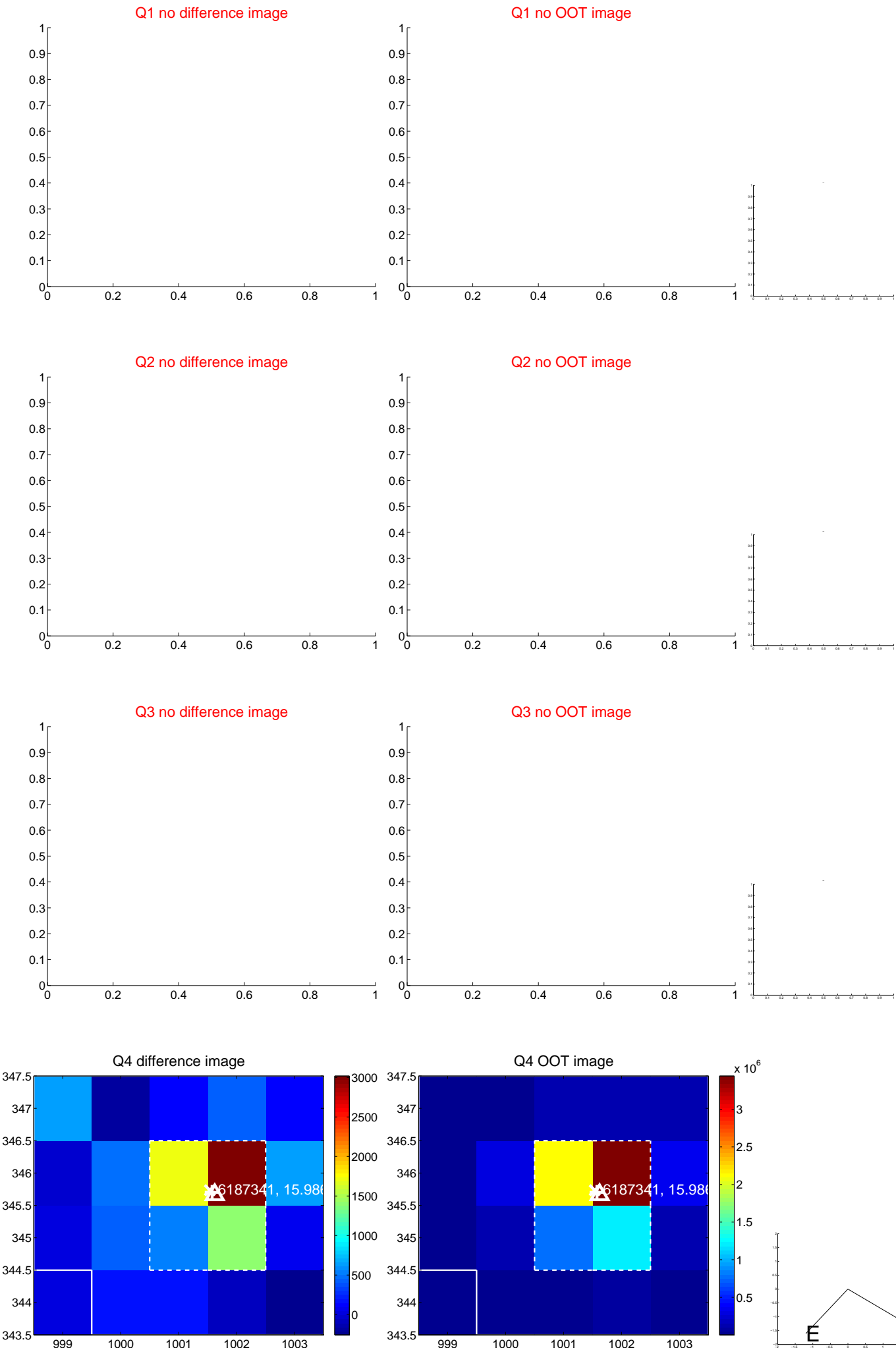
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.162 ± 0.148	1.09	-0.155 ± 0.152	-0.048 ± 0.107
PRF-fit source offset from KIC position	0.188 ± 0.157	1.19	-0.187 ± 0.158	0.018 ± 0.110
photometric centroid source offset	0.73 ± 0.53	1.38	0.19 ± 0.49	0.70 ± 0.53

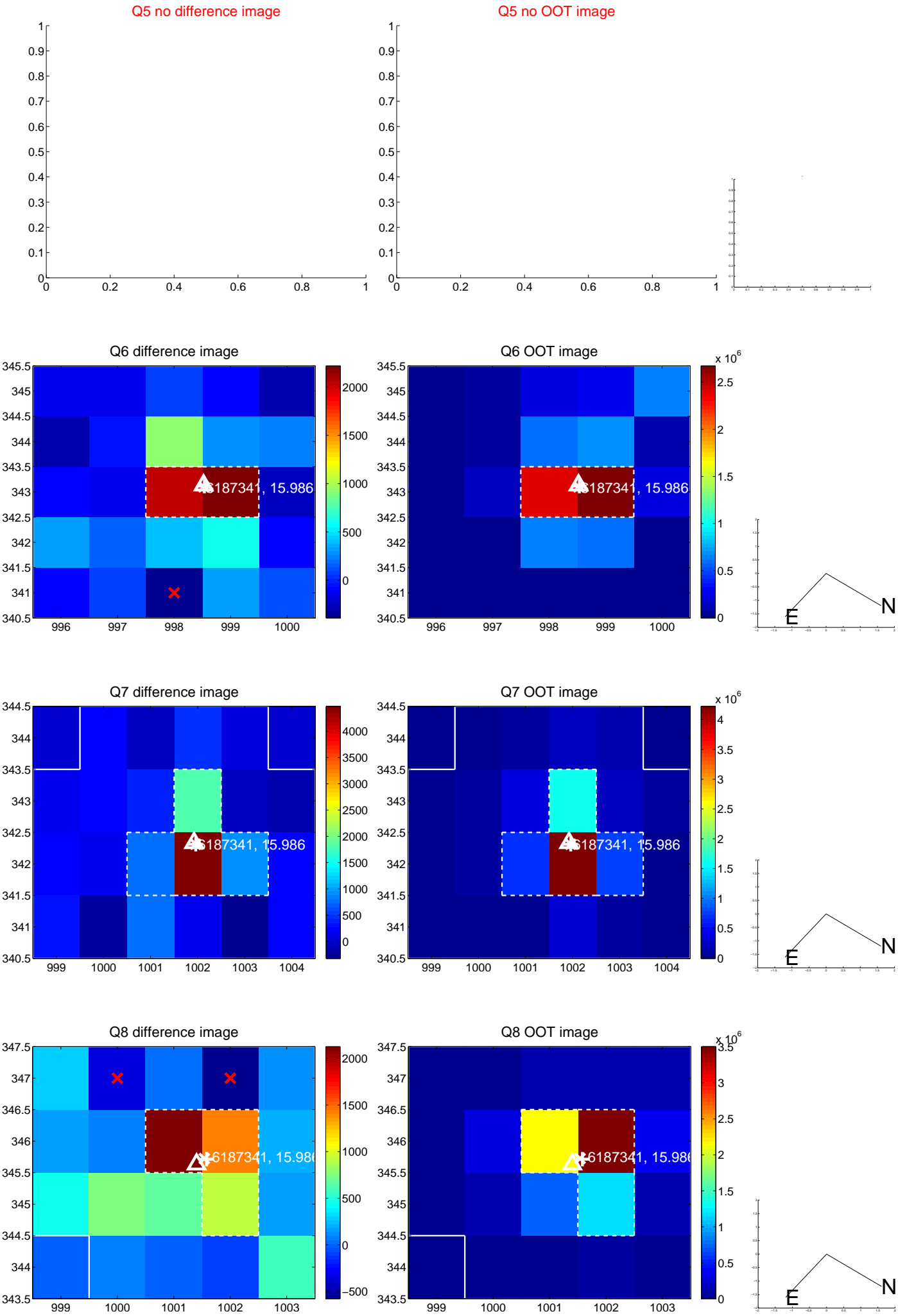


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

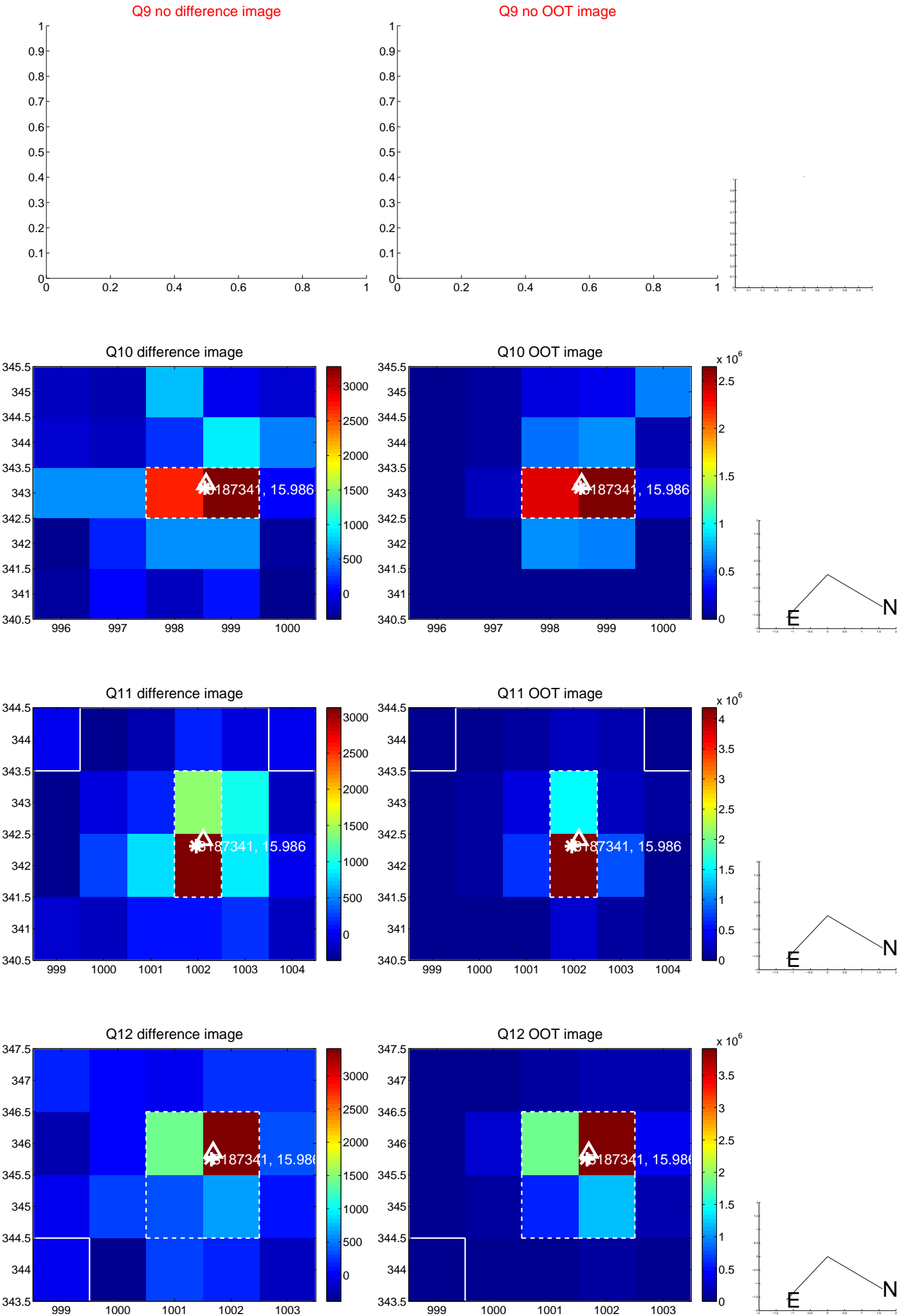
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



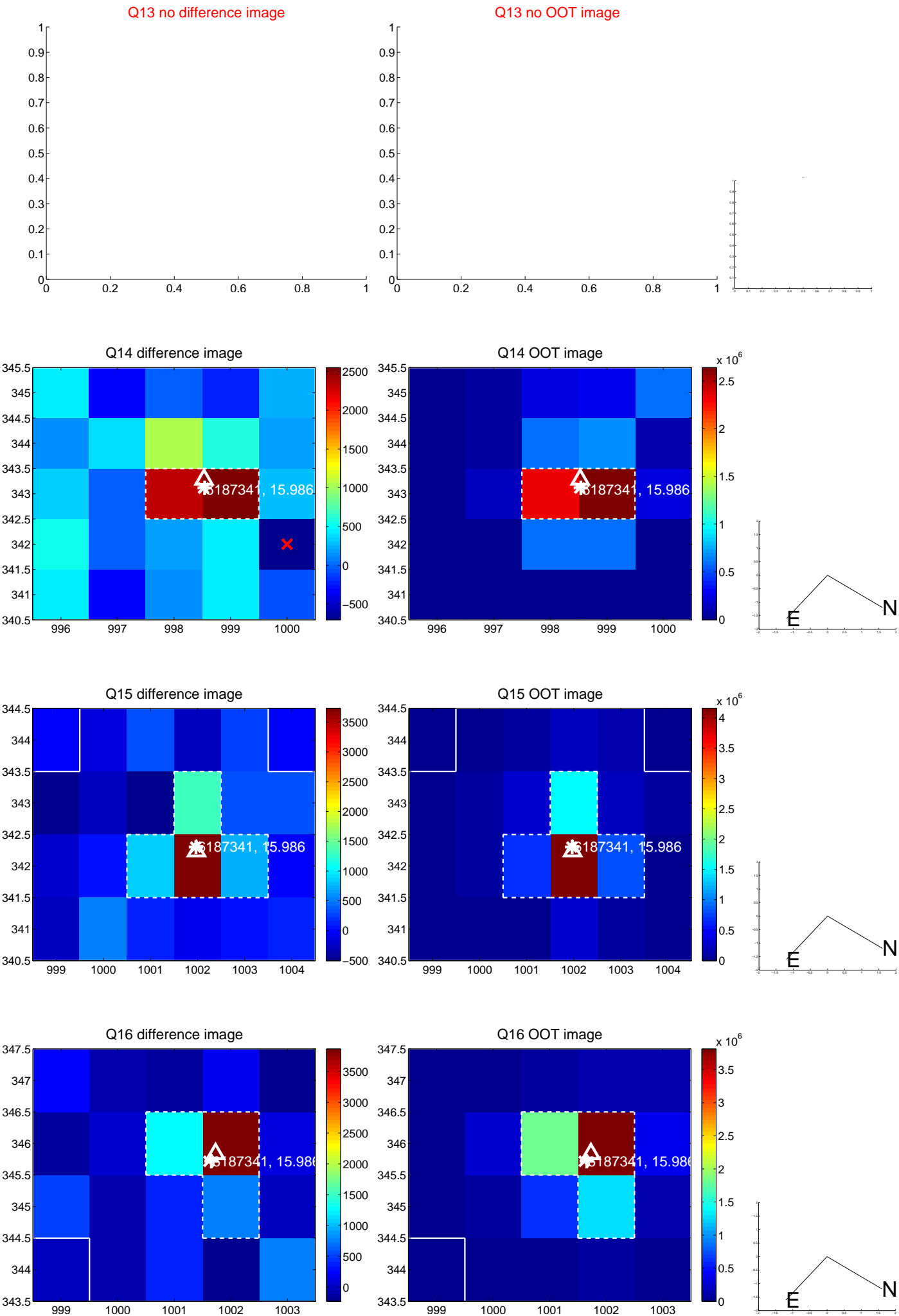
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



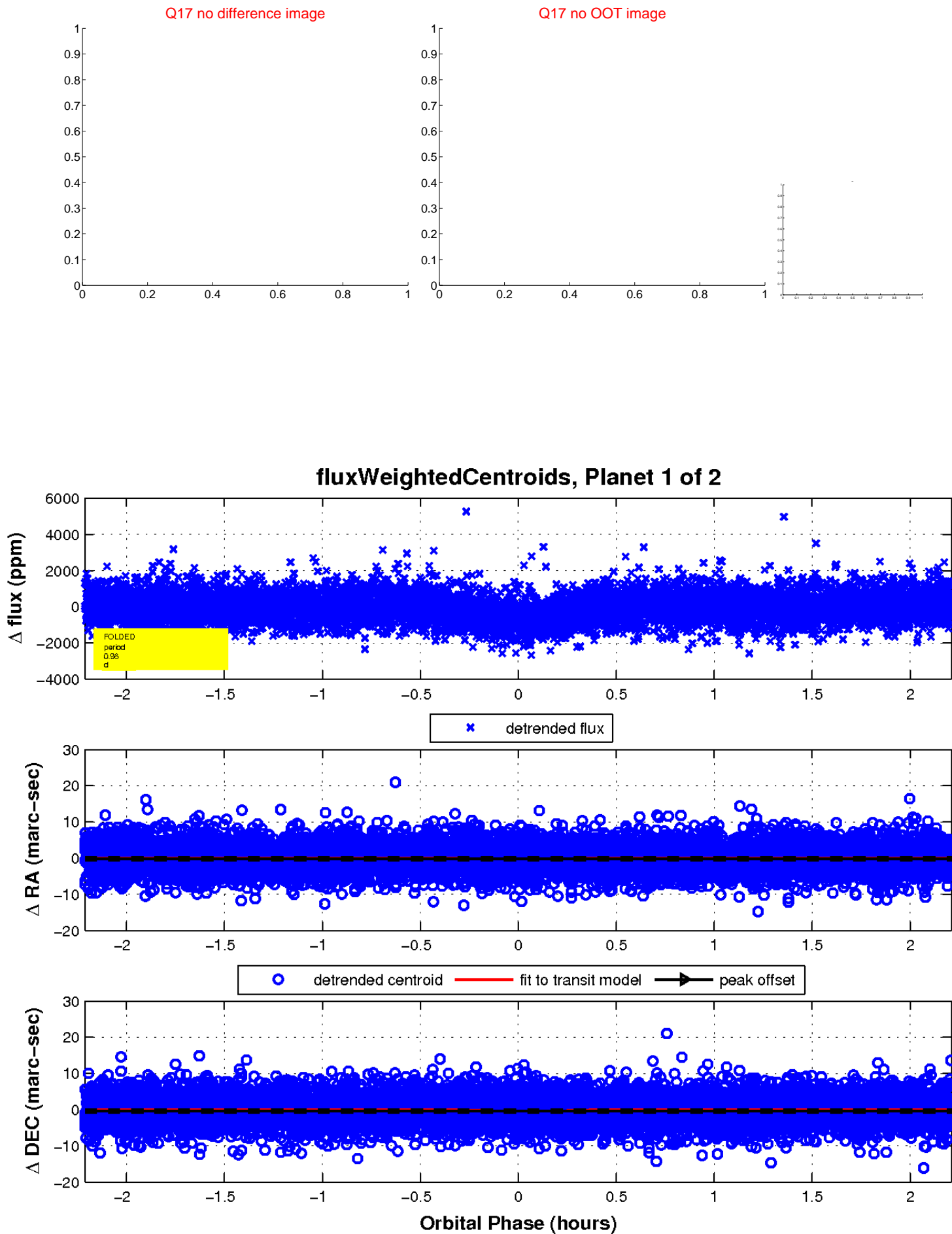
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

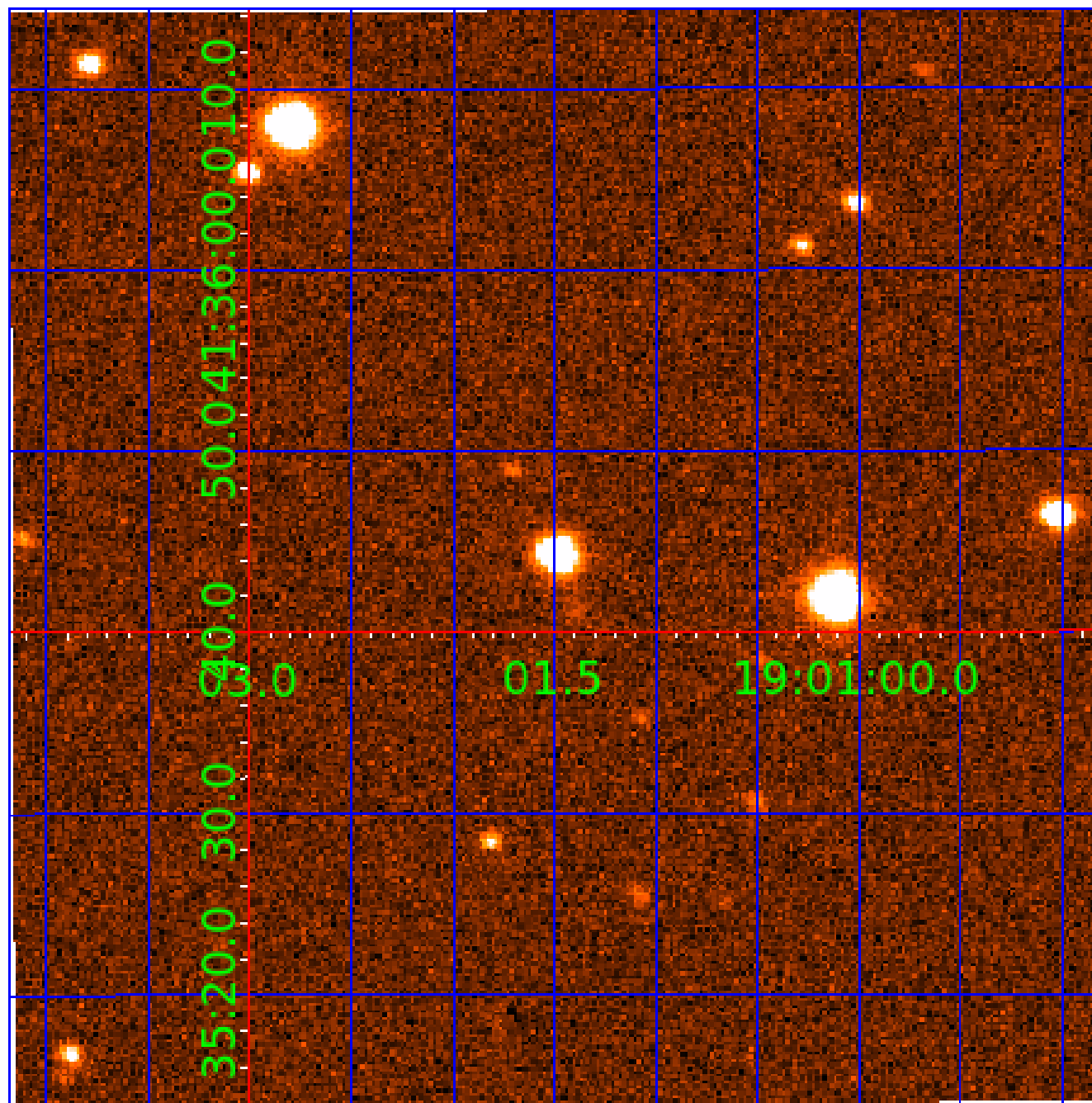


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006187341

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})
006187341-01	OBS	4216.01	0.984591	132.386101	679.4	0.737	17.9	26.3	0.72	4971	2.33	960.31
006187341-02	OBS	No	0.984574	131.904616	672.1	0.764	16.9	27.9	0.72	4971	2.04	960.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006187341-01	OBS	PC	1.00	0	0	0	0	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE
006187341-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

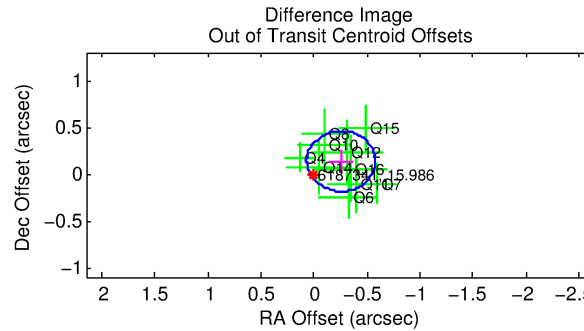
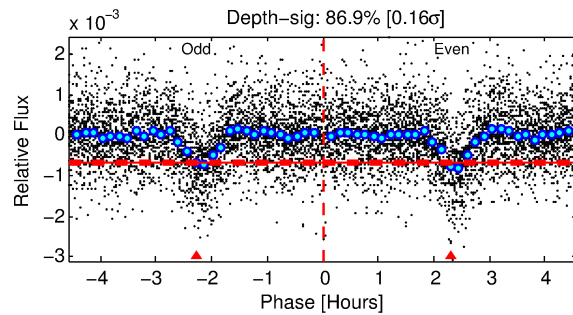
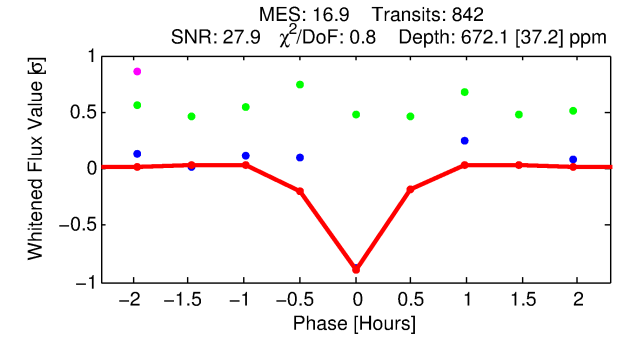
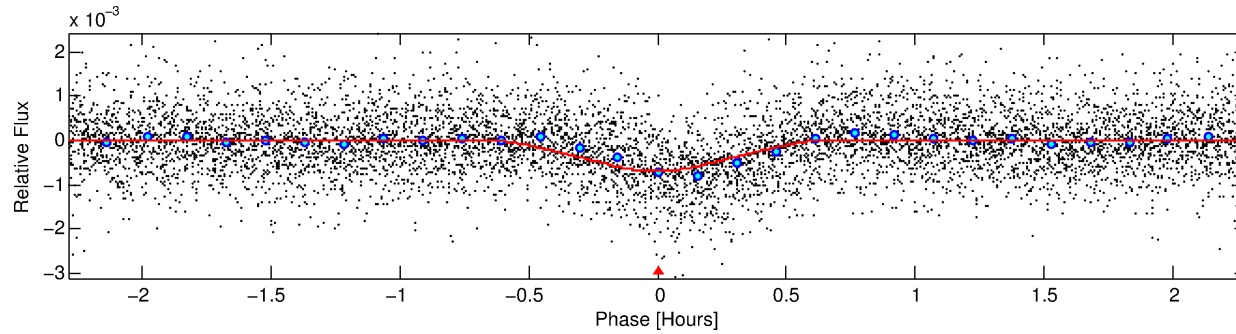
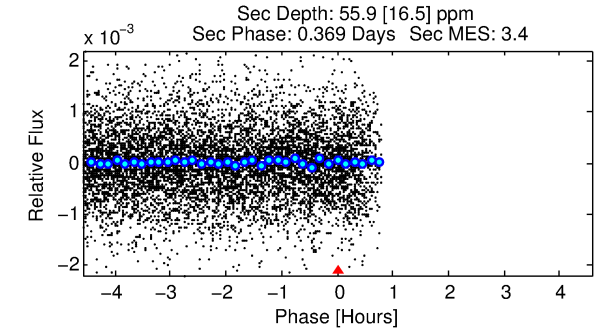
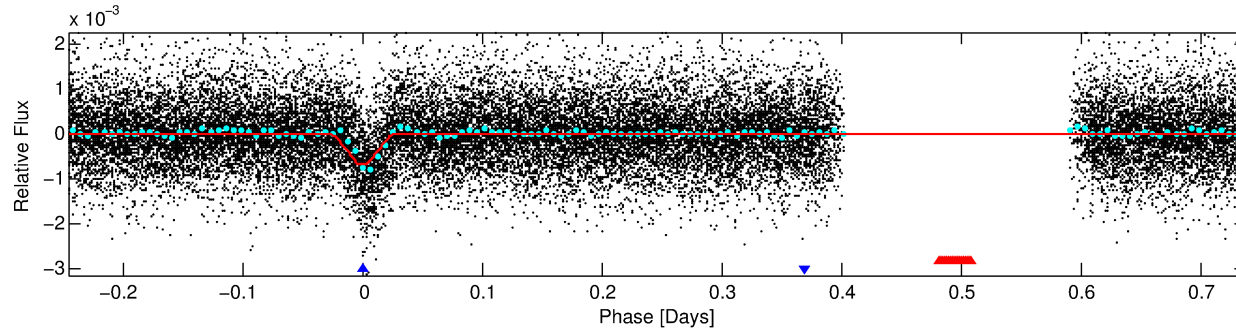
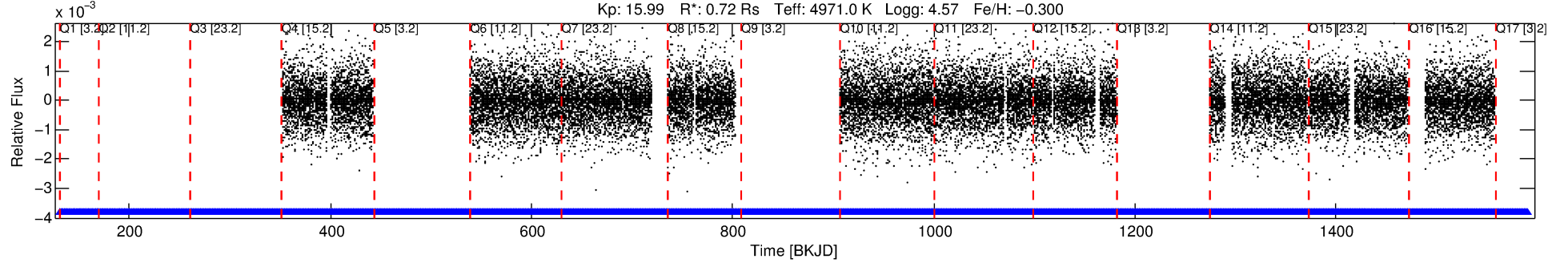
Ephemeris Match Information For 006187341-02

No Significant Match Found

DV One-Page Summary

KIC: 6187341 Candidate: 2 of 2 Period: 0.985 d
KOI: K04216 Corr: No Ephemeris Match

Kp: 15.99 R*: 0.72 Rs Teff: 4971.0 K Logg: 4.57 Fe/H: -0.300



DV Fit Results:

Period = 0.98457 [0.00000] d
Epoch = 131.9046 [0.0005] BKJD
Rp/R* = 0.0260 [0.0070]
a/R* = 7.35 [6.89]
b = 0.71 [0.69]
Seff = 960.33 [184.08]
Teq = 1419 [68] K
Rp = 2.04 [0.59] Re
a = 0.0171 [0.0015] AU
Ag = 2.17 [1.37] [0.86σ]
Teffp = 2665 [421] K [2.92σ]

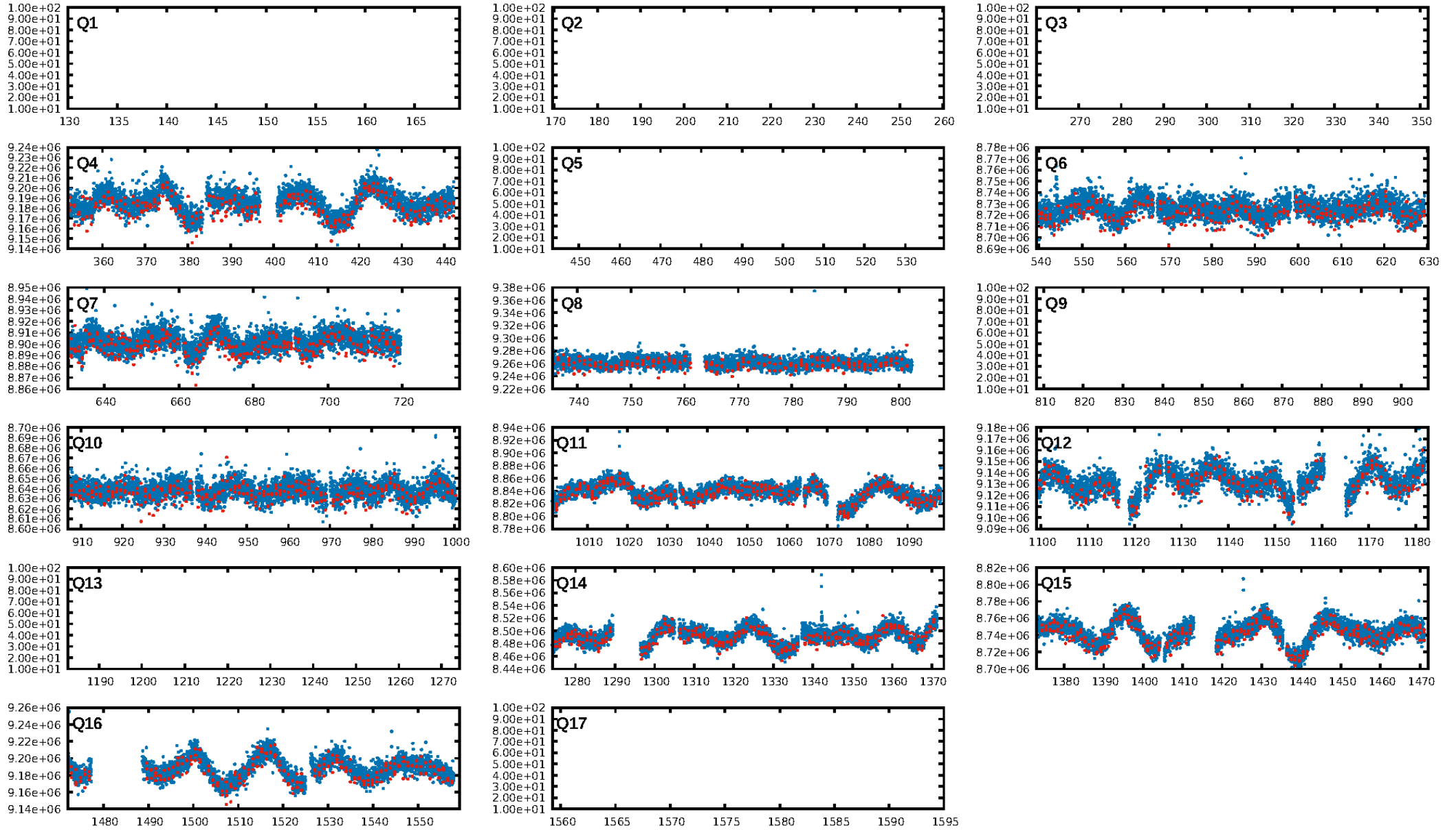
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.77e-61
RollingBand-fgt: 1.00 [842/842]
GhostDiagnostic-chr: 3.716
Centroid-sig: 23.6%
Centroid-so: 0.726 arcsec [1.50σ]
OotOffset-rm: 0.288 arcsec [2.68σ]
OotOffset-st: 3/3/4/0 [10]
KicOffset-rm: 0.399 arcsec [3.73σ]
KicOffset-st: 3/3/4/0 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [10/10]

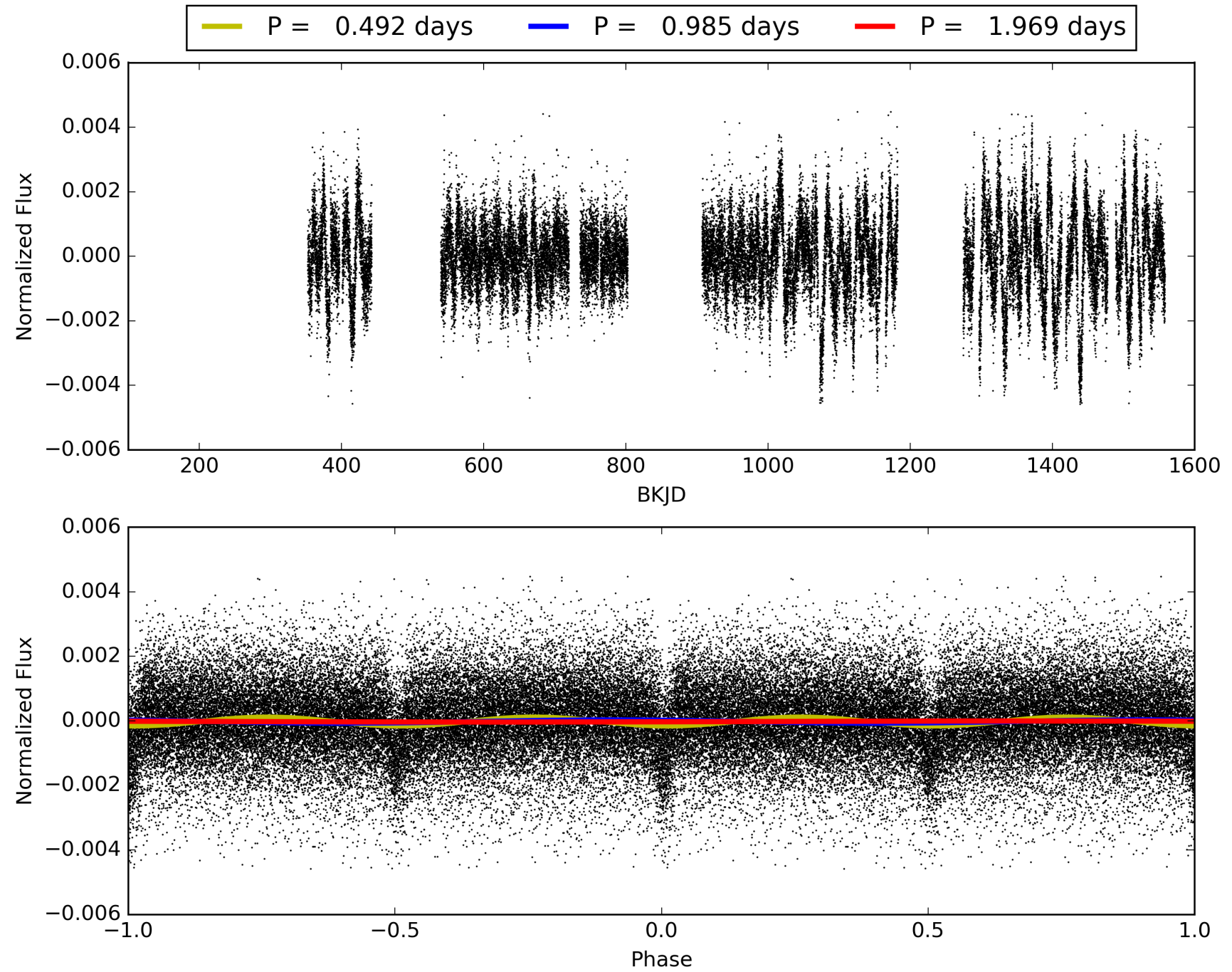
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:02:03 Z

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

TCE 006187341-02, PDC Light Curves

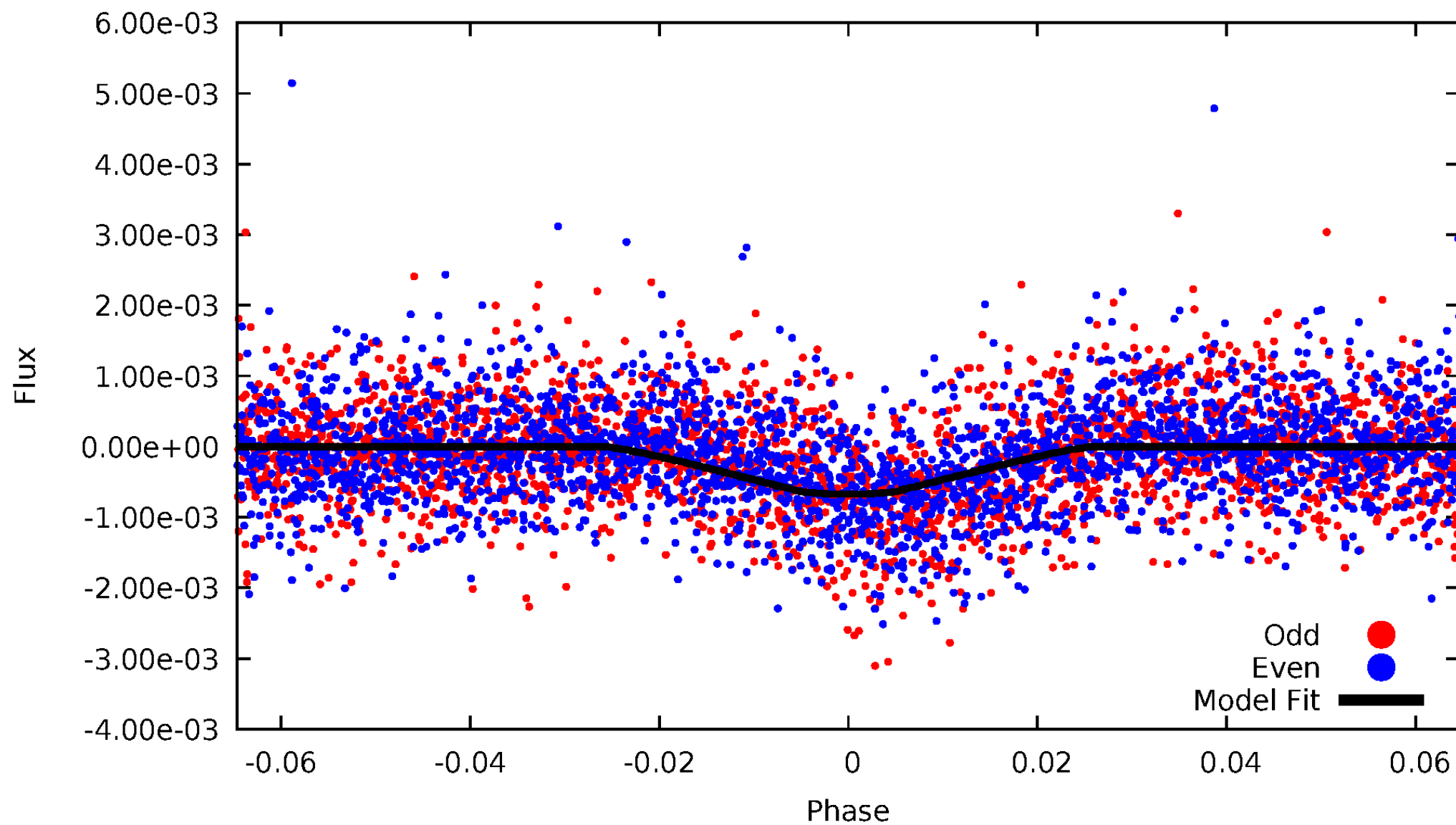


TCE 006187341-02



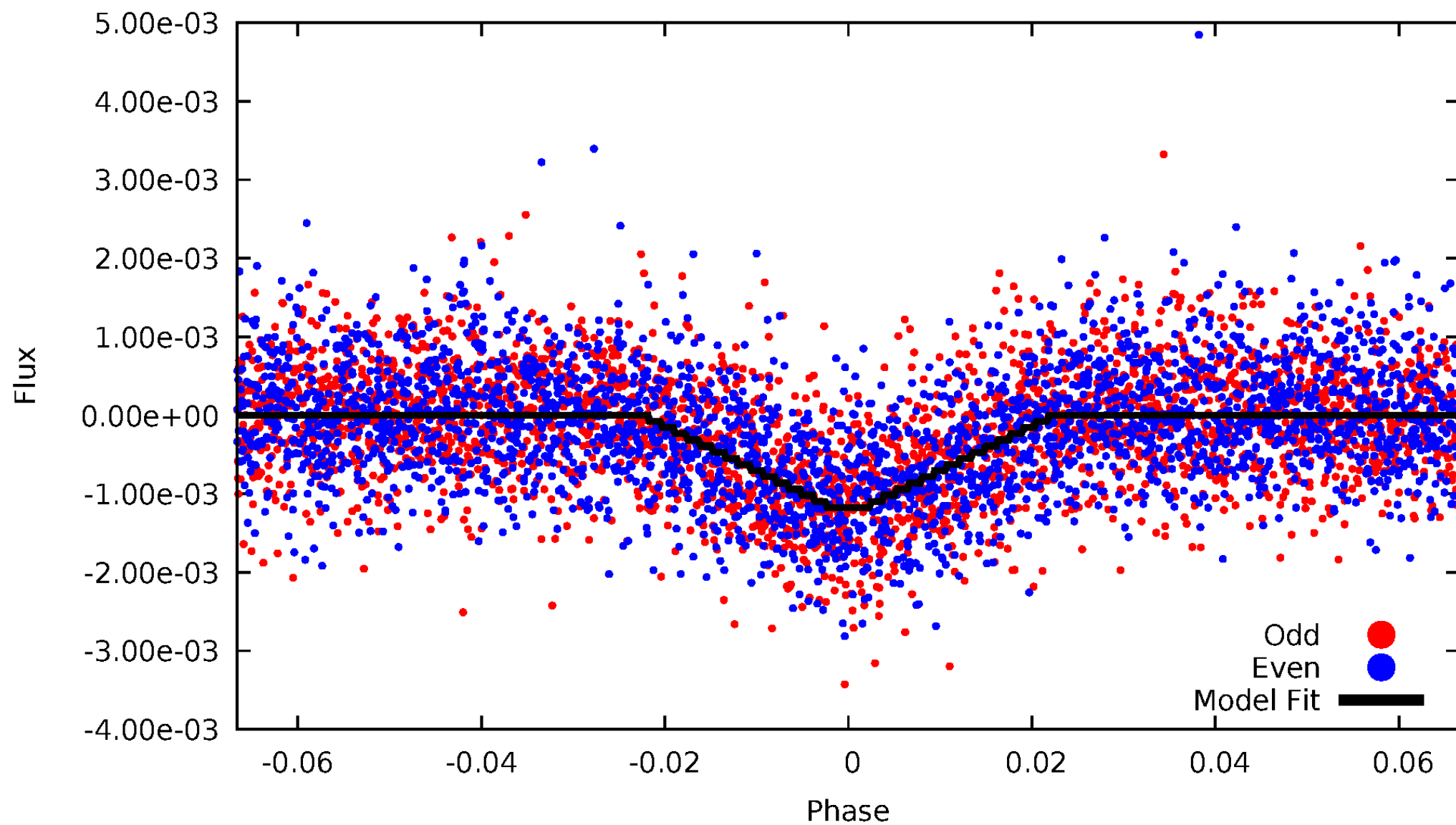
DV Odd/Even

TCE 006187341-02



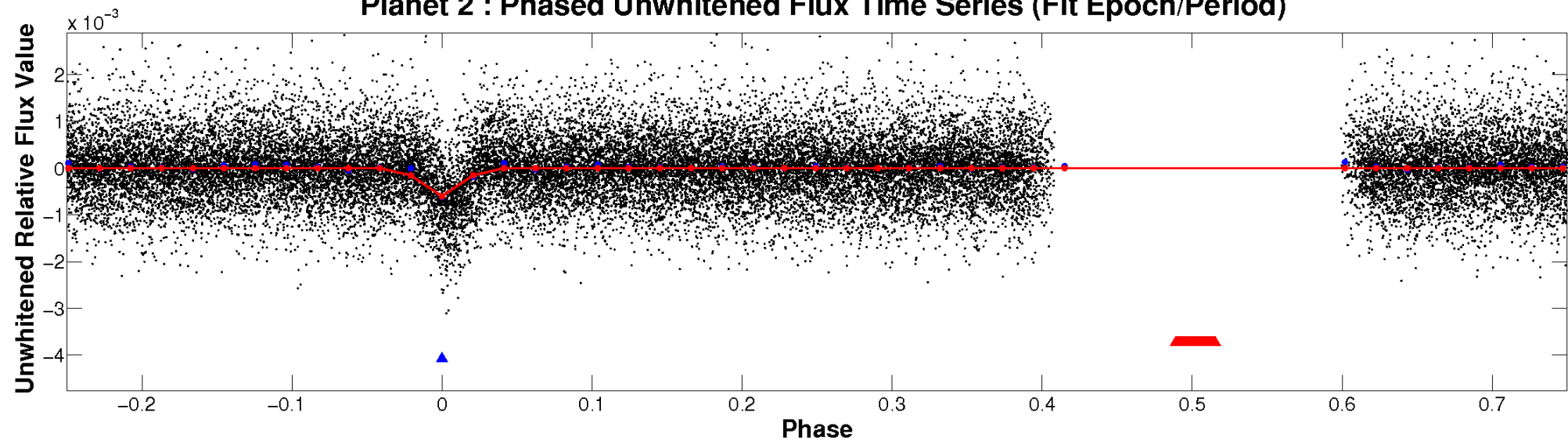
ALT Odd/Even

TCE 006187341-02

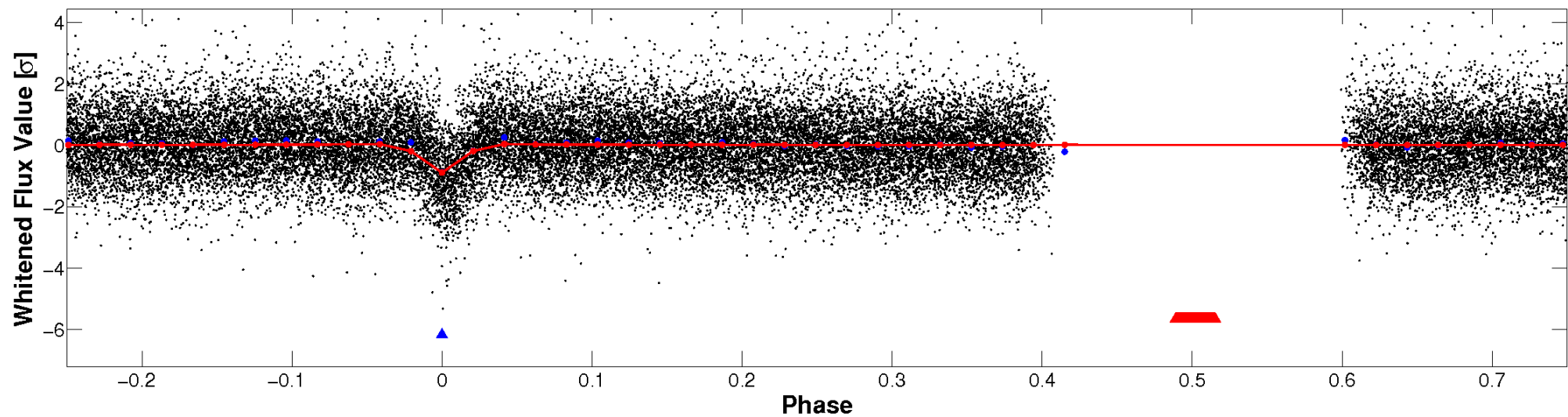


Non-Whitened Vs. Whitened Light Curve

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

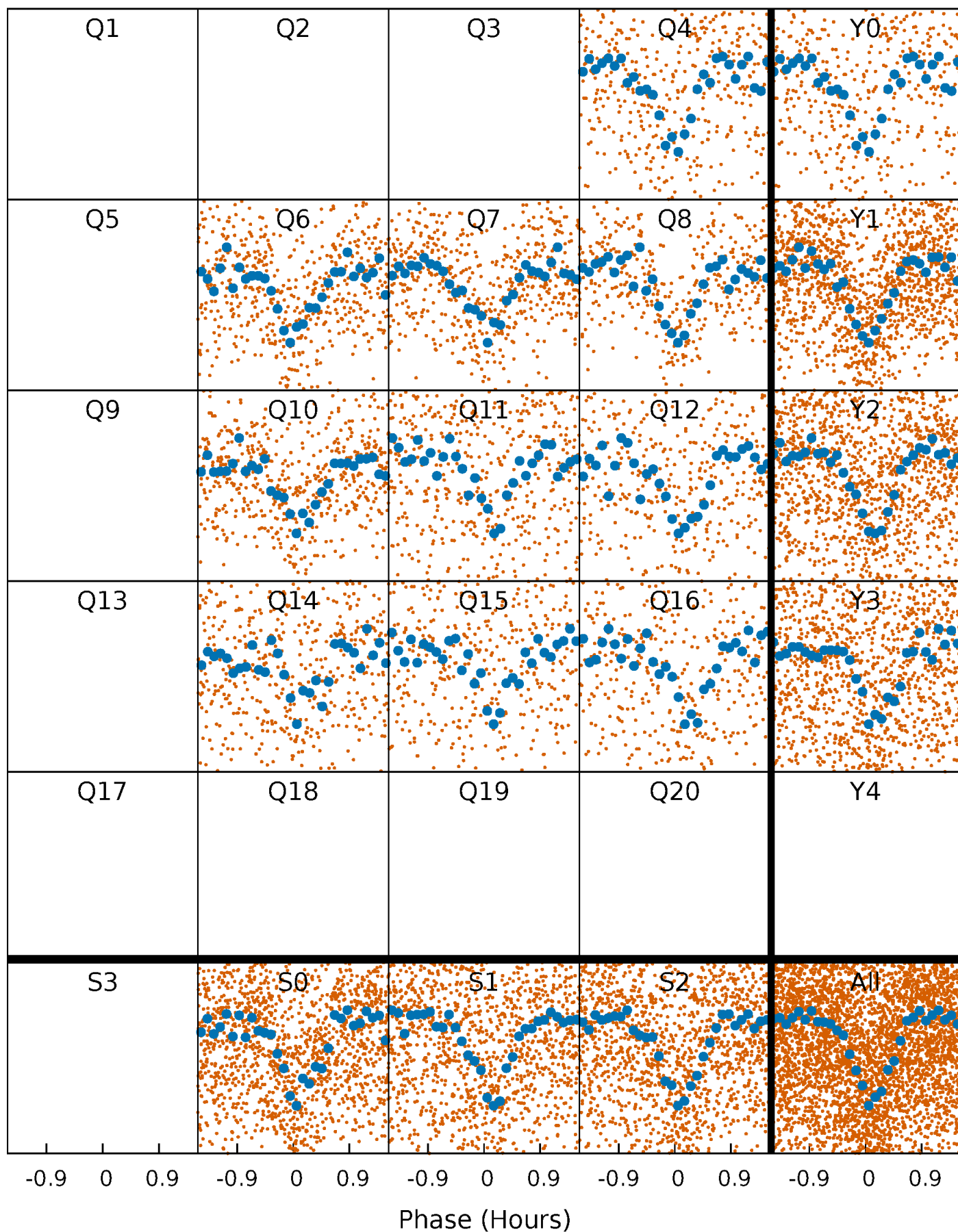


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



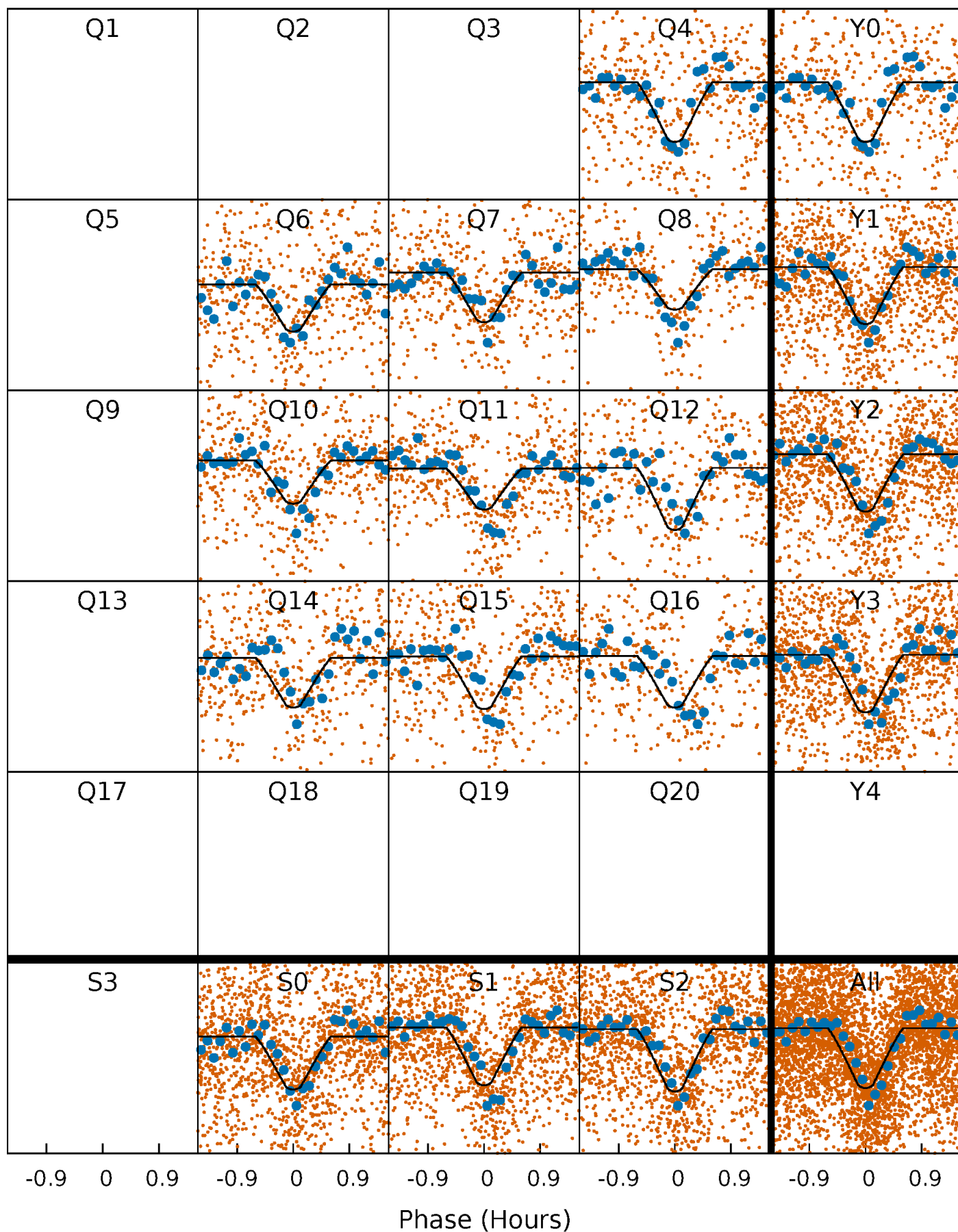
PDC Quarter-Phased Transit Curves

TCE 006187341-02 P= 0.984574 Days $T_0=131.904616$ (BKJD)



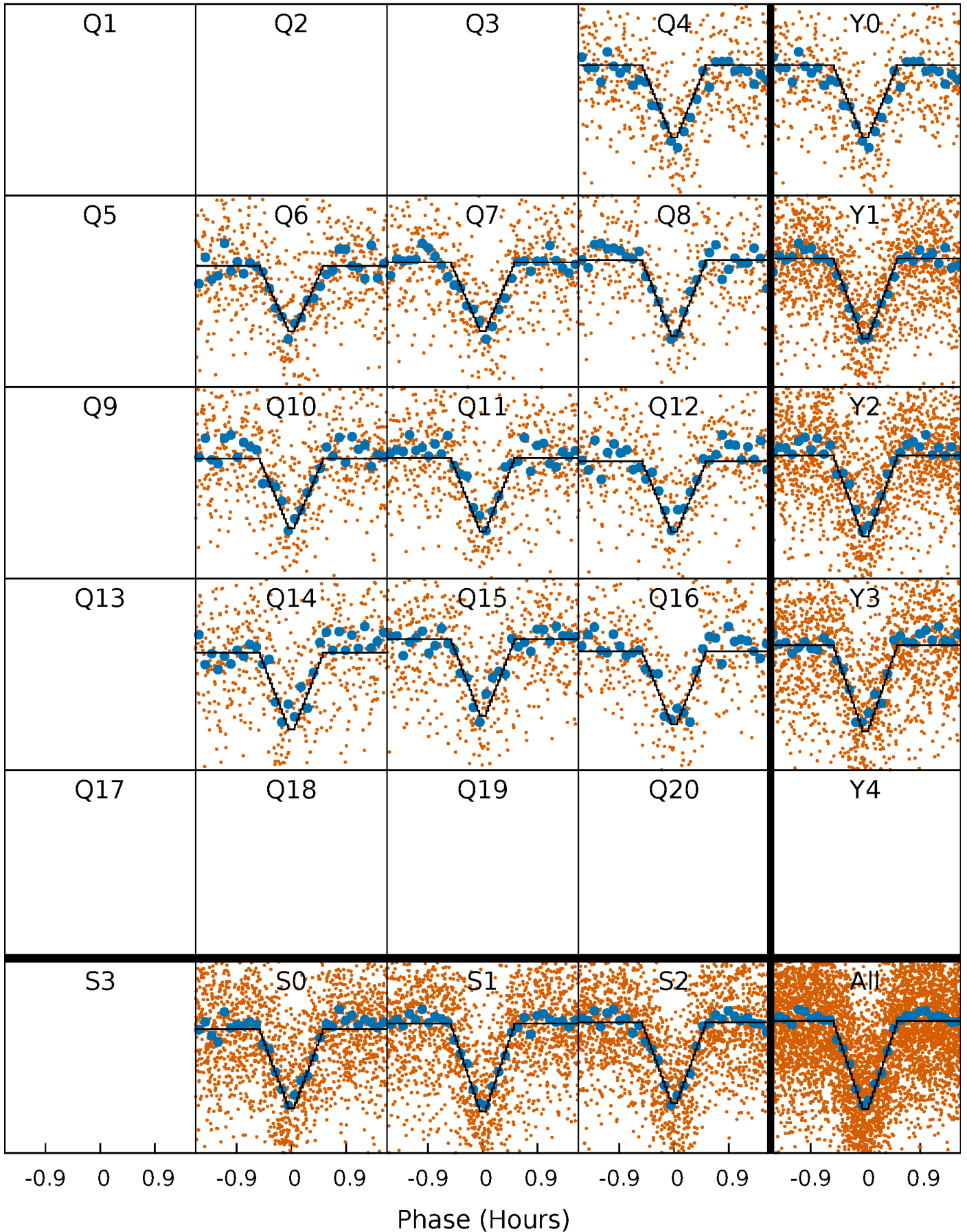
DV Quarter-Phased Transit Curves

TCE 006187341-02 P= 0.984574 Days $T_0=131.904616$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

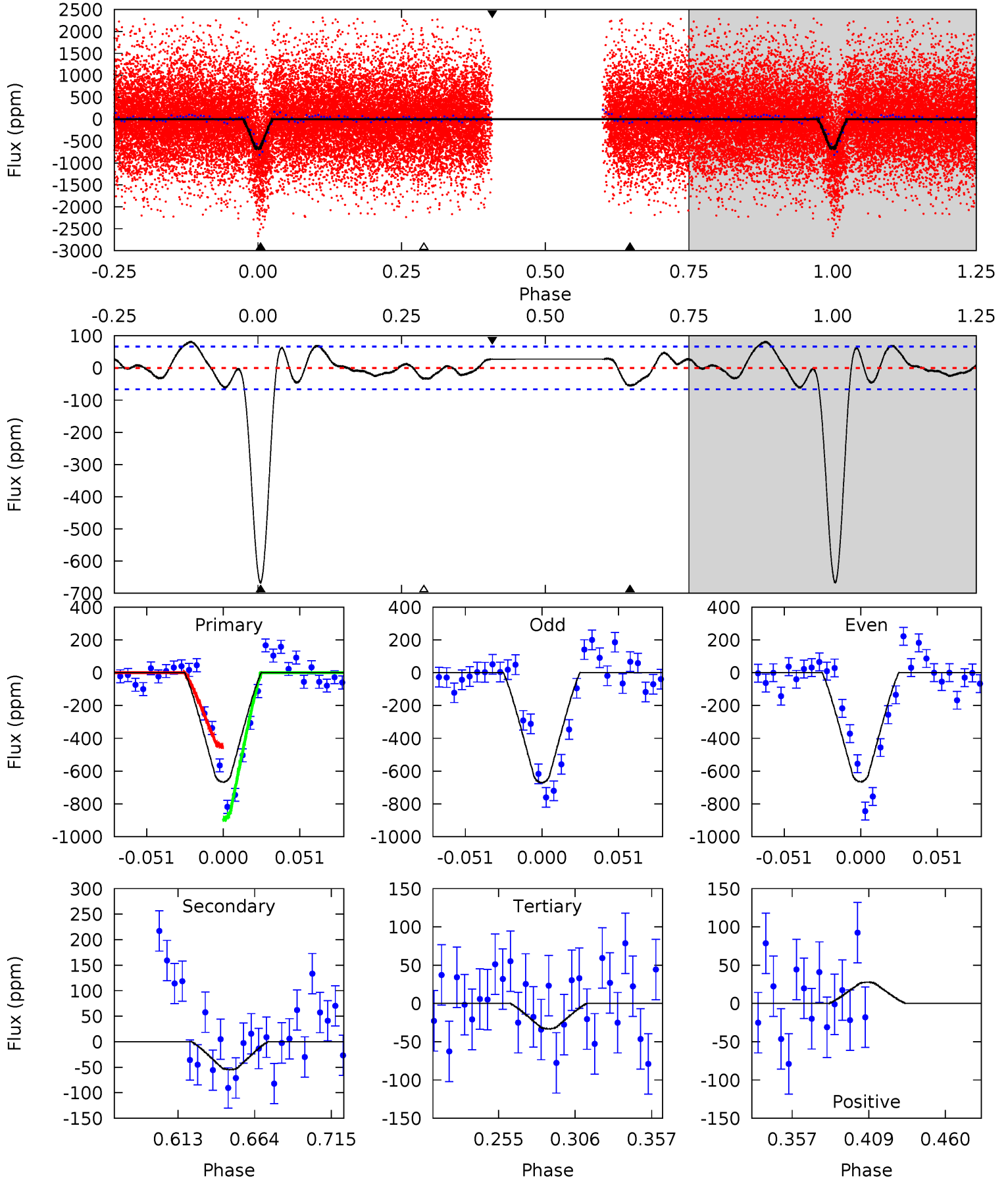
TCE 006187341-02 P= 0.984584 Days $T_0=131.900396$ (BKJD)



DV Model-Shift Uniqueness Test

006187341-02, P = 0.984574 Days, E = 131.904616 Days

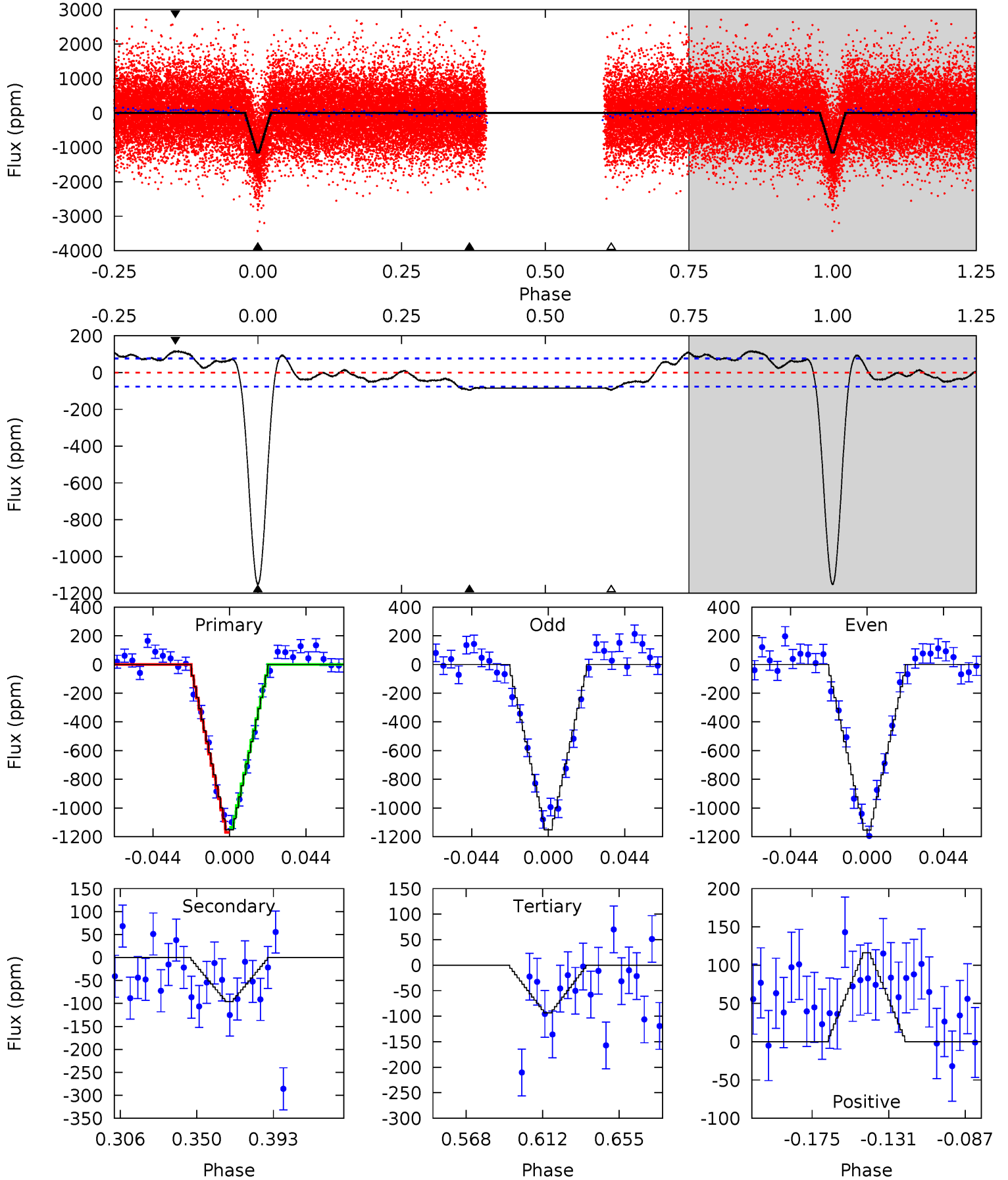
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.3	3.88	2.35	1.96	4.70	1.95	2.17	44.9	45.3	1.53	1.91	0.19	0.99	0.11	15.9



Alt Model-Shift Uniqueness Test

006187341-02, P = 0.984584 Days, E = 131.900396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.5	5.95	5.80	7.21	4.74	2.02	3.57	65.7	64.3	0.15	-1.26	0.04	0.97	0.09	1.07



Stellar Parameters For KIC 006187341

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4971^{+176}_{-176}	$4.566^{+0.072}_{-0.048}$	$-0.300^{+0.350}_{-0.300}$	$0.718^{+0.072}_{-0.072}$	$0.693^{+0.093}_{-0.050}$	$2.634^{+0.829}_{-0.438}$
	+4%/-4%	+2%/-1%	+117%/-100%	+10%/-10%	+13%/-7%	+31%/-17%
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 006187341-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-55 ± 14	$2.02^{+0.57}_{-0.57}$	1968^{+81}_{-81}	3116^{+377}_{-289}	$2.143^{+2.130}_{-0.926}$
Alt.	-96 ± 16	$2.66^{+0.57}_{-0.53}$	1979^{+83}_{-78}	3132^{+276}_{-221}	$2.139^{+1.383}_{-0.714}$

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 $A_{obs} \gg 1.0$

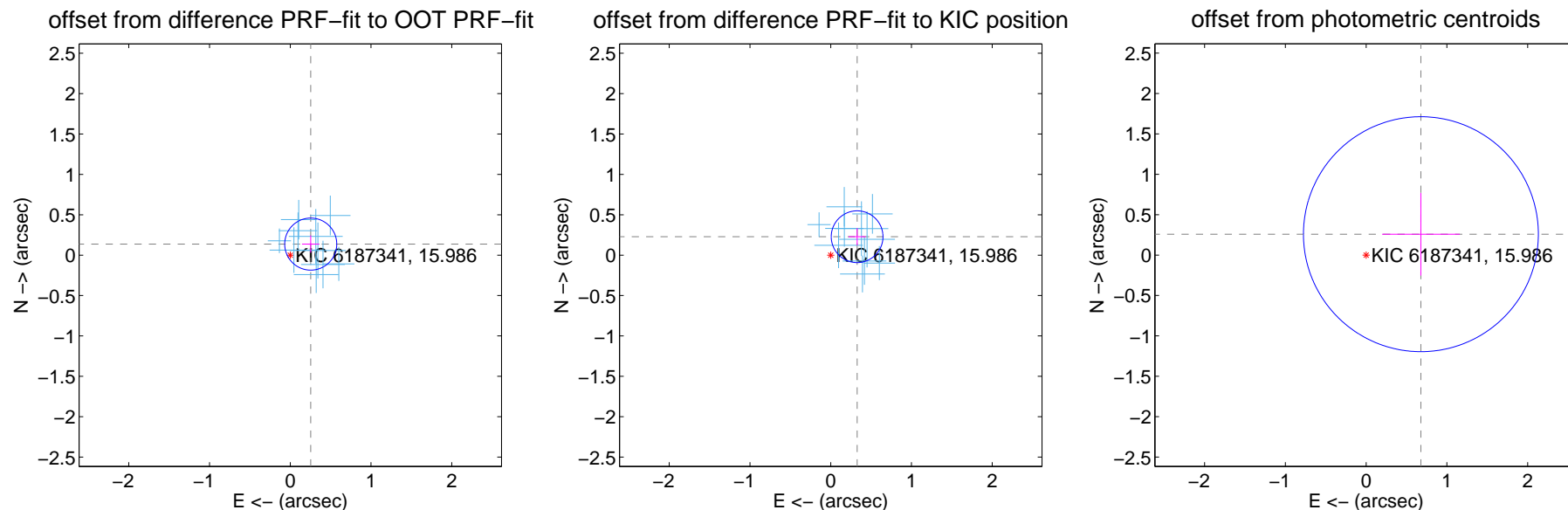
DV Centroid Data

Supplemental centroid analysis for 006187341-02. Kepler magnitude: 15.99. Transit SNR 27.86

There are 10 quarters with good PRF difference image offsets

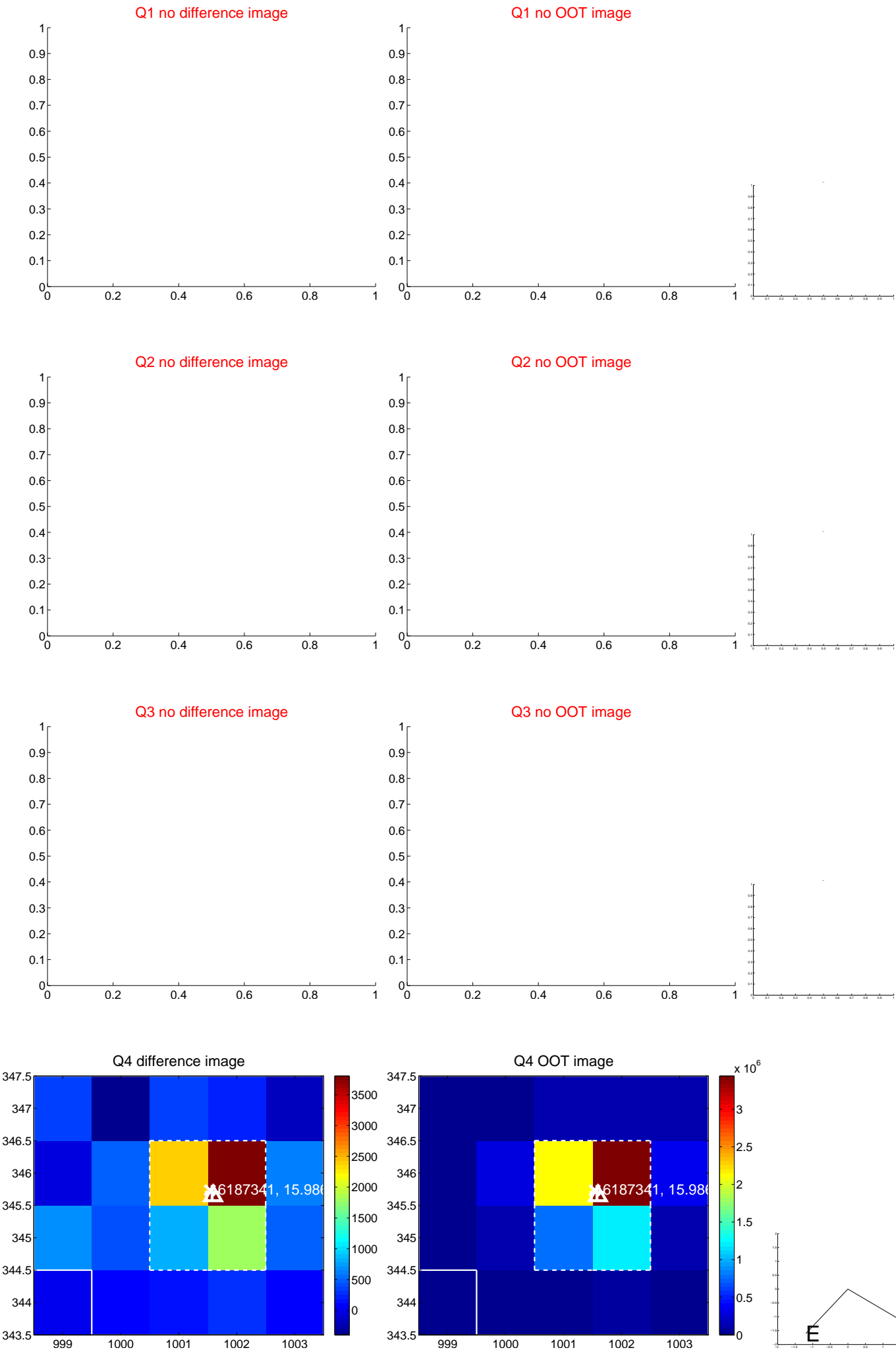
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.288 ± 0.107	2.68	-0.253 ± 0.108	0.137 ± 0.107
PRF-fit source offset from KIC position	0.399 ± 0.107	3.73	-0.327 ± 0.107	0.228 ± 0.107
photometric centroid source offset	0.73 ± 0.48	1.50	-0.68 ± 0.48	0.26 ± 0.51

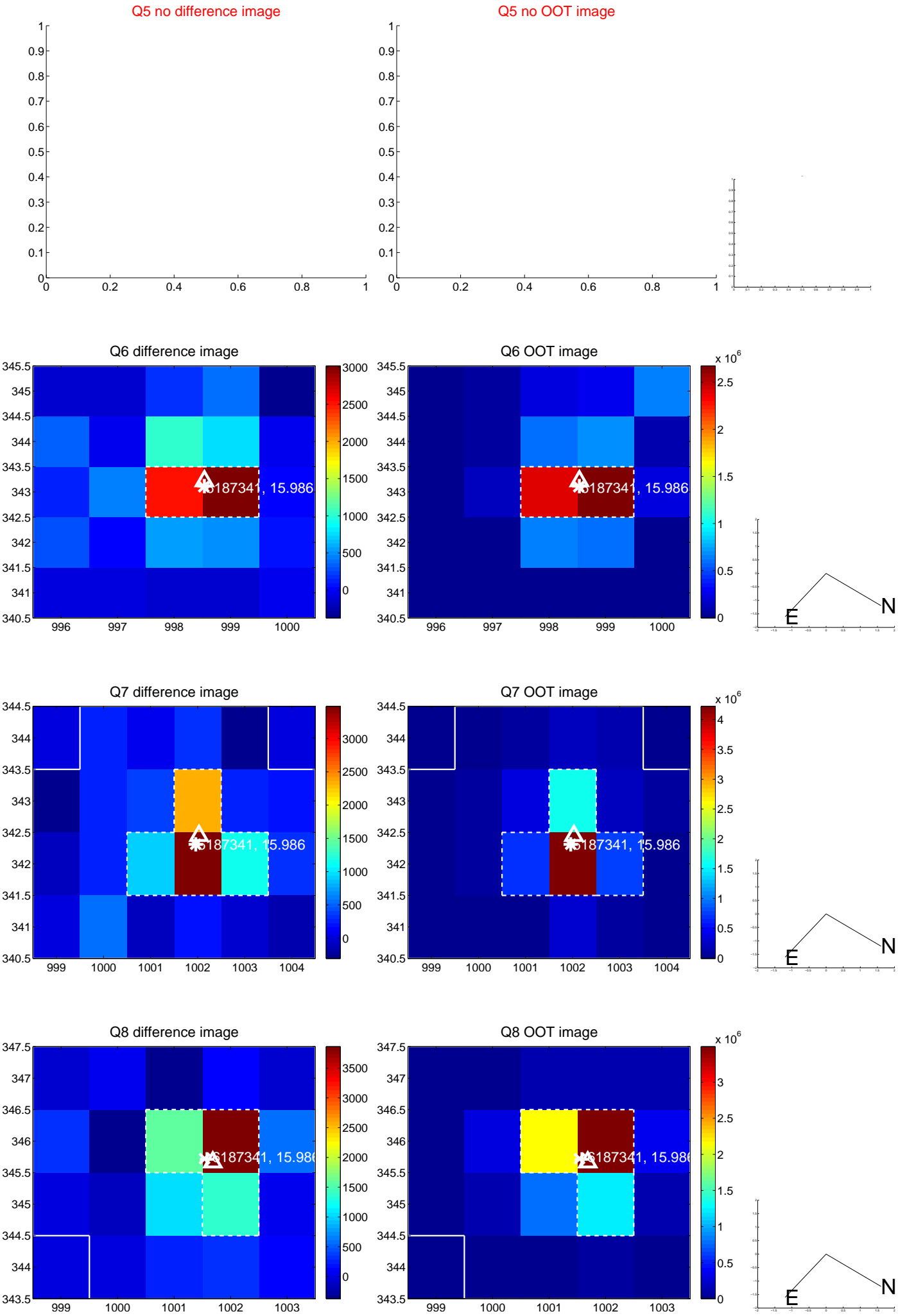


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

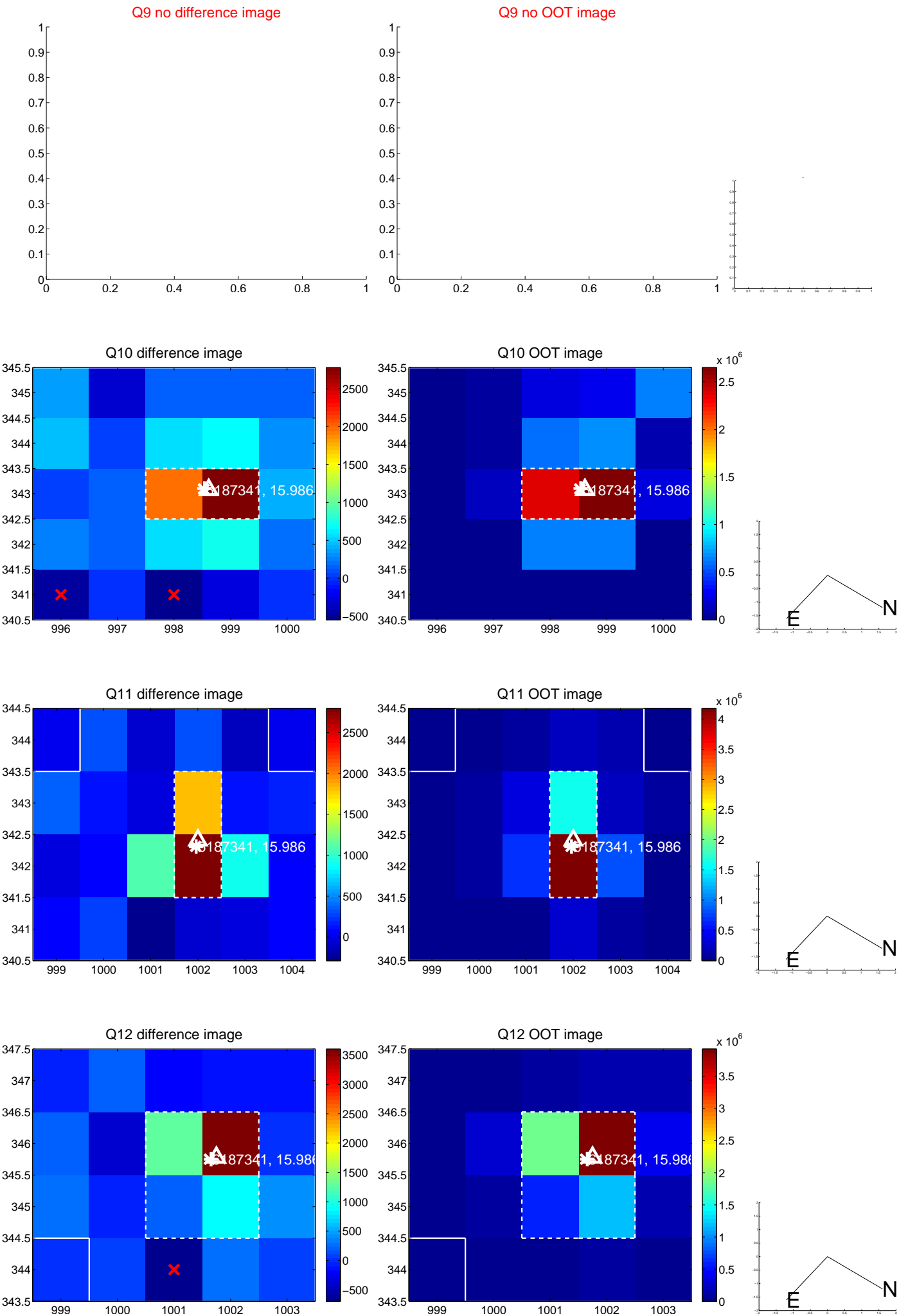
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



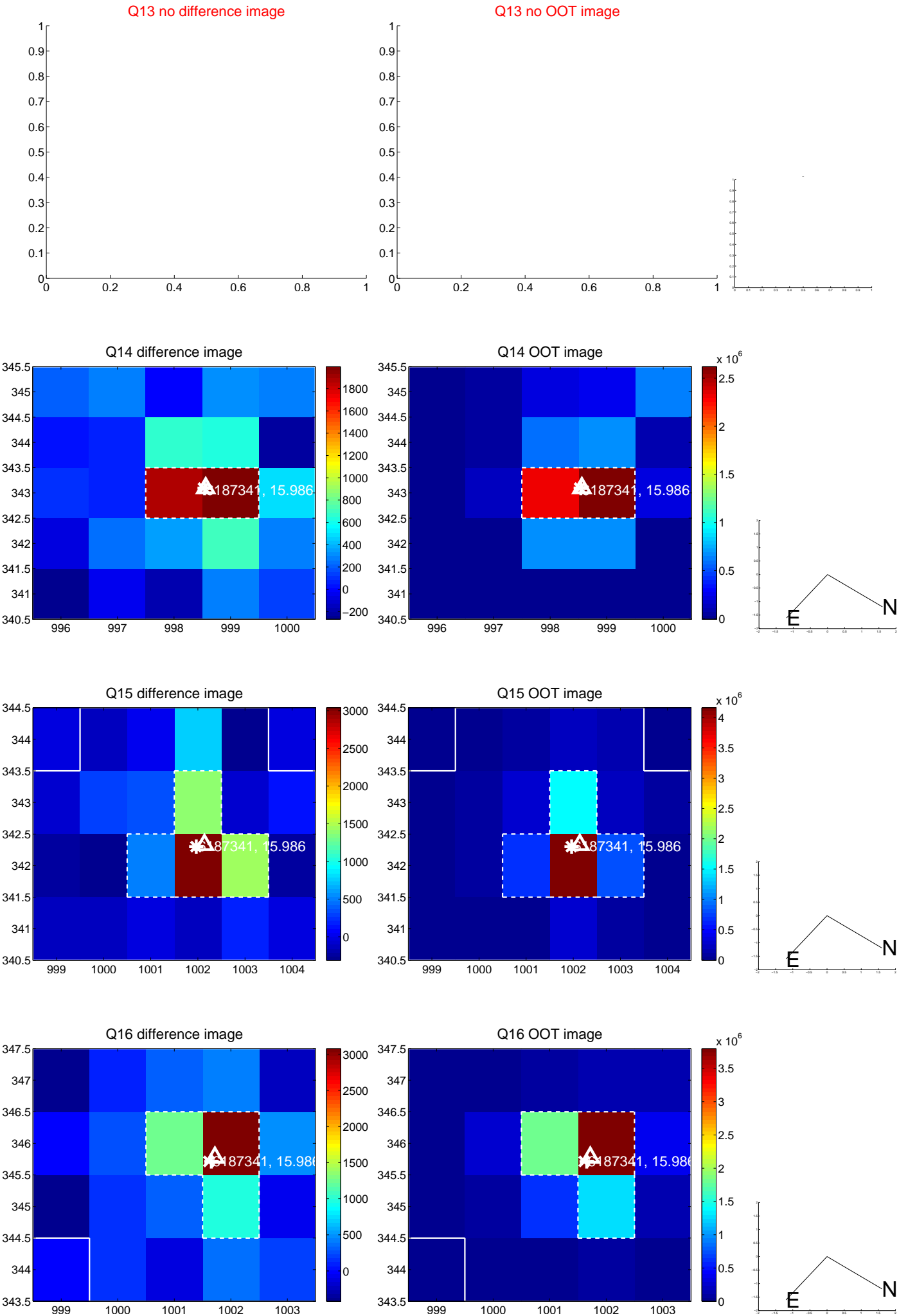
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



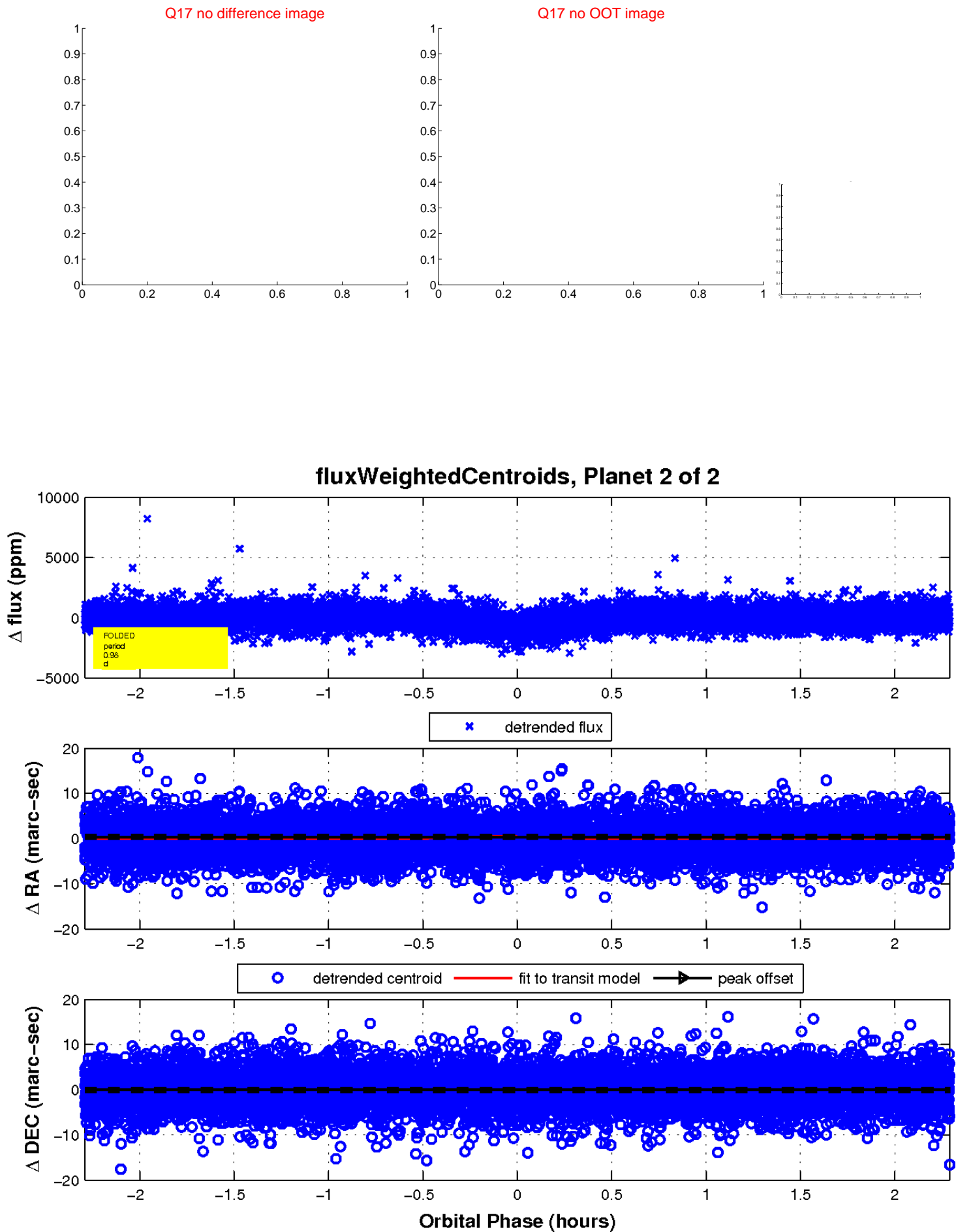
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

