

KIC 009569866

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})
009569866-01	OBS	7191.01	1.480314	131.759855	393024.8	3.220	4264.7	4046.0	0.72	5260	50.43	704.77
009569866-02	OBS	No	0.740159	131.754744	34251.7	1.500	3159.9	-1.0	0.72	5260	13.16	1775.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009569866-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
009569866-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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

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

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

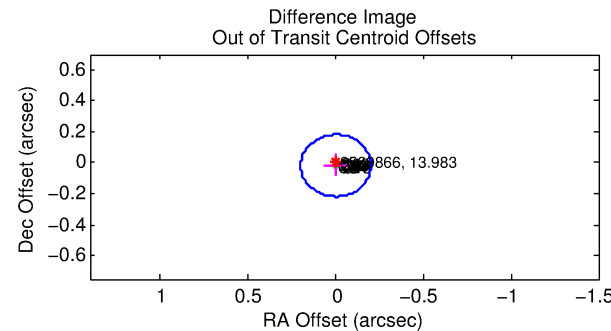
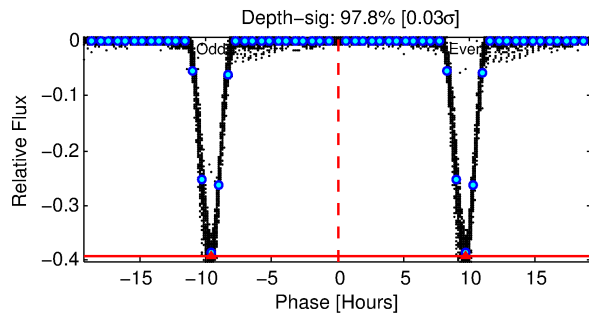
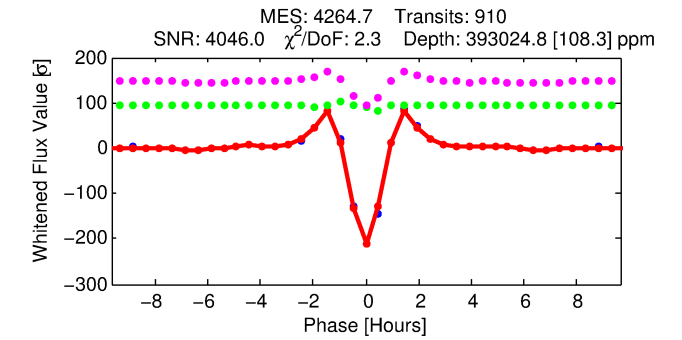
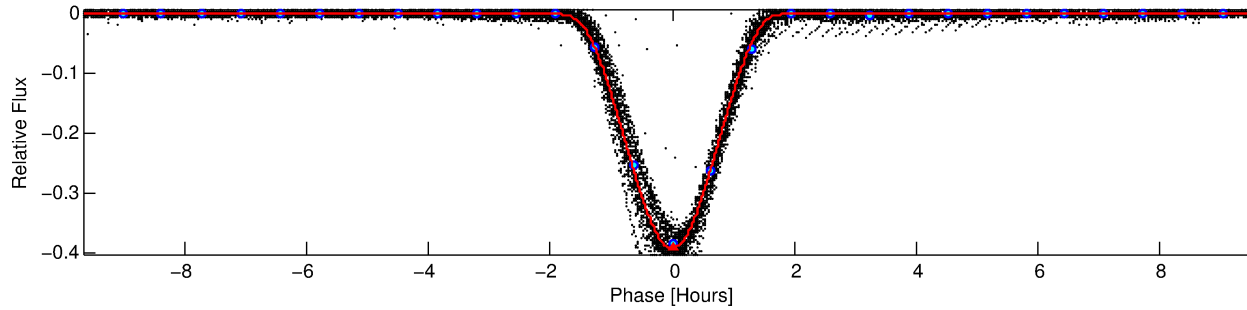
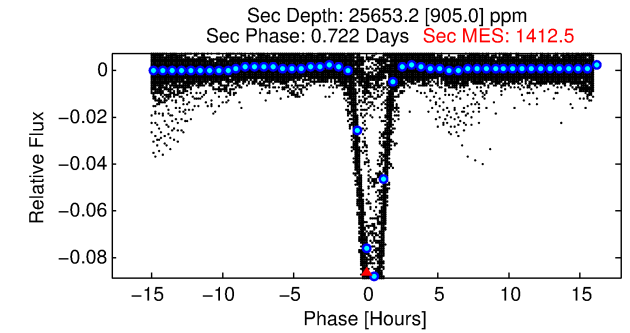
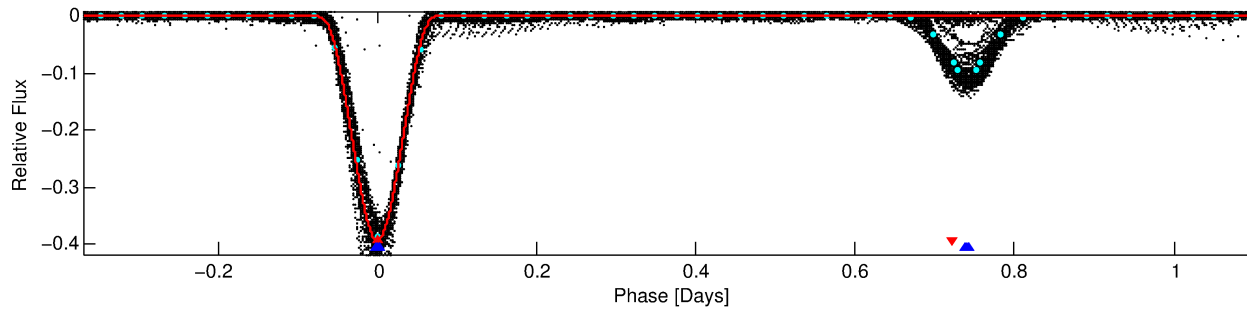
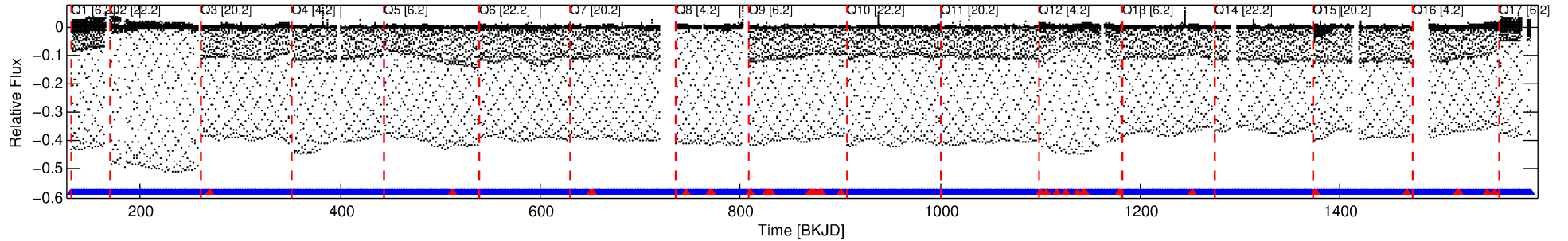
Ephemeris Match Information For 009569866-01

No Significant Match Found

DV One-Page Summary

KIC: 9569866 Candidate: 1 of 2 Period: 1.480 d
KOI: K07191.01 Corr: 0.981

Kp: 13.98 R*: 0.72 Rs Teff: 5260.0 K Logg: 4.56 Fe/H: -0.580



DV Fit Results:

Period = 1.48031 [0.00000] d
Epoch = 131.7599 [0.0000] BKJD
Rp/R* = 0.6446 [0.0031]
a/R* = 5.60 [0.01]
b = 0.50 [0.01]
Seff = 704.77 [133.03]
Teff = 1314 [62] K
Rp = 50.43 [5.63] Re
a = 0.0224 [0.0022] AU
Ag = 2.78 [0.42] [4.24σ]
Teffp = 2622 [82] K [12.74σ]

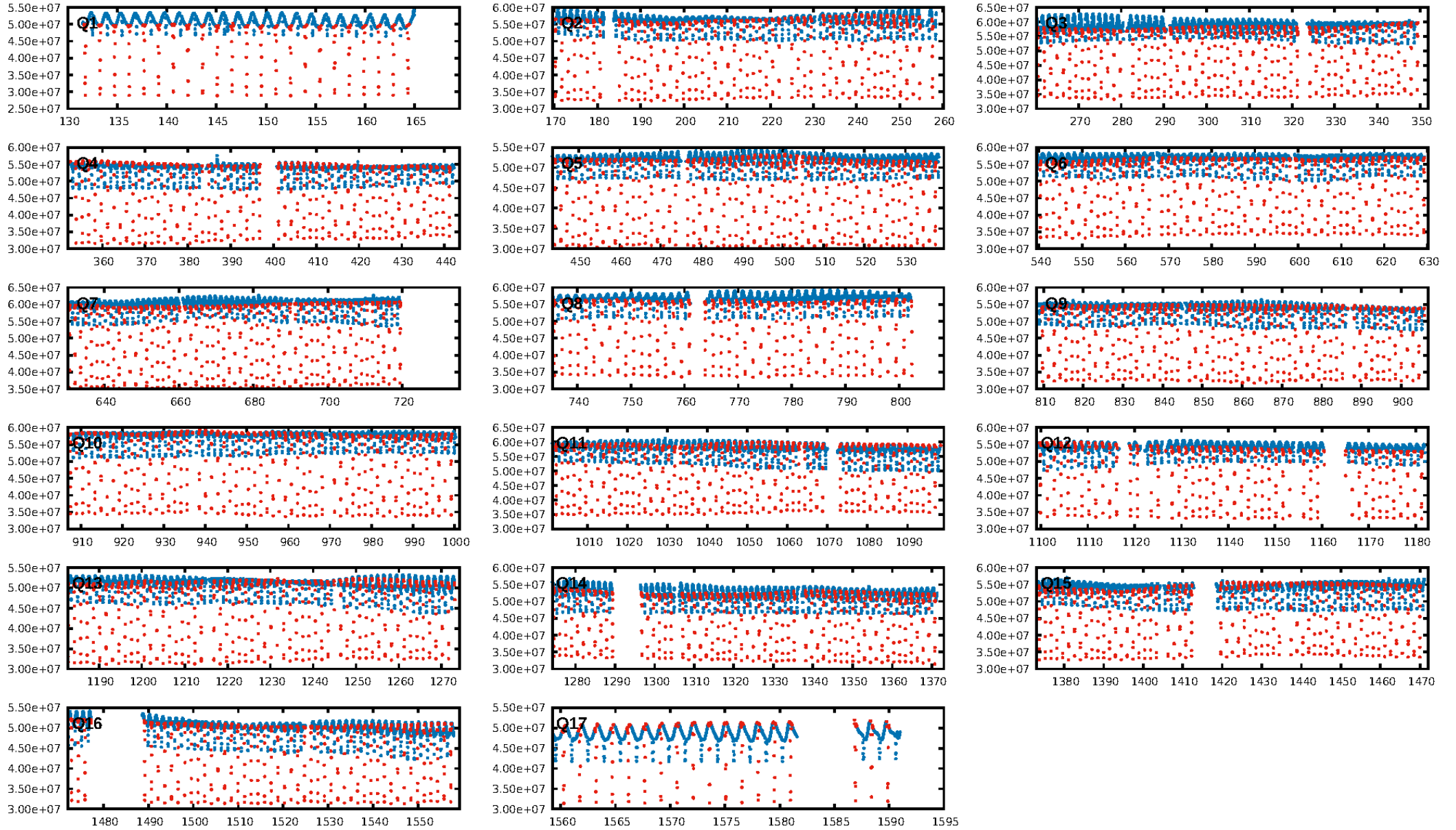
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [837/869]
GhostDiagnostic-chr: 1.139
Centroid-sig: N/A
Centroid-so: 0.192 arcsec [438.17σ]
OotOffset-rm: 0.019 arcsec [0.28σ]
KicOffset-rm: 0.087 arcsec [1.29σ]
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]

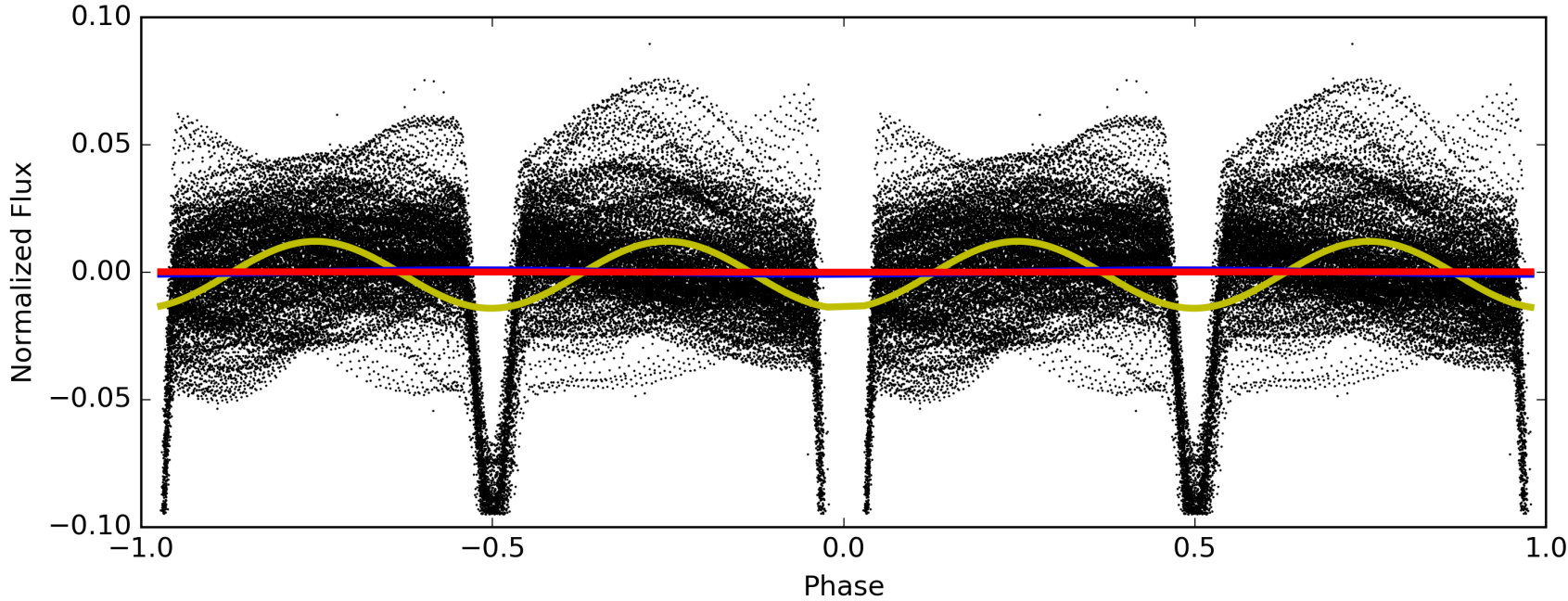
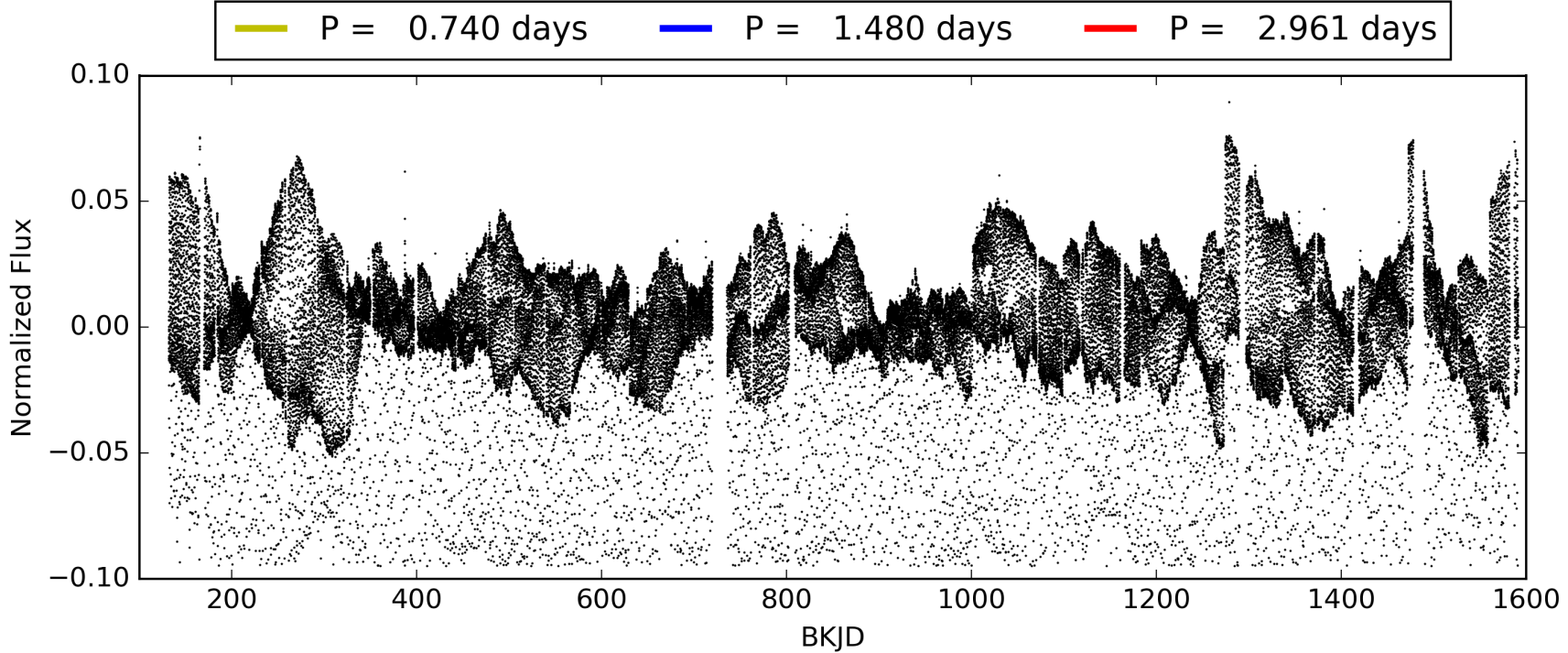
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:37:15 Z

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

TCE 009569866-01, PDC Light Curves

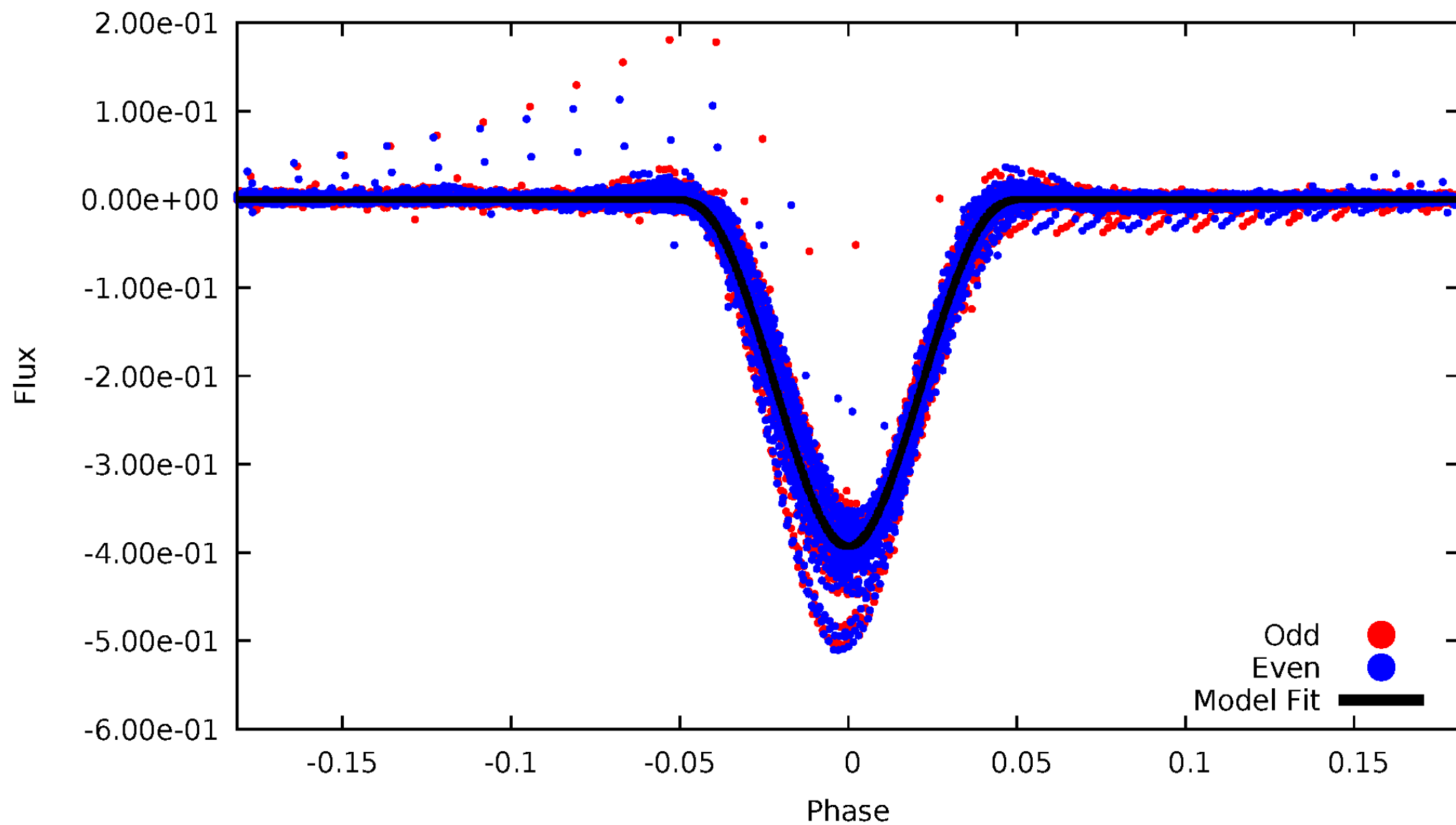


TCE 009569866-01



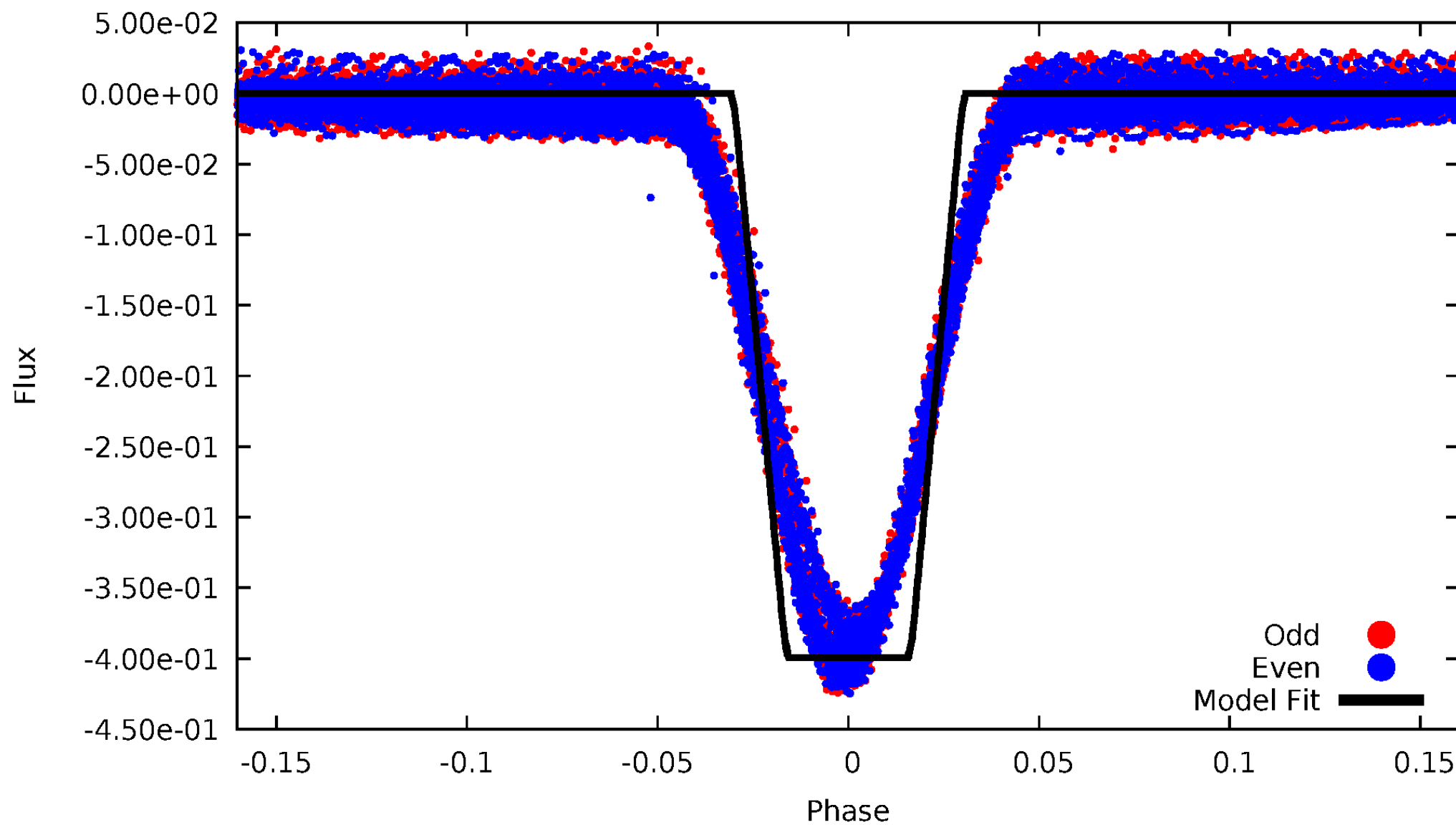
DV Odd/Even

TCE 009569866-01



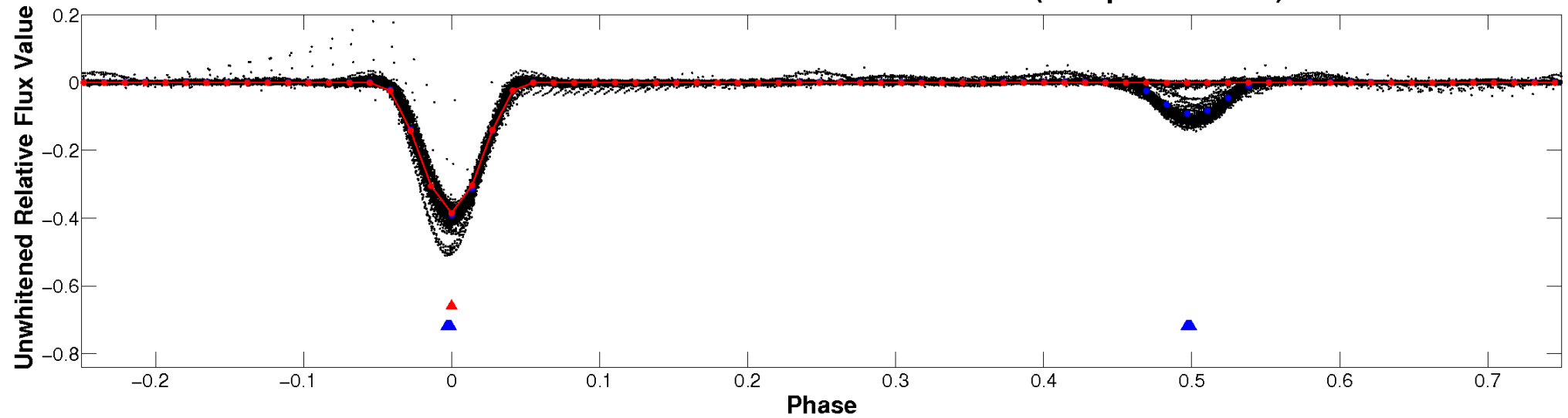
ALT Odd/Even

TCE 009569866-01

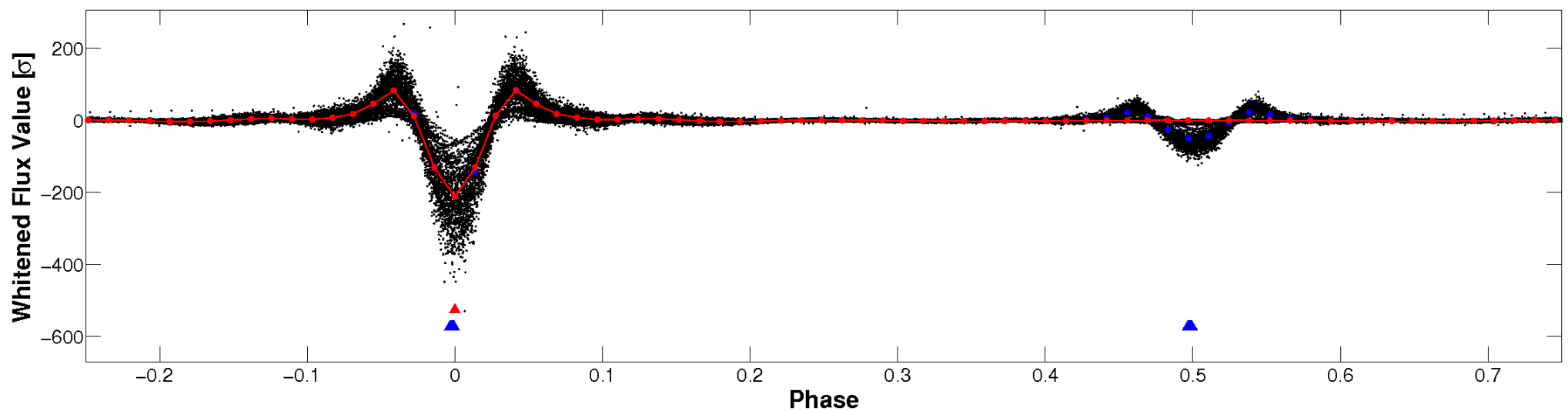


Non-Whitened Vs. Whitened Light Curve

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

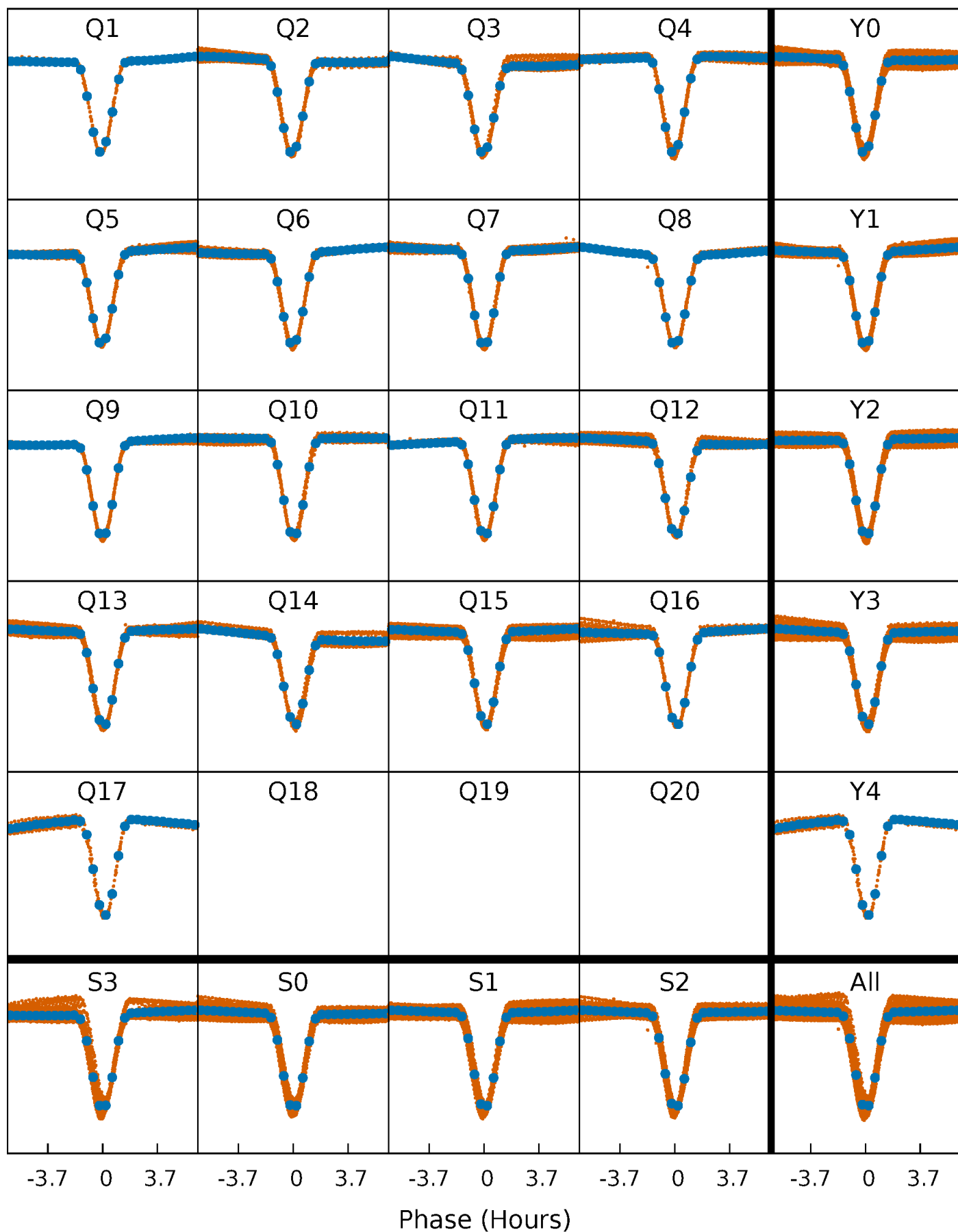


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



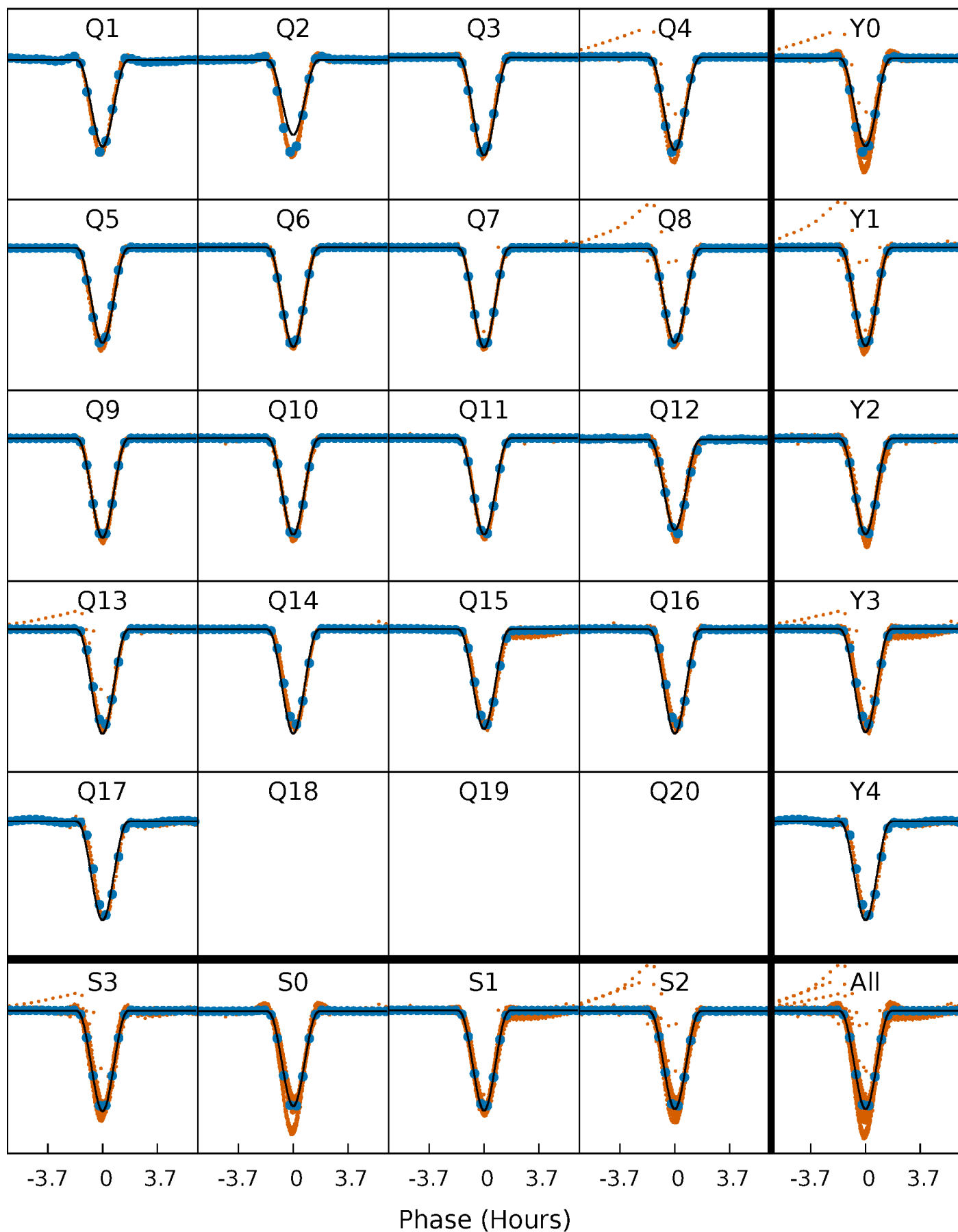
PDC Quarter-Phased Transit Curves

TCE 009569866-01 P= 1.480314 Days $T_0=131.759855$ (BKJD)



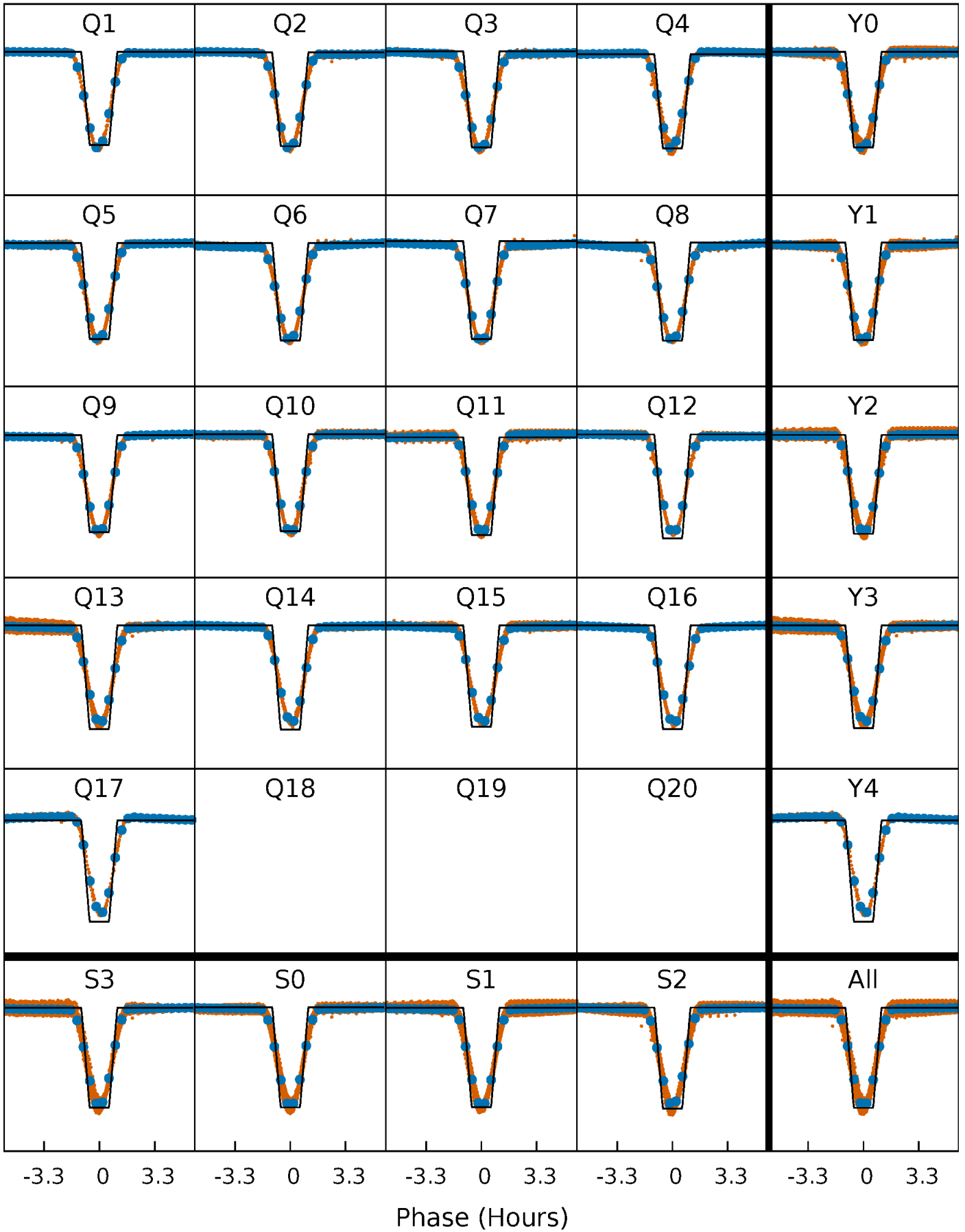
DV Quarter-Phased Transit Curves

TCE 009569866-01 P= 1.480314 Days $T_0=131.759855$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

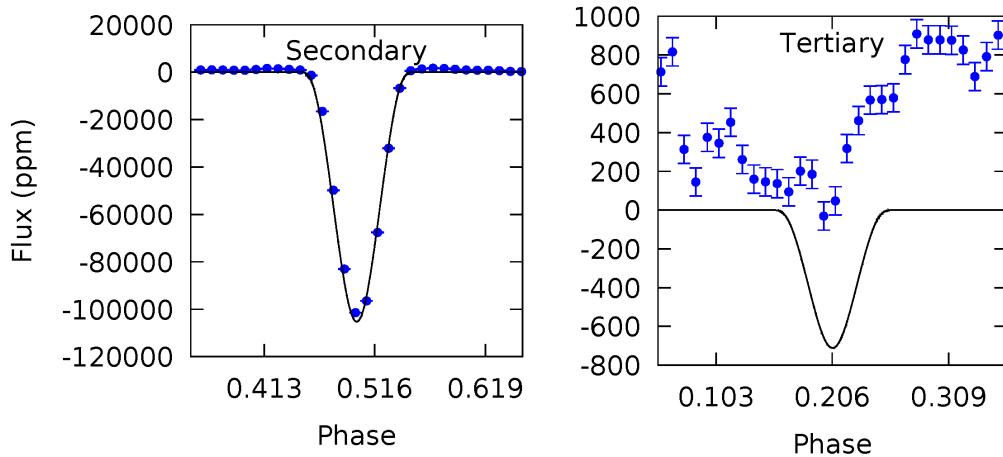
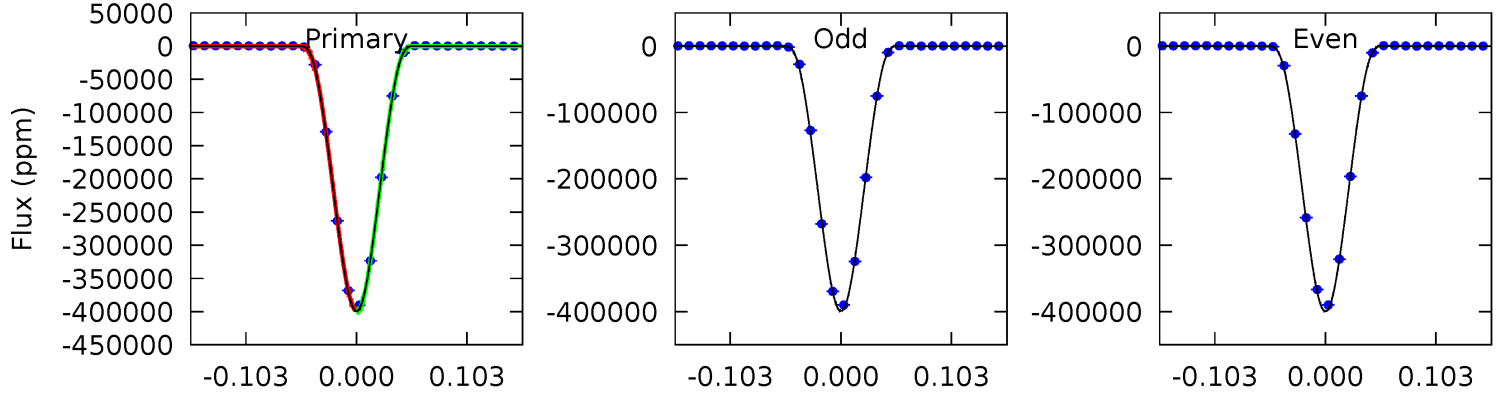
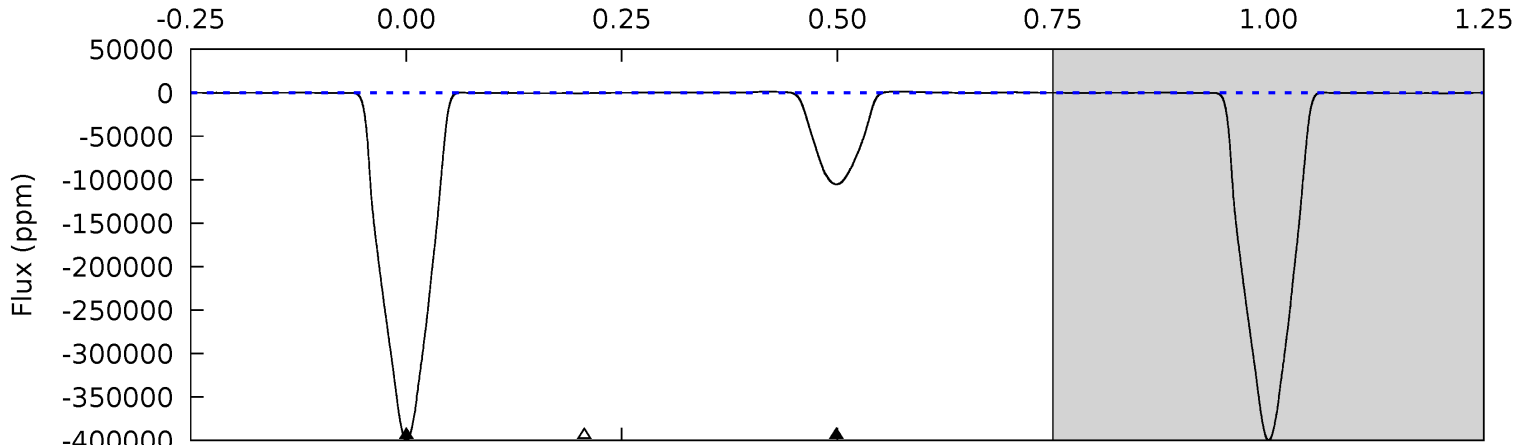
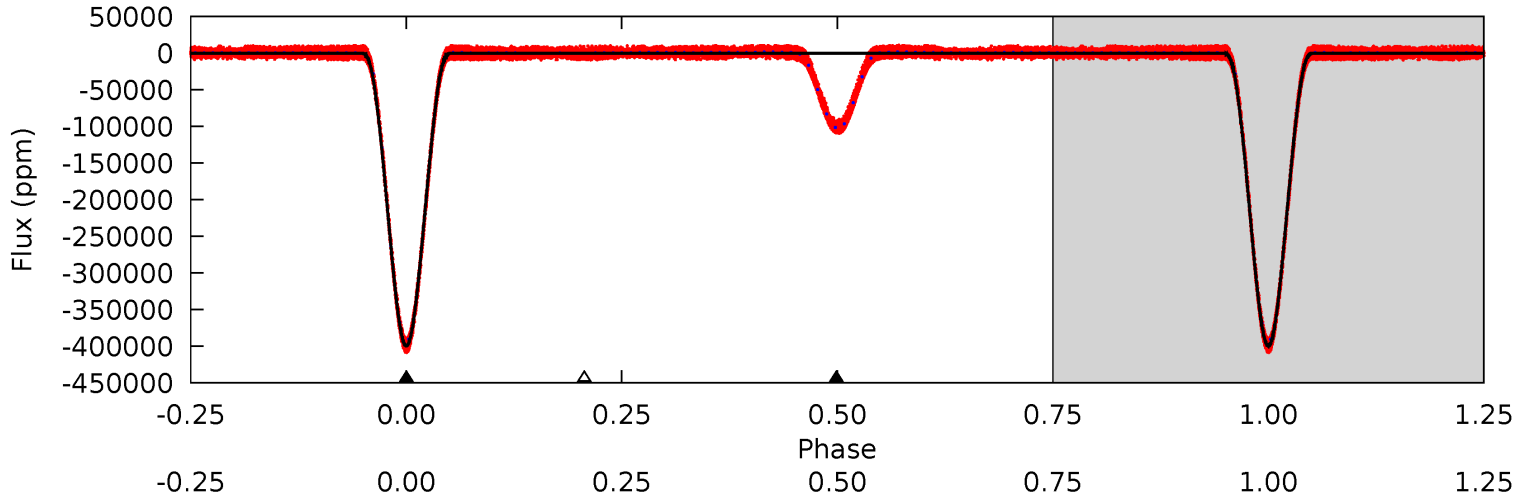
TCE 009569866-01 P= 1.480318 Days $T_0=131.758602$ (BKJD)



DV Model-Shift Uniqueness Test

009569866-01, P = 1.480314 Days, E = 130.279541 Days

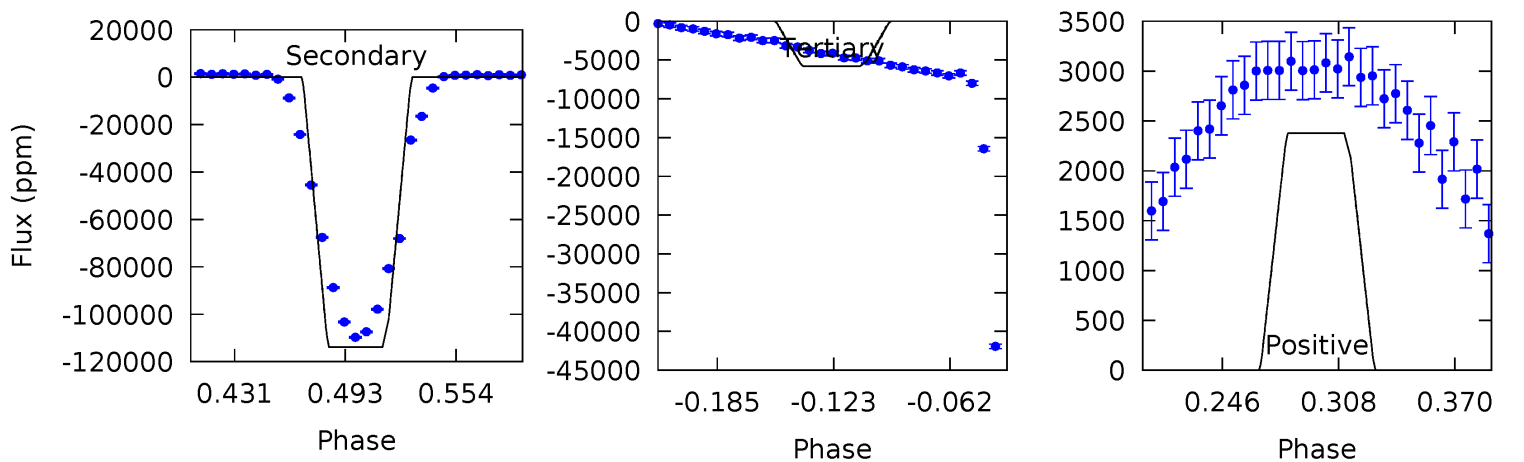
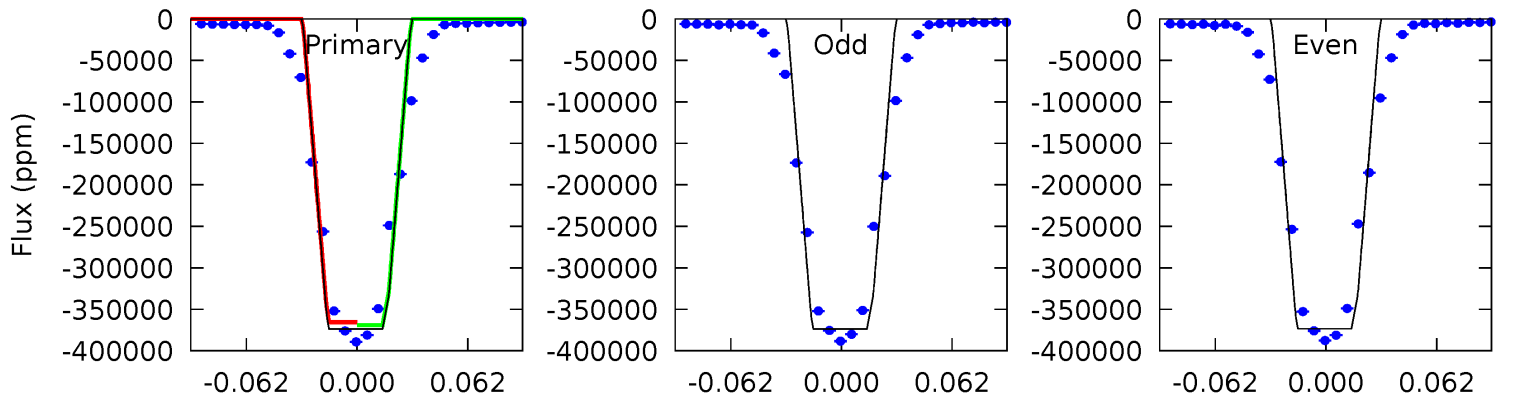
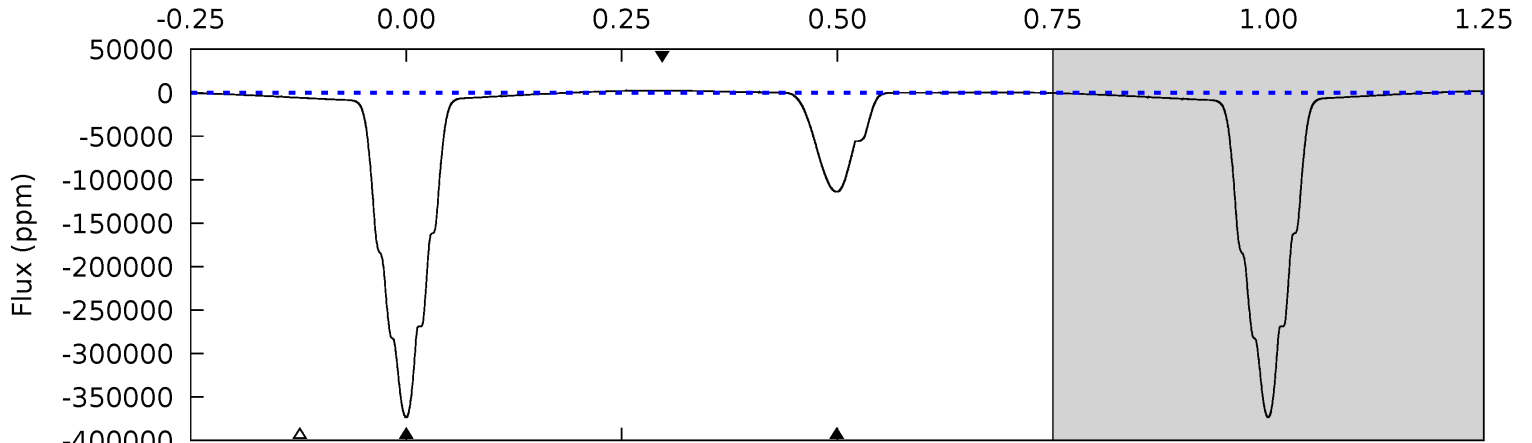
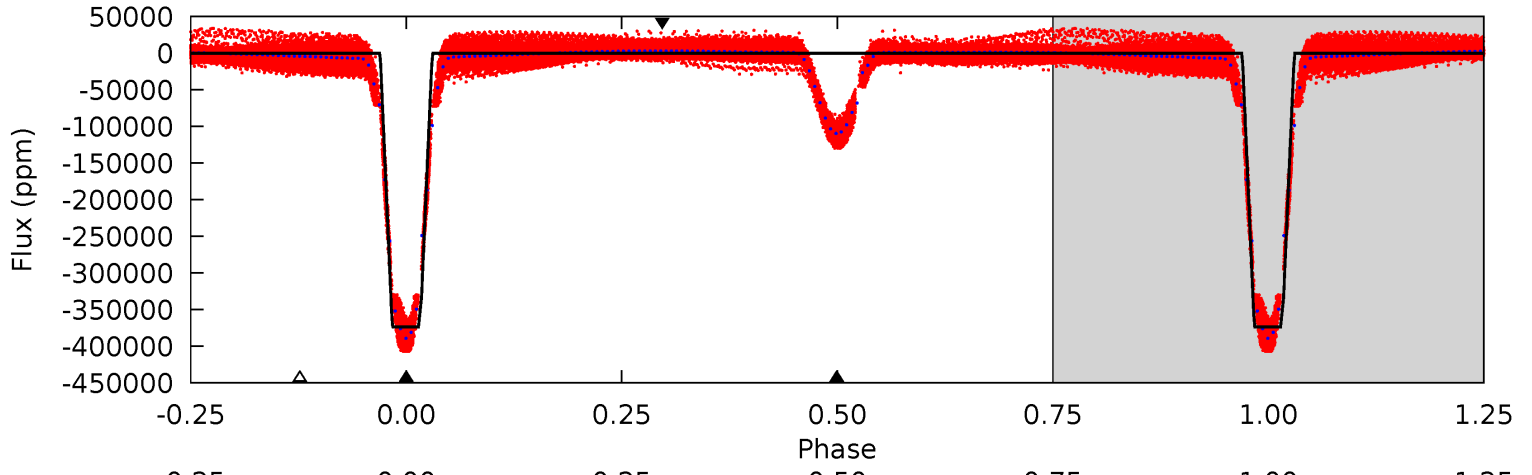
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9783	2578	17.4	0	4.56	1.63	8.46	9766	9783	2560	2578	6.92	1.01	0.00	0



Alt Model-Shift Uniqueness Test

009569866-01, P = 1.480318 Days, E = 130.278284 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2440	743.5	38.0	15.5	4.67	1.87	18.8	2402	2425	705.5	728.0	0.69	0.99	0.01	11.2



Stellar Parameters For KIC 009569866

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5260^{+157}_{-141}	$4.560^{+0.082}_{-0.060}$	$-0.580^{+0.350}_{-0.300}$	$0.717^{+0.080}_{-0.072}$	$0.680^{+0.091}_{-0.035}$	$2.599^{+0.918}_{-0.513}$
	+3%/-3%	+2%/-1%	+60%/-52%	+11%/-10%	+13%/-5%	+35%/-20%
Source	PHO1	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 009569866-01 / KOI 7191.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-105259 ± 41	$50.71^{+3.39}_{-3.01}$	1829^{+75}_{-65}	4074^{+99}_{-92}	13^{+1}_{-1}
Alt.	-113829 ± 153	$49.37^{+3.10}_{-2.81}$	1827^{+74}_{-70}	4175^{+102}_{-98}	15^{+2}_{-1}

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

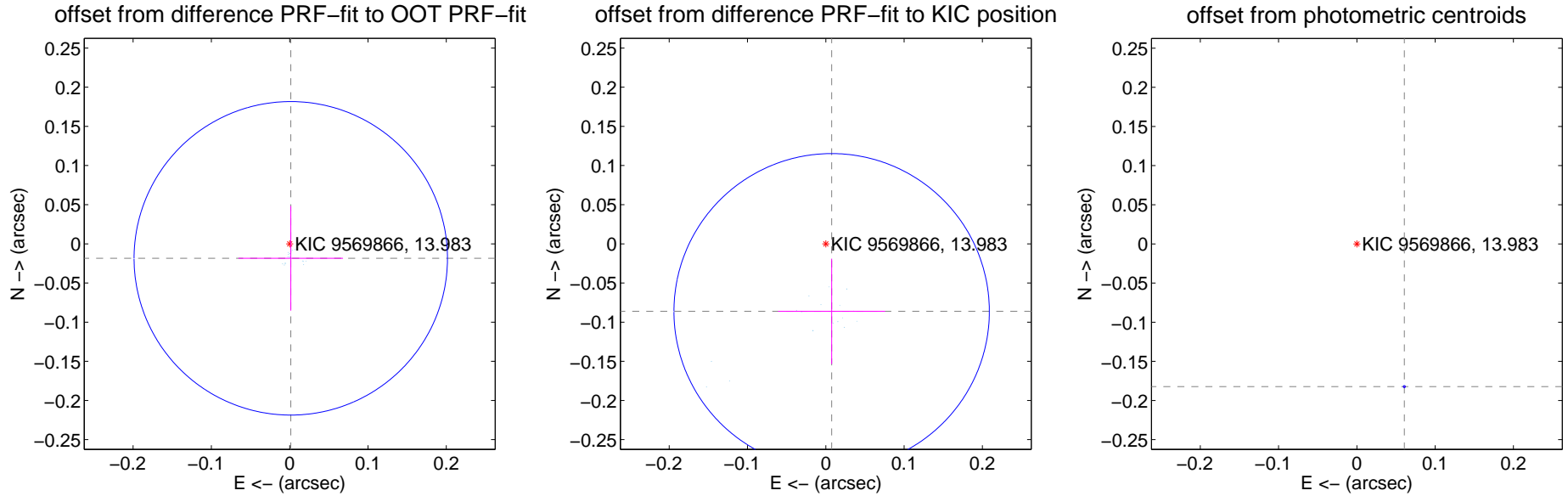
DV Centroid Data

Supplemental centroid analysis for 009569866-01. Kepler magnitude: 13.98. Transit SNR 4045.99

There are 17 quarters with good PRF difference image offsets

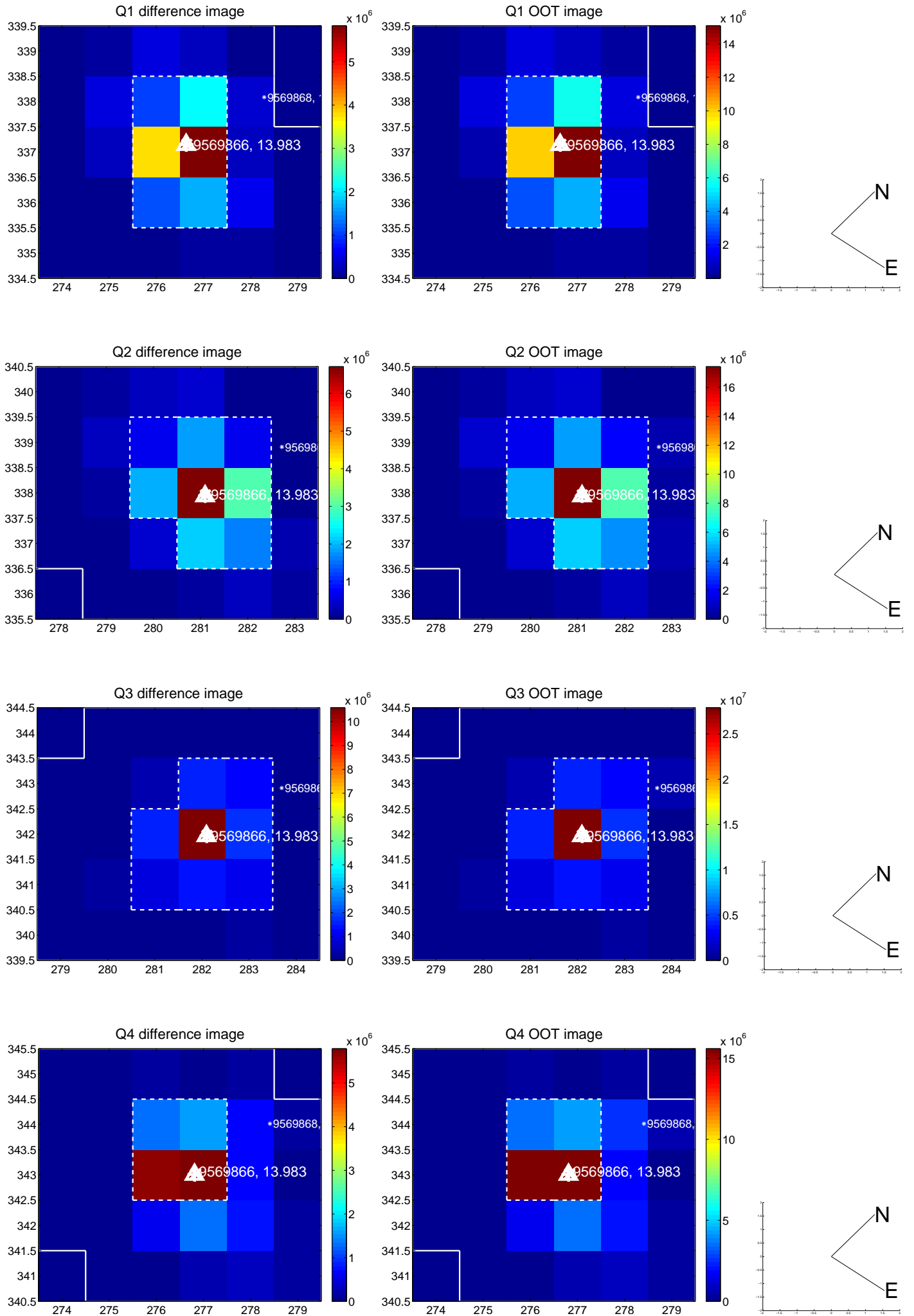
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.067	0.28	-0.001 ± 0.067	-0.018 ± 0.067
PRF-fit source offset from KIC position	0.087 ± 0.067	1.29	-0.007 ± 0.068	-0.086 ± 0.067
photometric centroid source offset	0.19 ± 0.00	438.17	-0.06 ± 0.00	-0.18 ± 0.00

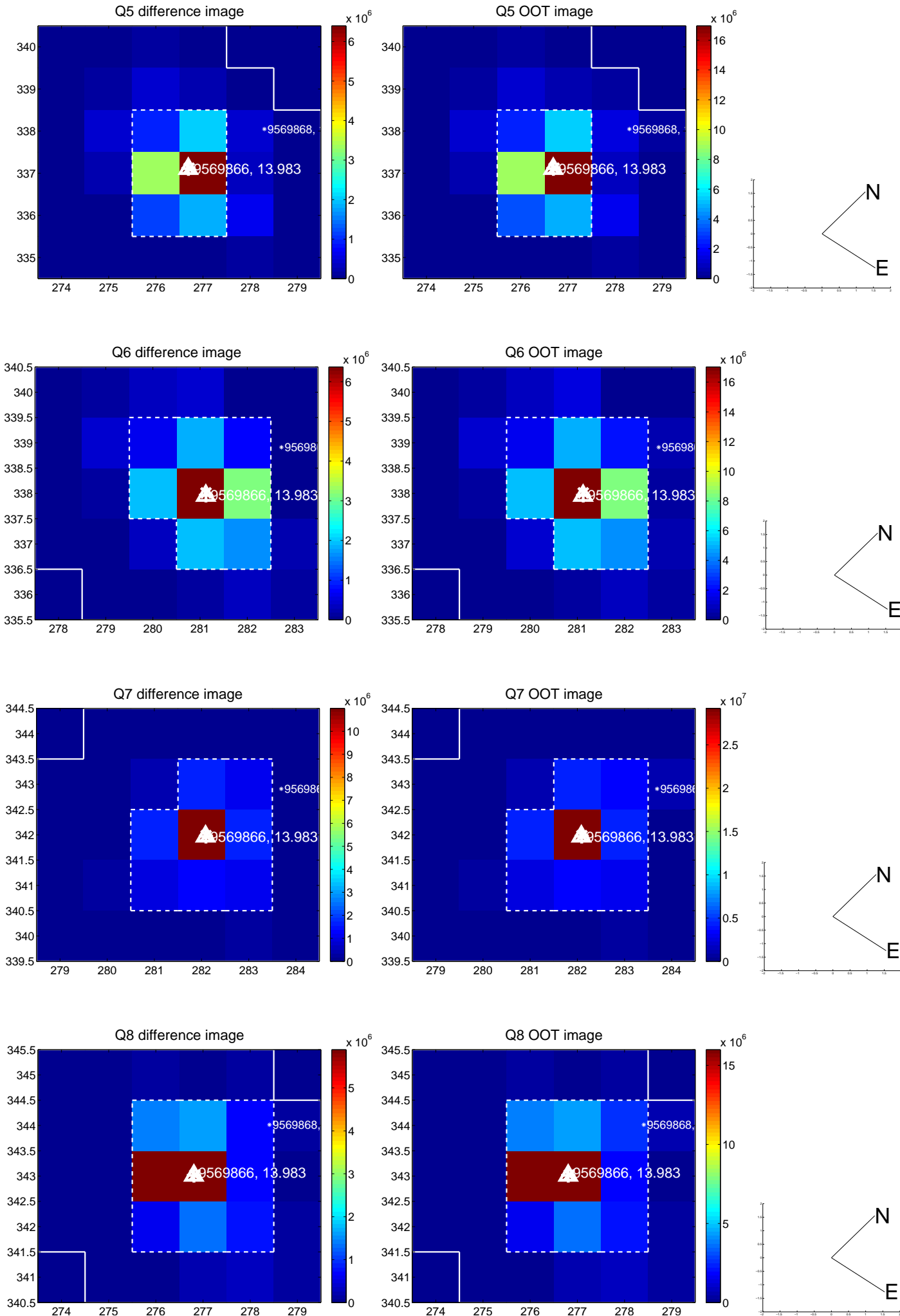


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

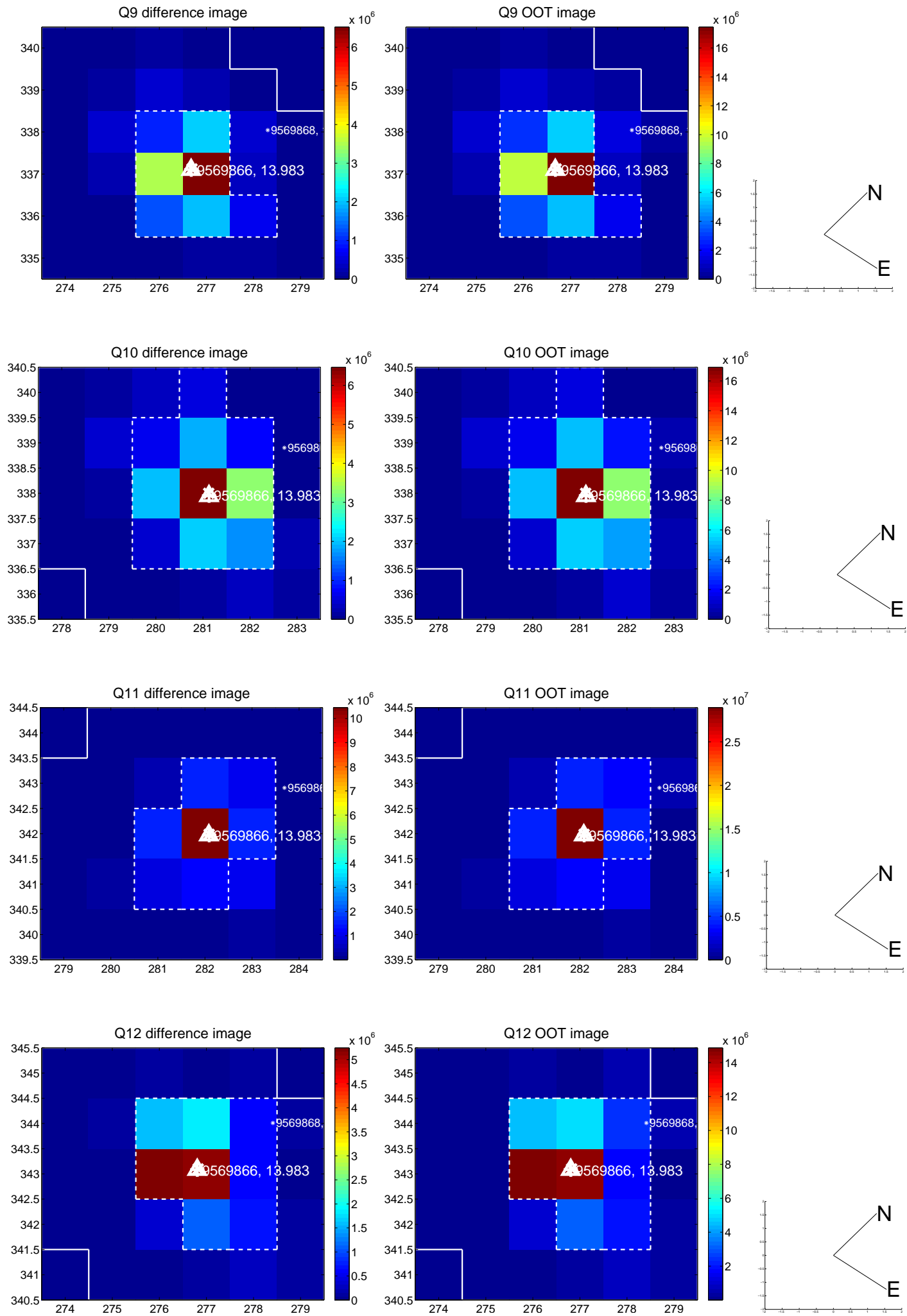
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



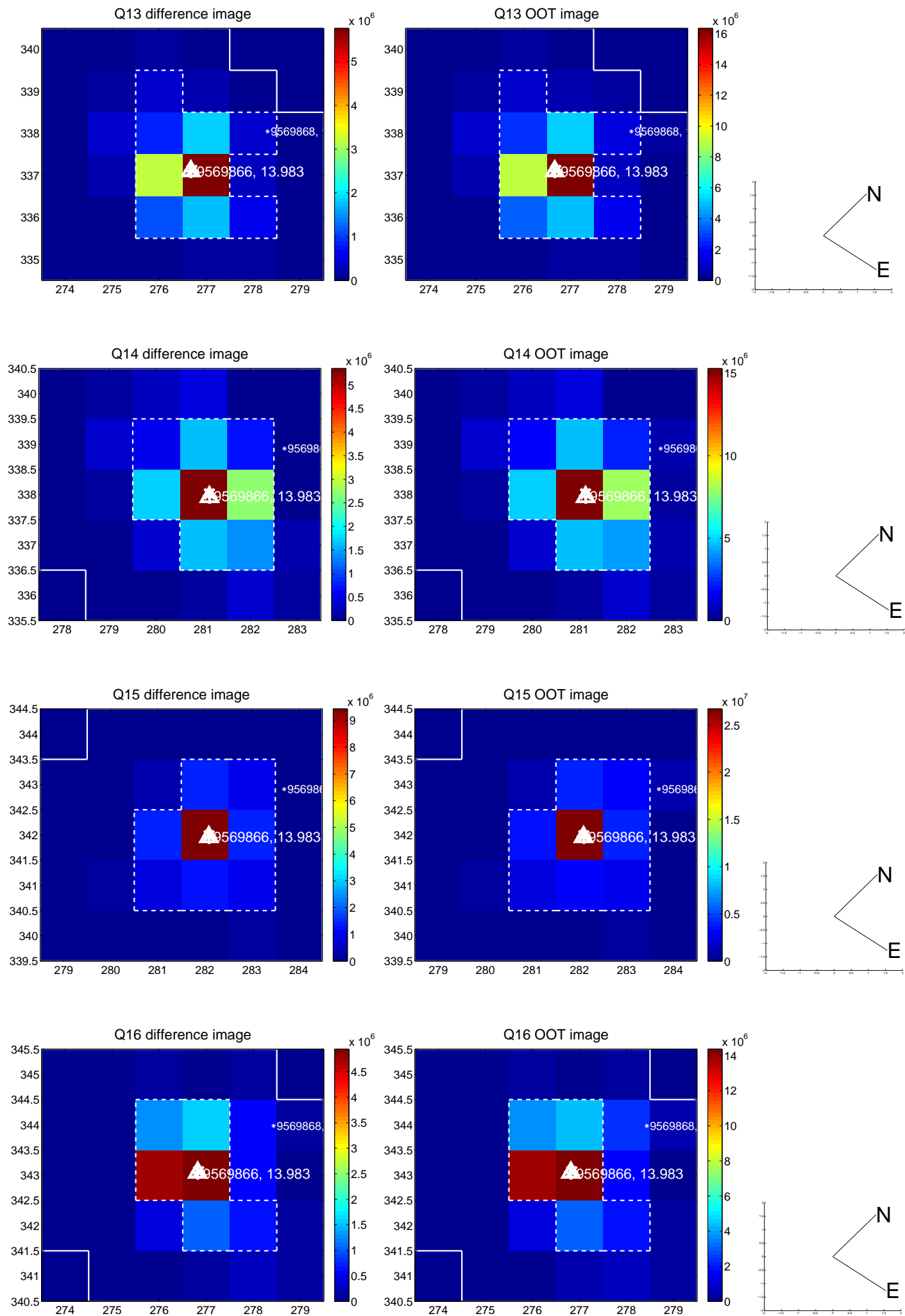
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



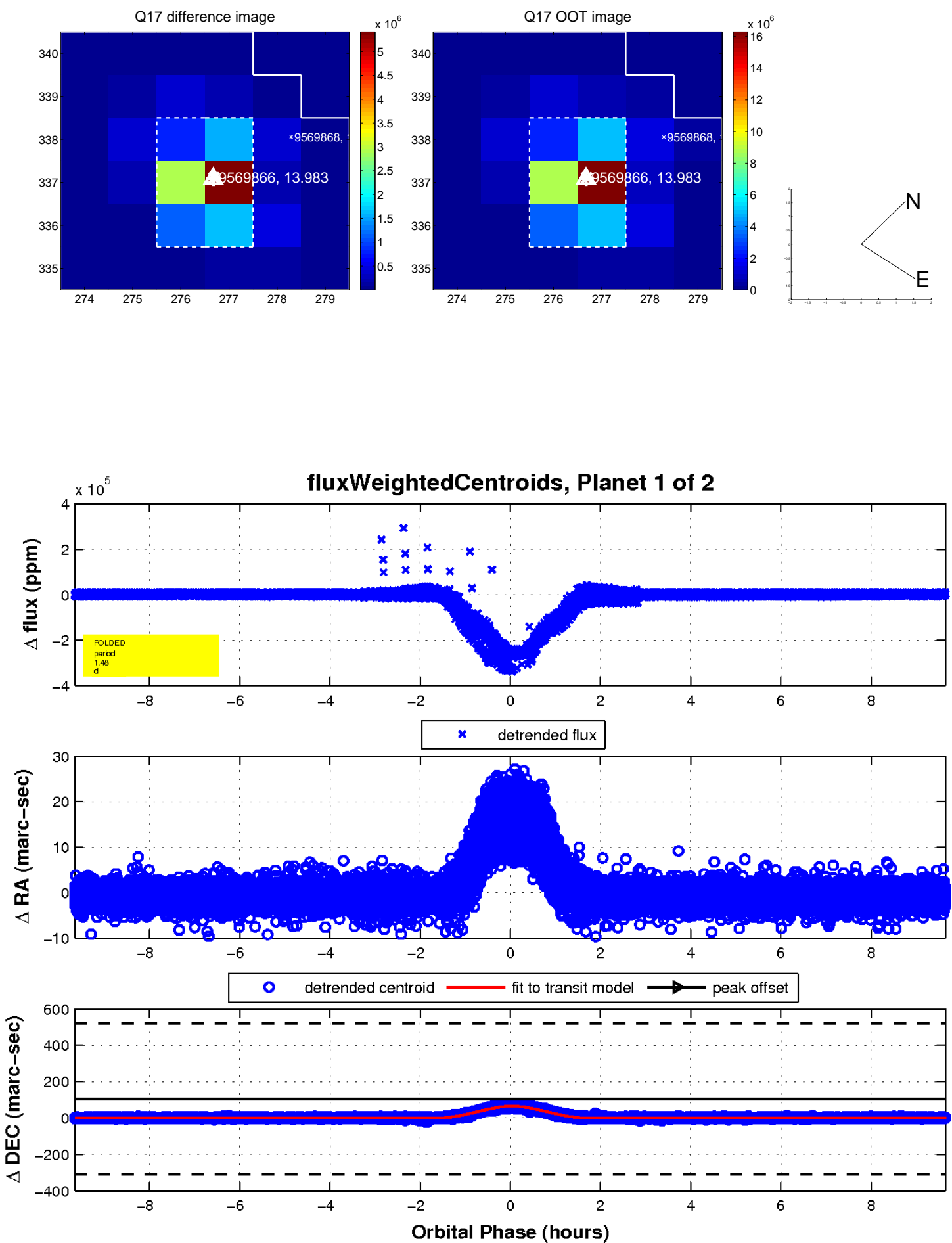
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

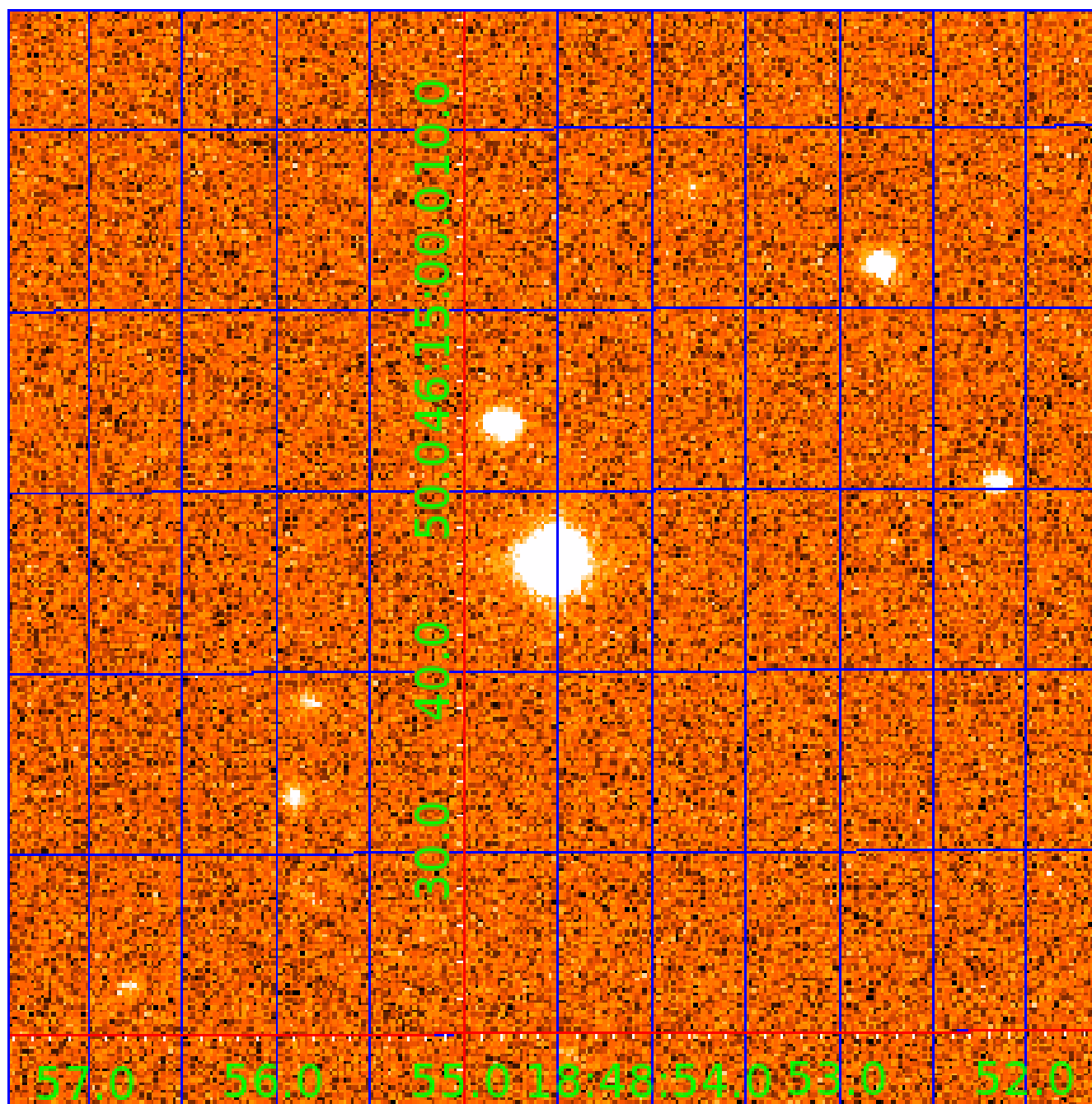


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009569866

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})
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009569866-02	OBS	No	0.740159	131.754744	34251.7	1.500	3159.9	-1.0	0.72	5260	13.16	1775.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009569866-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
009569866-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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

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

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

Ephemeris Match Information For 009569866-02

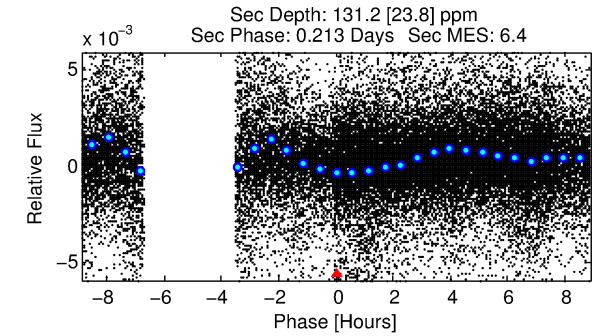
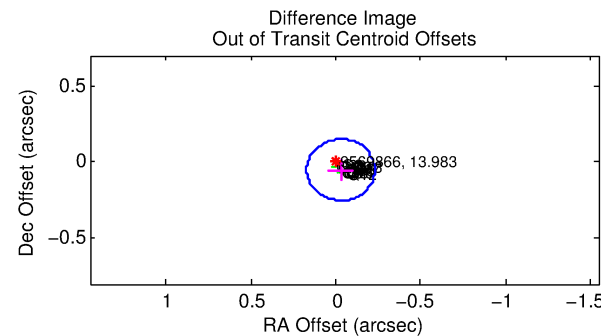
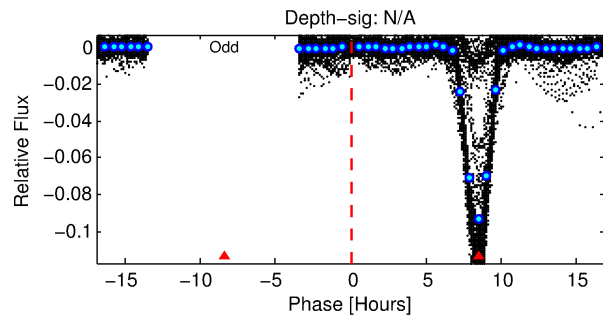
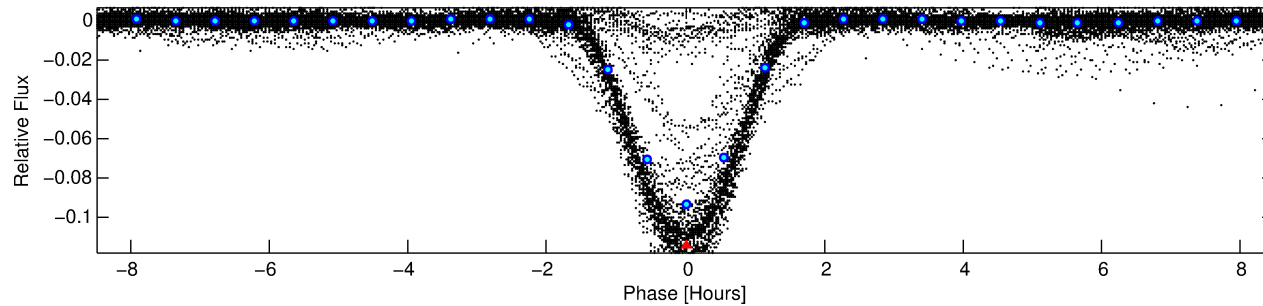
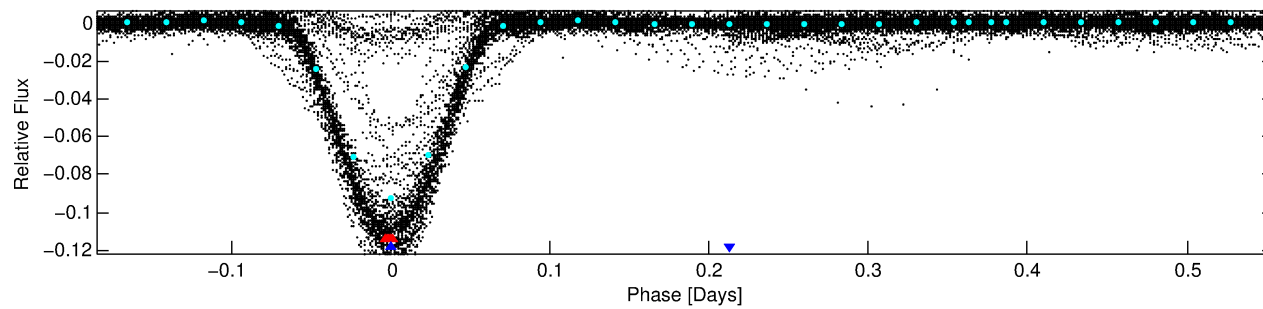
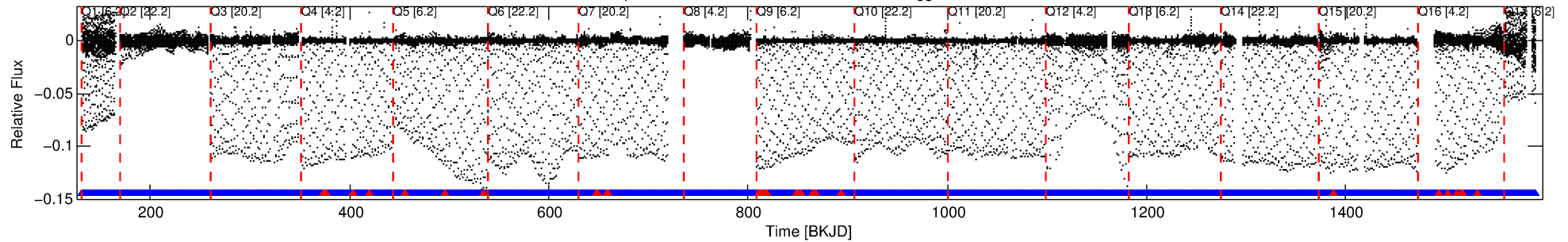
No Significant Match Found

DV One-Page Summary

KIC: 9569866 Candidate: 2 of 2 Period: 0.740 d

KOI: K07191 Corr: No Ephemeris Match

Kp: 13.98 R*: 0.72 Rs Teff: 5260.0 K Logg: 4.56 Fe/H: -0.580



TPS TCE Results:

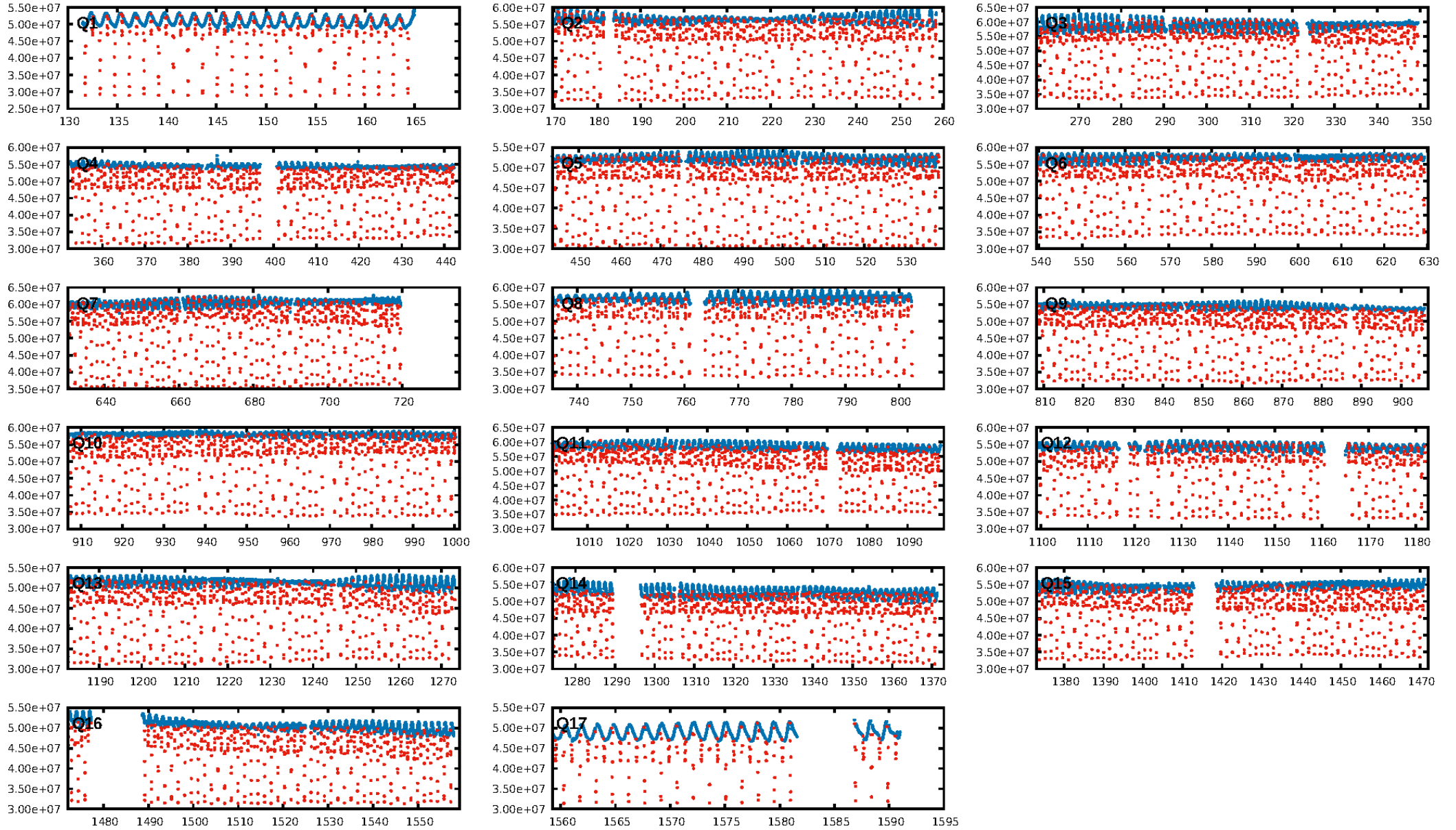
Period = 0.74016 d
Epoch = 131.7547 BKJD

DV fit results are unavailable

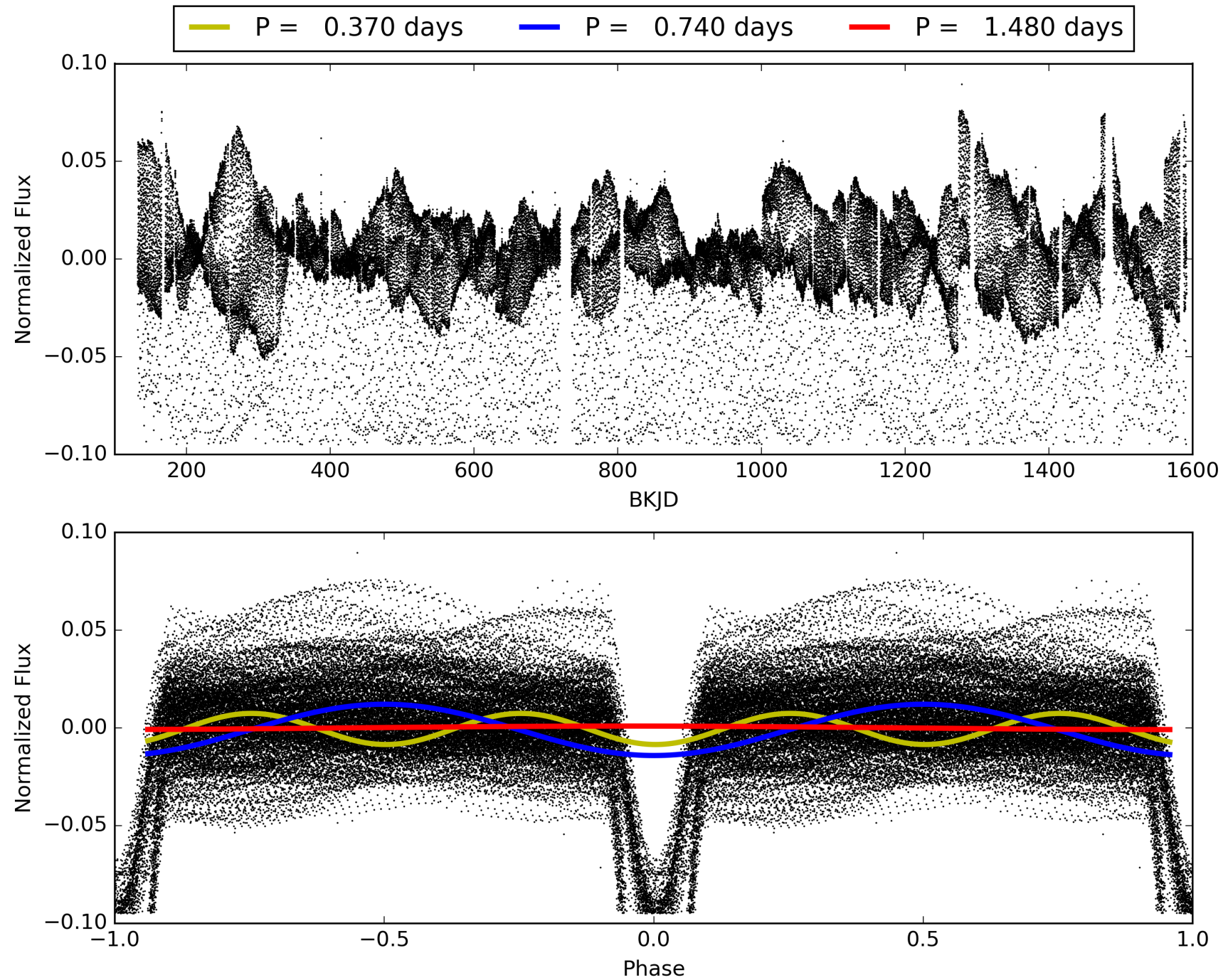
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [5.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [834/863]
GhostDiagnostic-chr: 1.14
Centroid-sig: N/A
Centroid-so: 0.183 arcsec [251.03σ]
OotOffset-rm: 0.058 arcsec [0.87σ]
KicOffset-rm: 0.134 arcsec [1.99σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009569866-02, PDC Light Curves

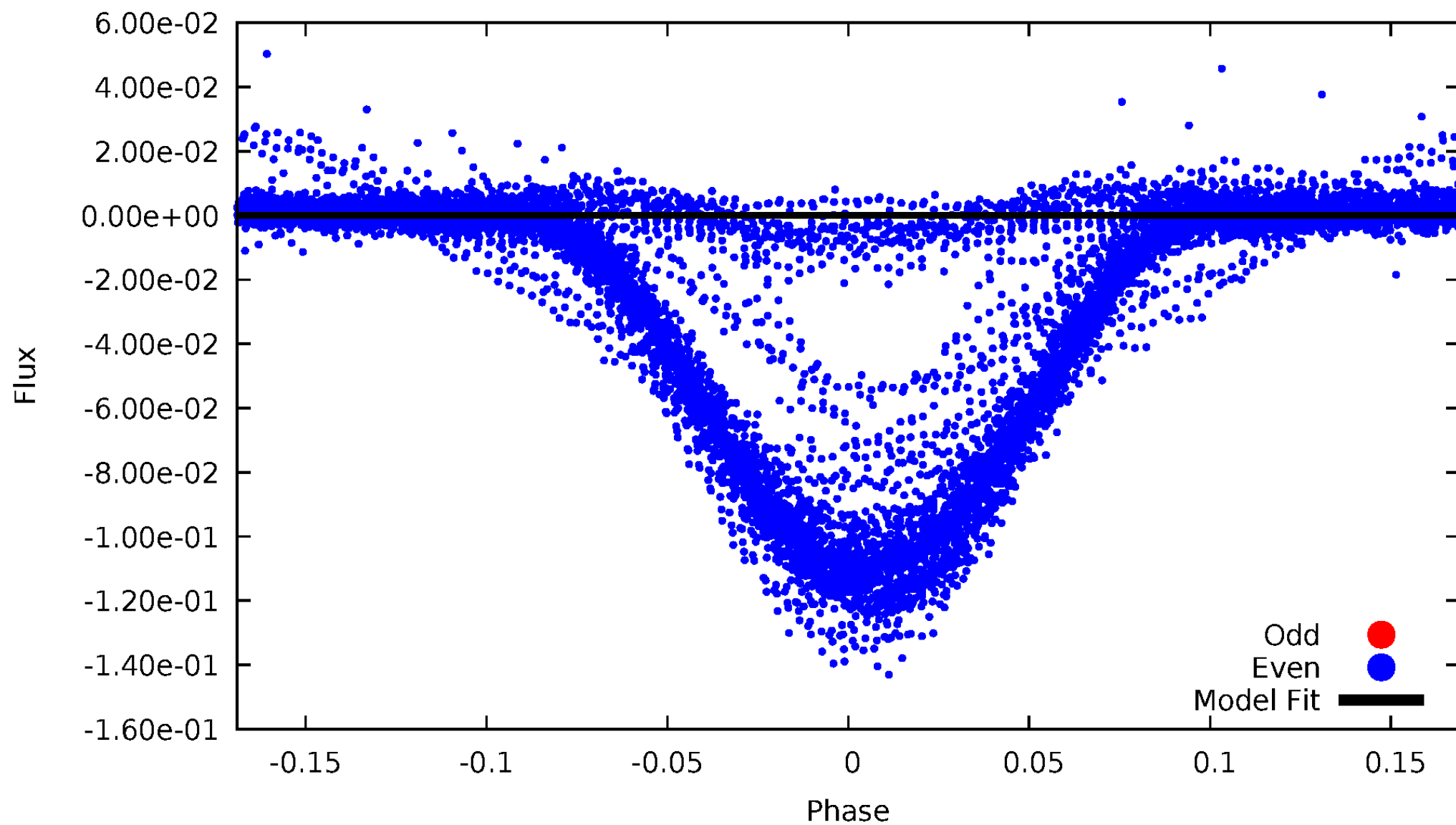


TCE 009569866-02



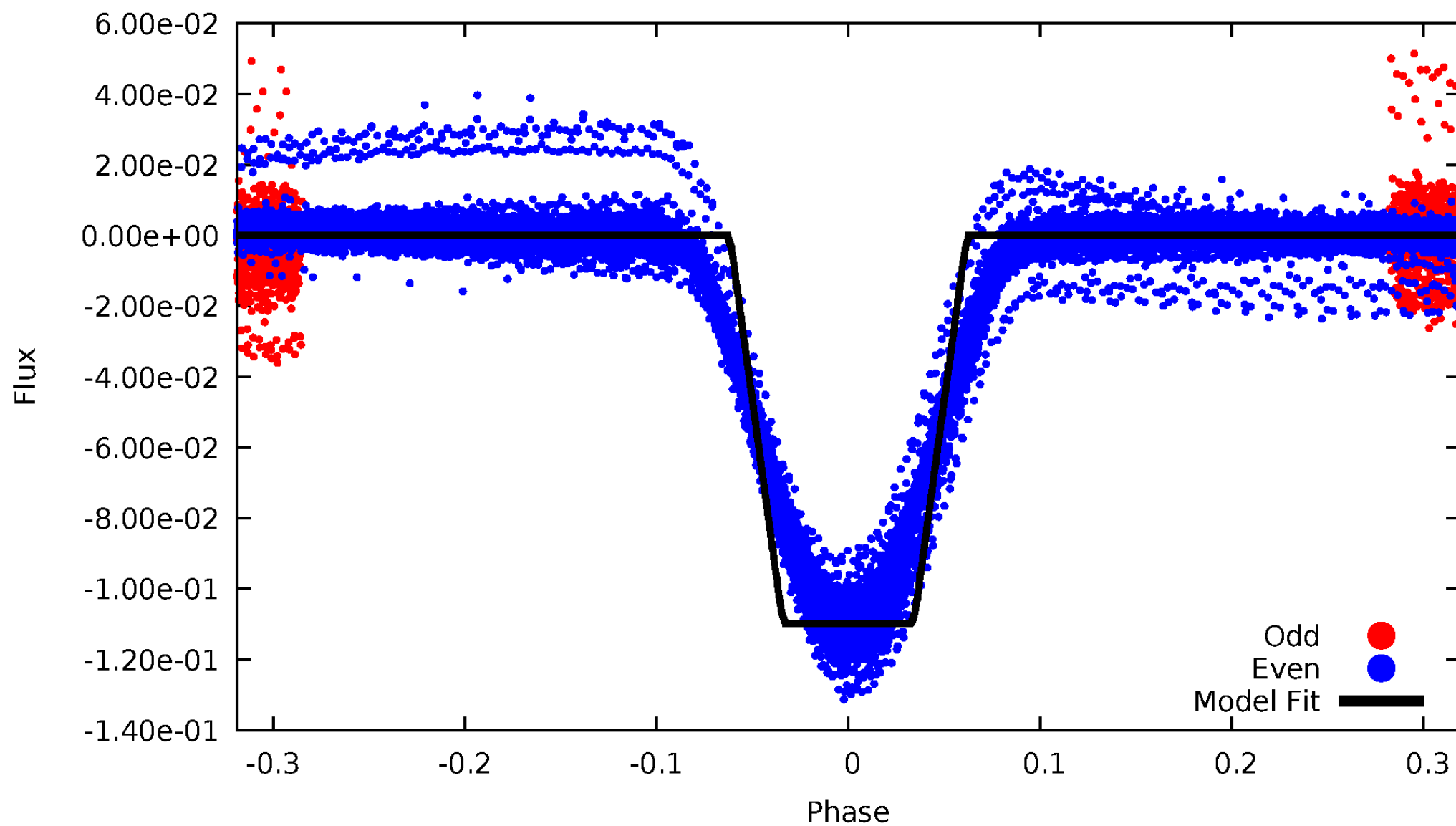
DV Odd/Even

TCE 009569866-02



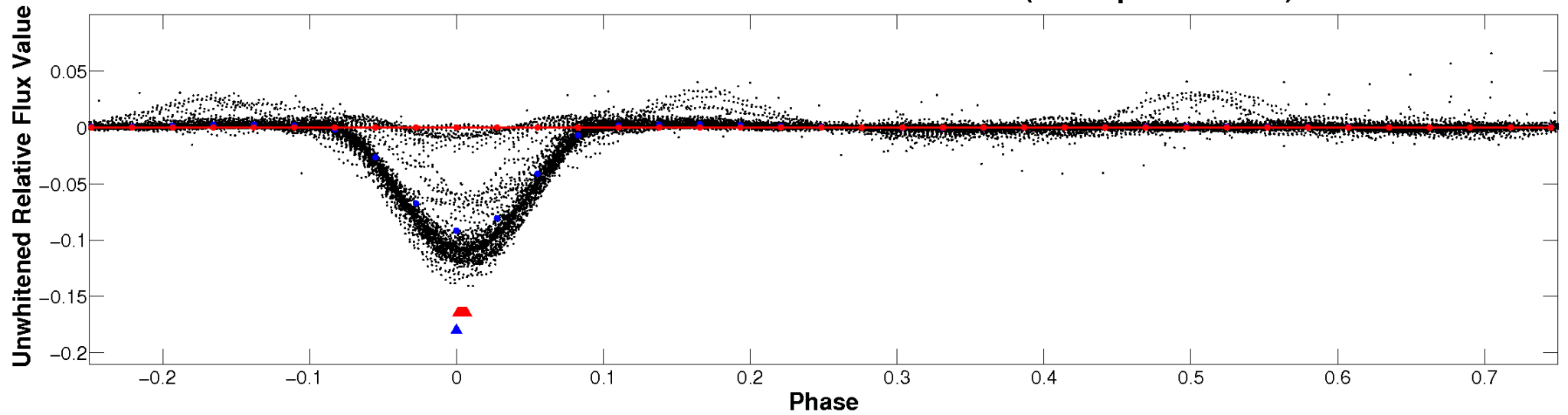
ALT Odd/Even

TCE 009569866-02

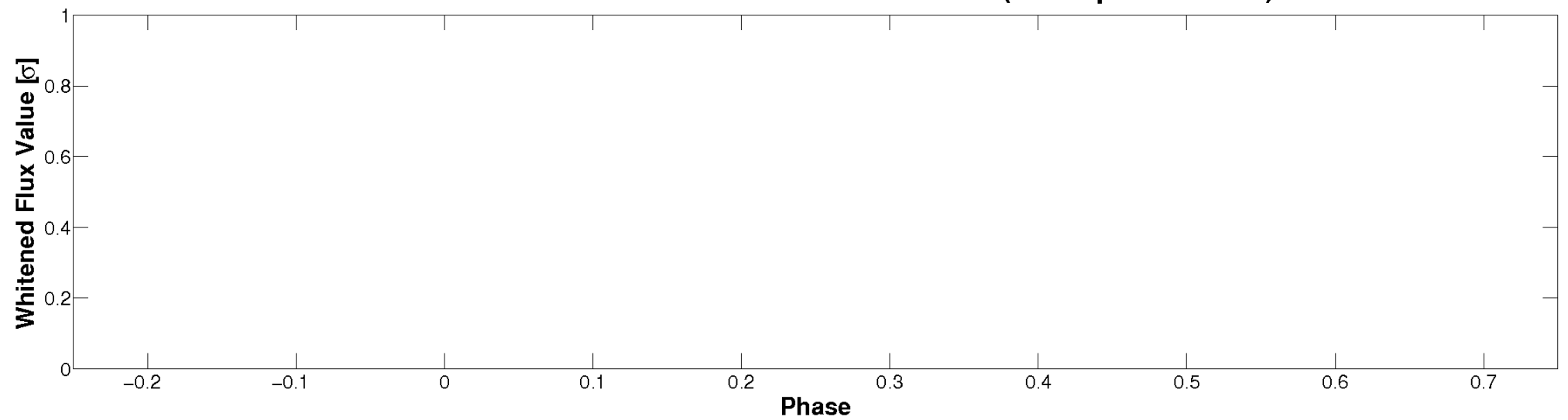


Non-Whitened Vs. Whitened Light Curve

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

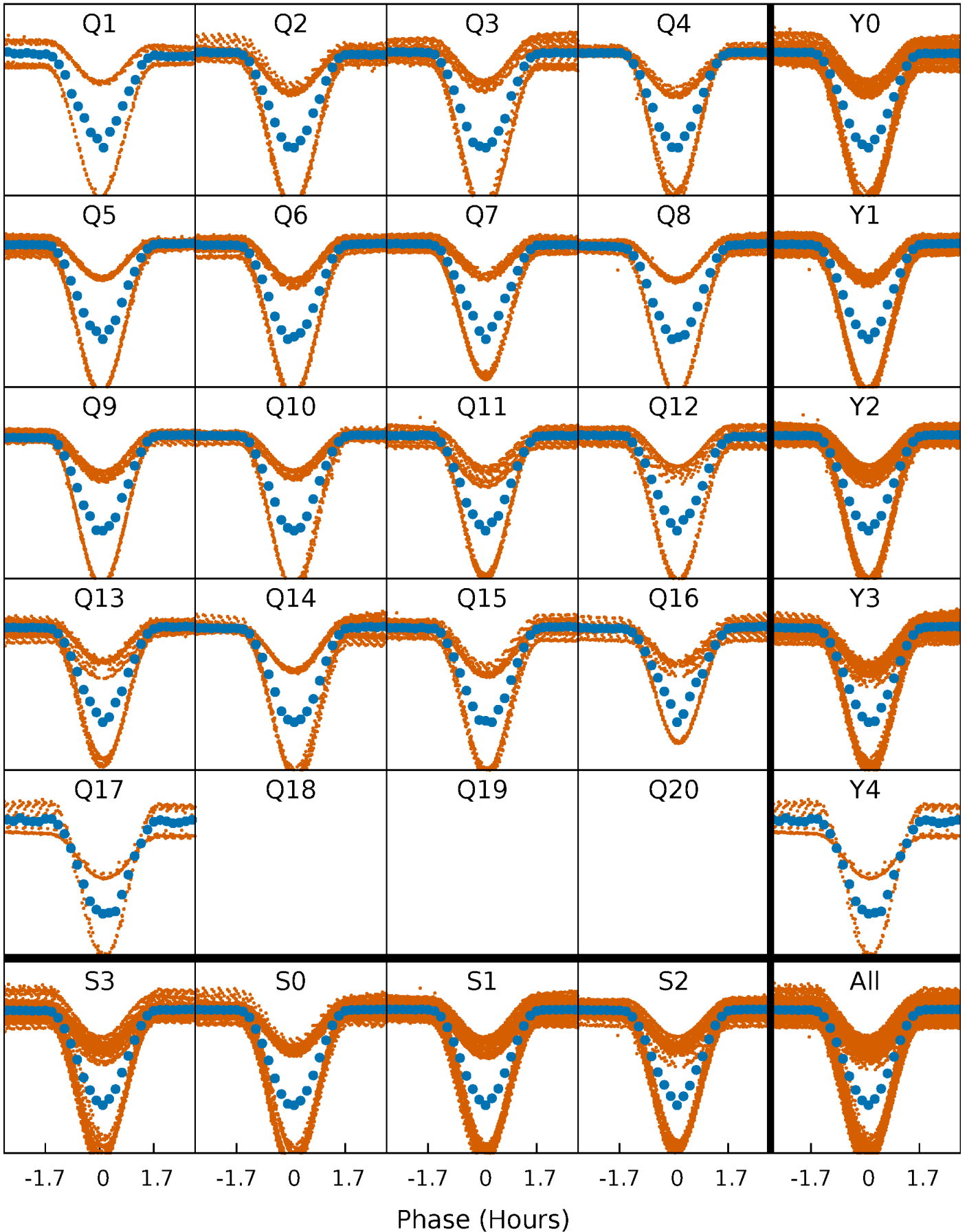


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



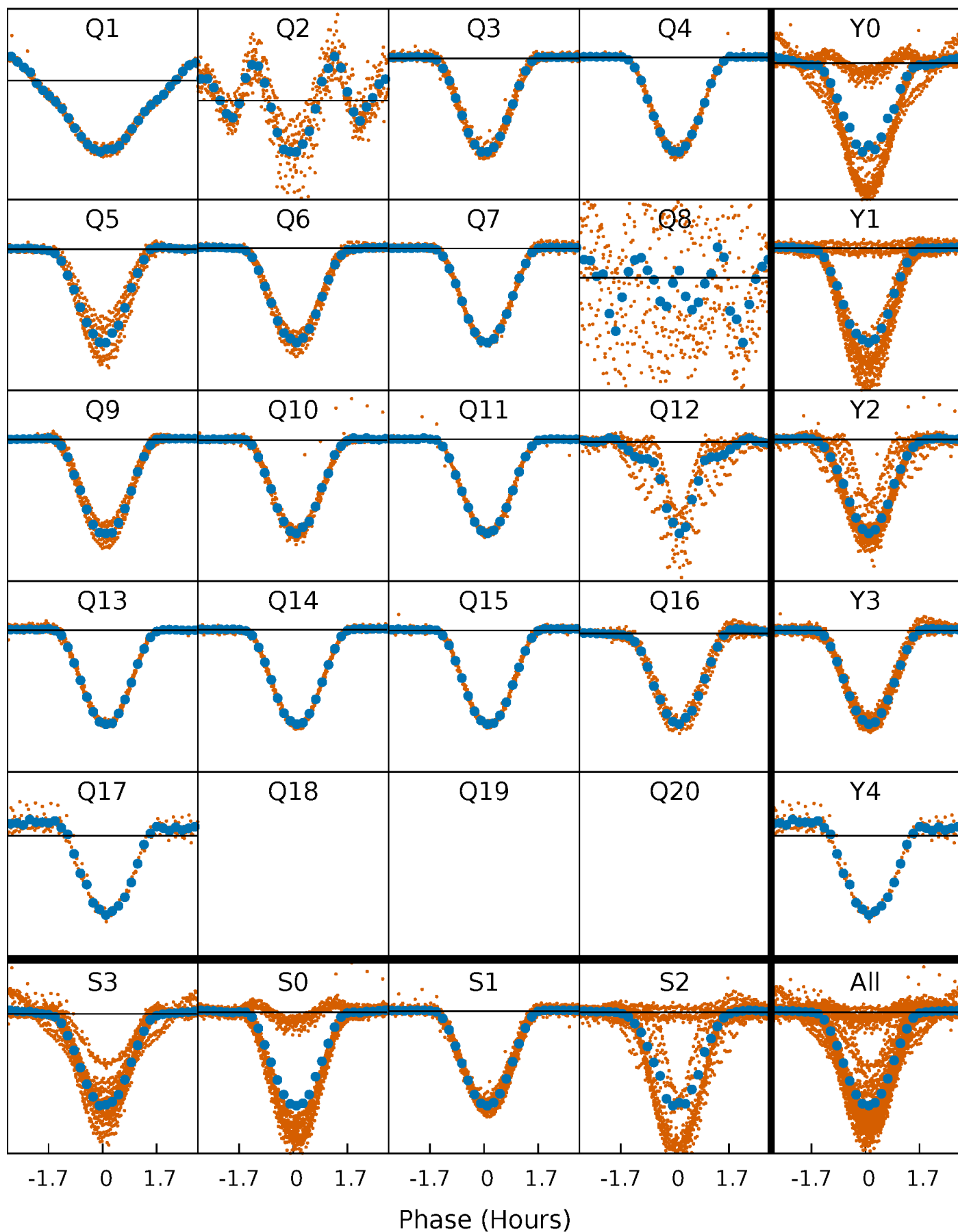
PDC Quarter-Phased Transit Curves

TCE 009569866-02 P= 0.740159 Days $T_0=131.754744$ (BKJD)



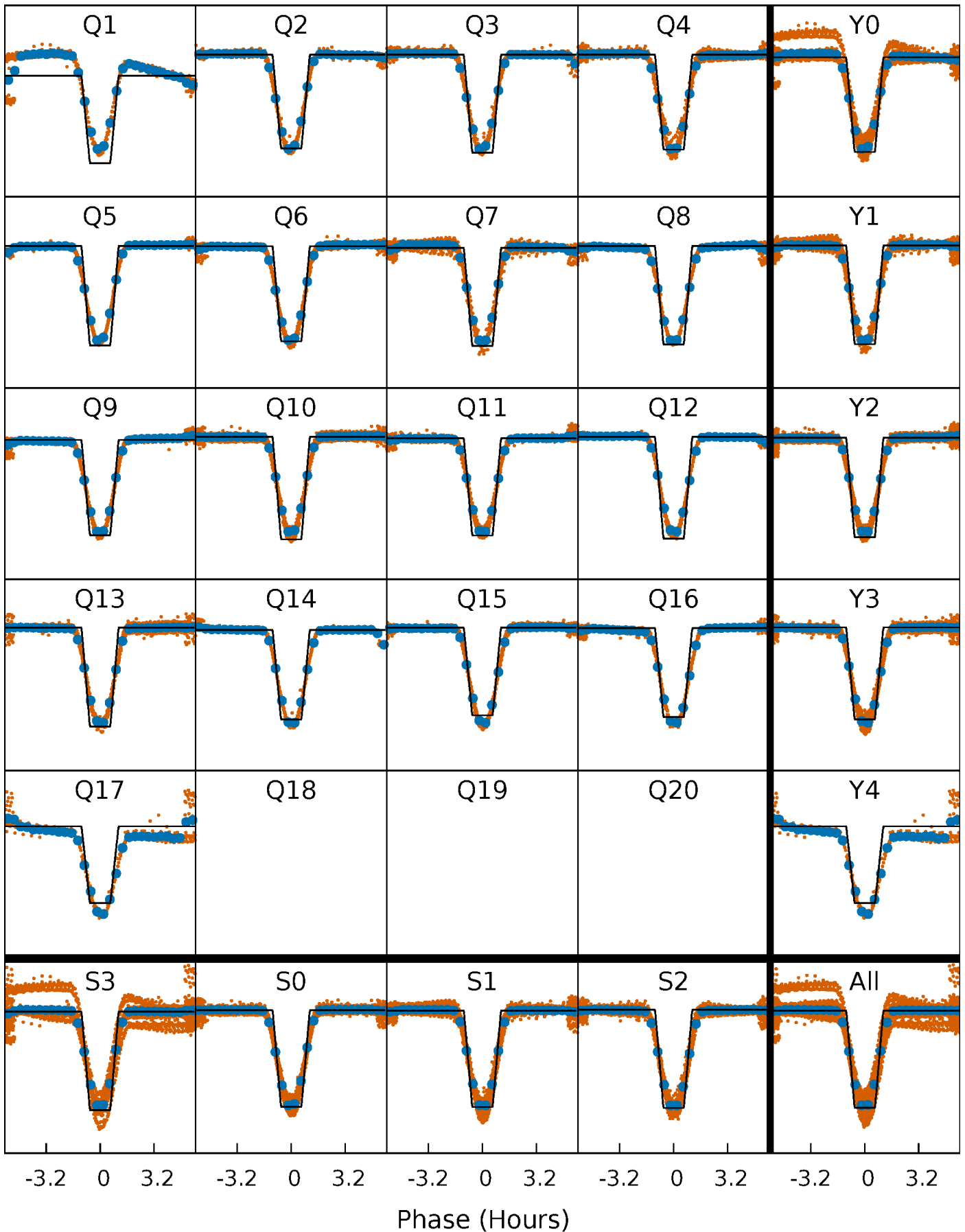
DV Quarter-Phased Transit Curves

TCE 009569866-02 $P = 0.740159$ Days $T_0 = 131.754744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

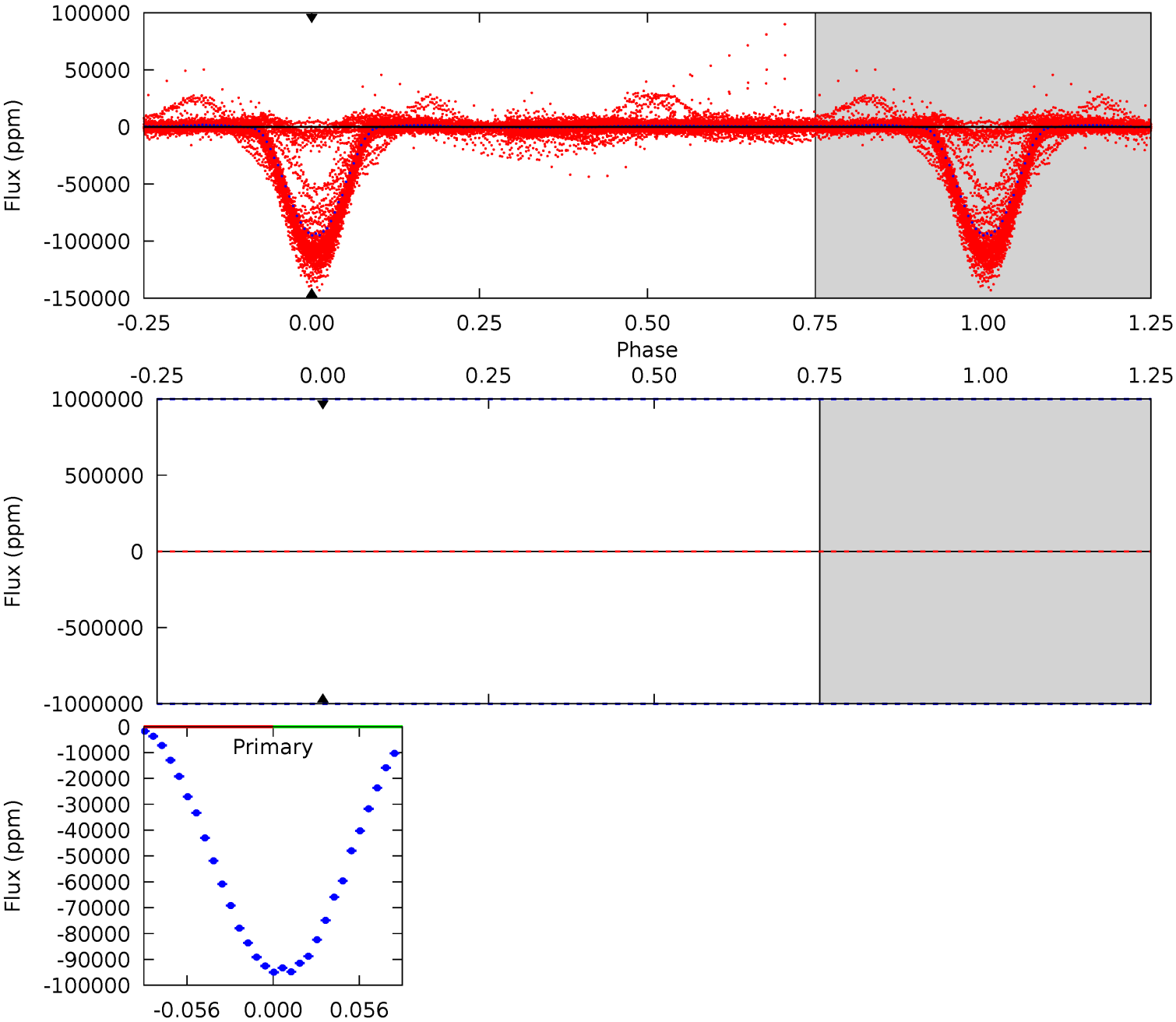
TCE 009569866-02 $P = 0.740159$ Days $T_0 = 131.758543$ (BKJD)



DV Model-Shift Uniqueness Test

009569866-02, P = 0.740159 Days, E = 131.014585 Days

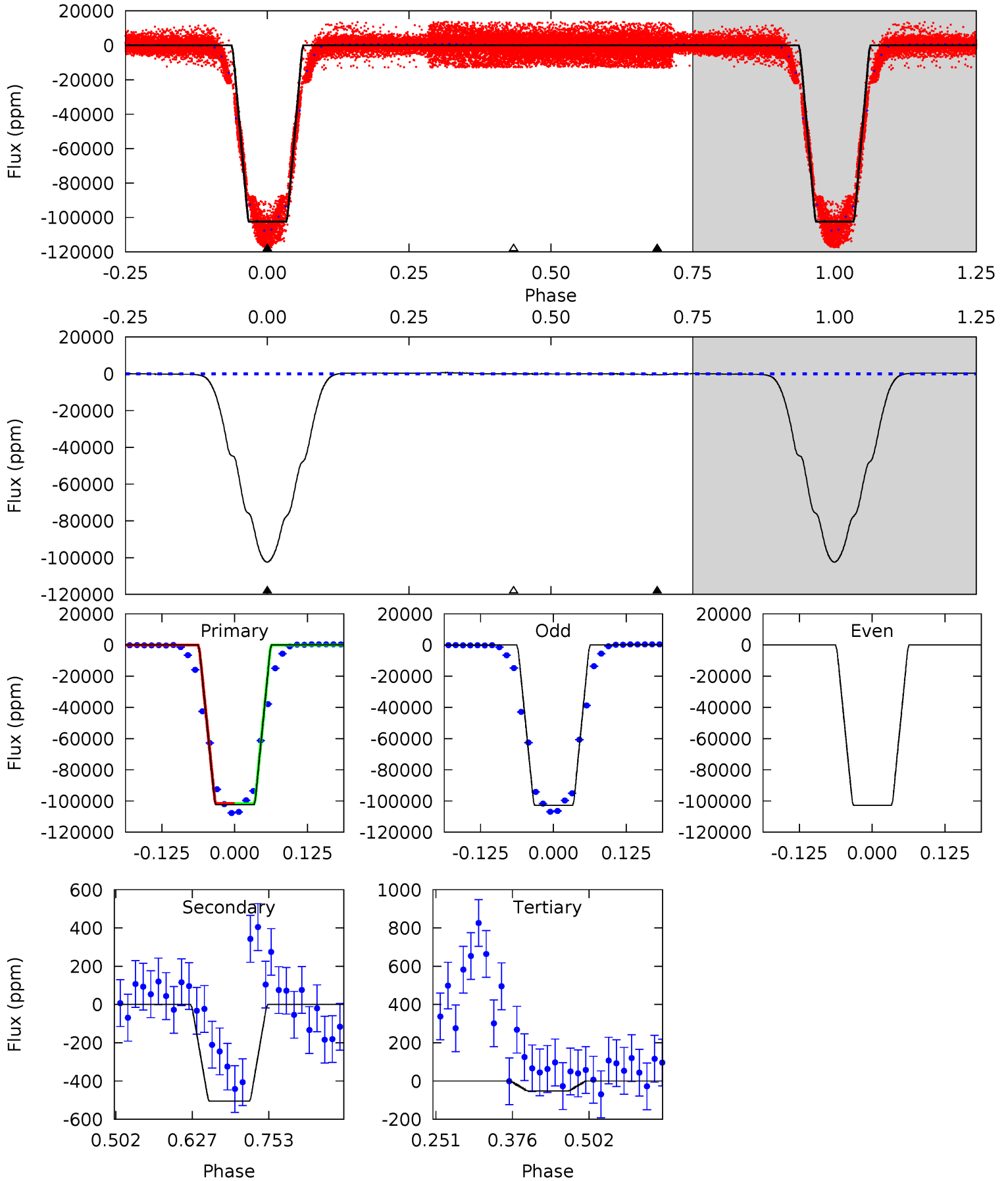
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009569866-02, P = 0.740159 Days, E = 131.018384 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1470	7.26	0.74	0	4.52	1.53	3.60	1469	1470	6.52	7.26	0	1.01	0.01	1.73



Stellar Parameters For KIC 009569866

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5260^{+157}_{-141}	$4.560^{+0.082}_{-0.060}$	$-0.580^{+0.350}_{-0.300}$	$0.717^{+0.080}_{-0.072}$	$0.680^{+0.091}_{-0.035}$	$2.599^{+0.918}_{-0.513}$
	+3%/-3%	+2%/-1%	+60%/-52%	+11%/-10%	+13%/-5%	+35%/-20%
Source	PHO1	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 009569866-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$13.62^{+7.45}_{-6.63}$	2311^{+96}_{-87}	3232^{+4493}_{-10825}	$1.727^{+79.707}_{-74.877}$
Alt.	-505 ± 70	$25.81^{+8.23}_{-7.92}$	2312^{+83}_{-94}	-2545^{+189}_{-92}	$0.084^{+0.097}_{-0.037}$

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 $A_{obs} \gg 1.0$

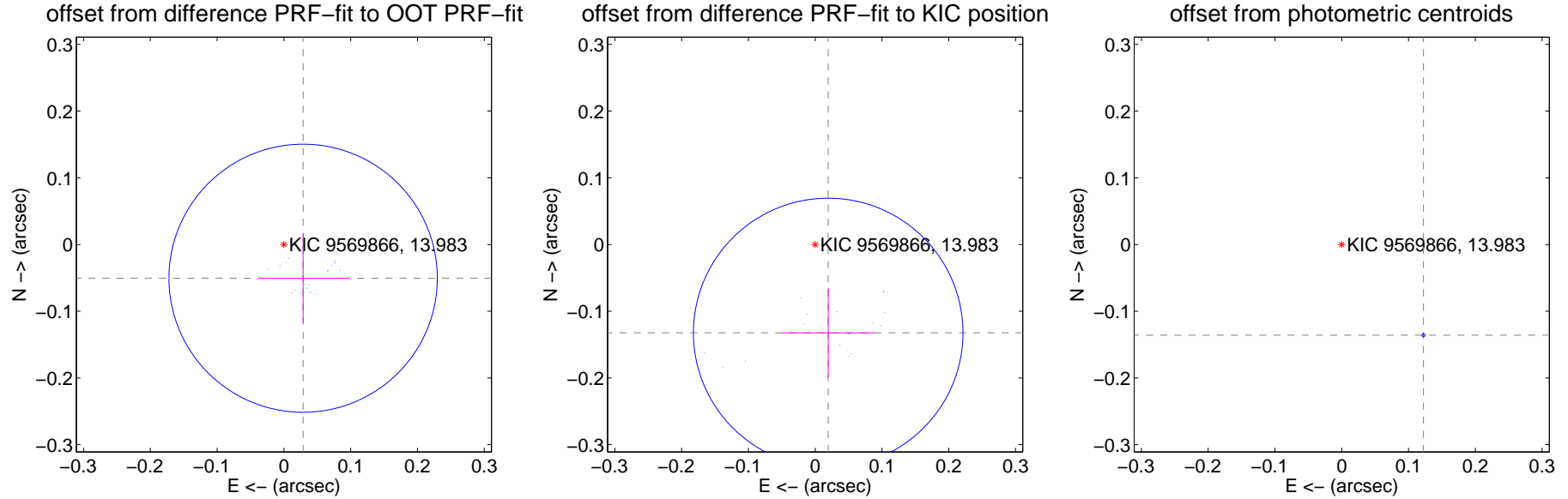
DV Centroid Data

Supplemental centroid analysis for 009569866-02. Kepler magnitude: 13.98. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

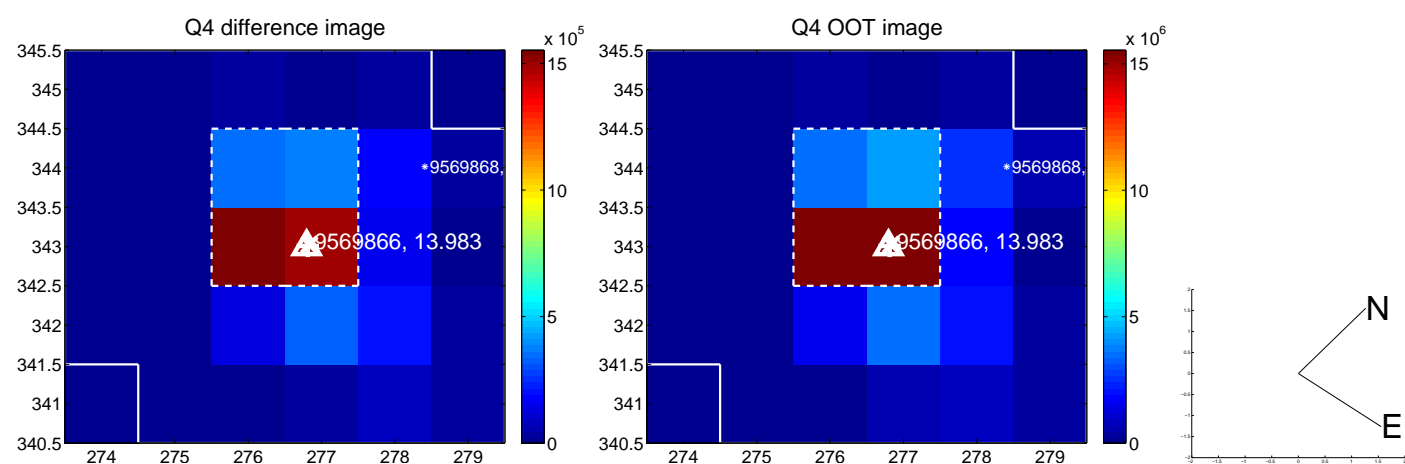
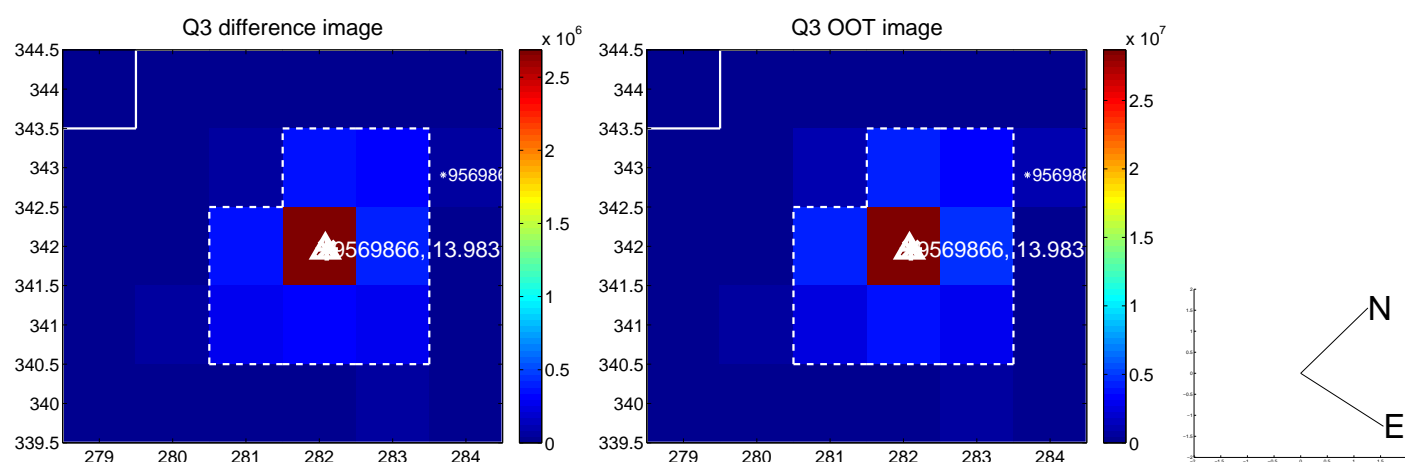
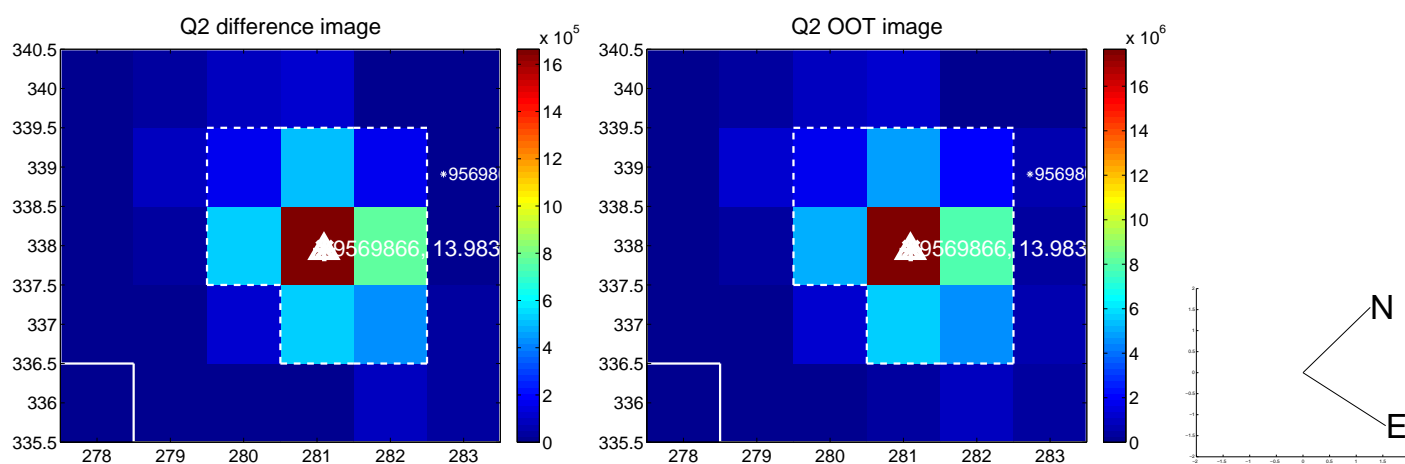
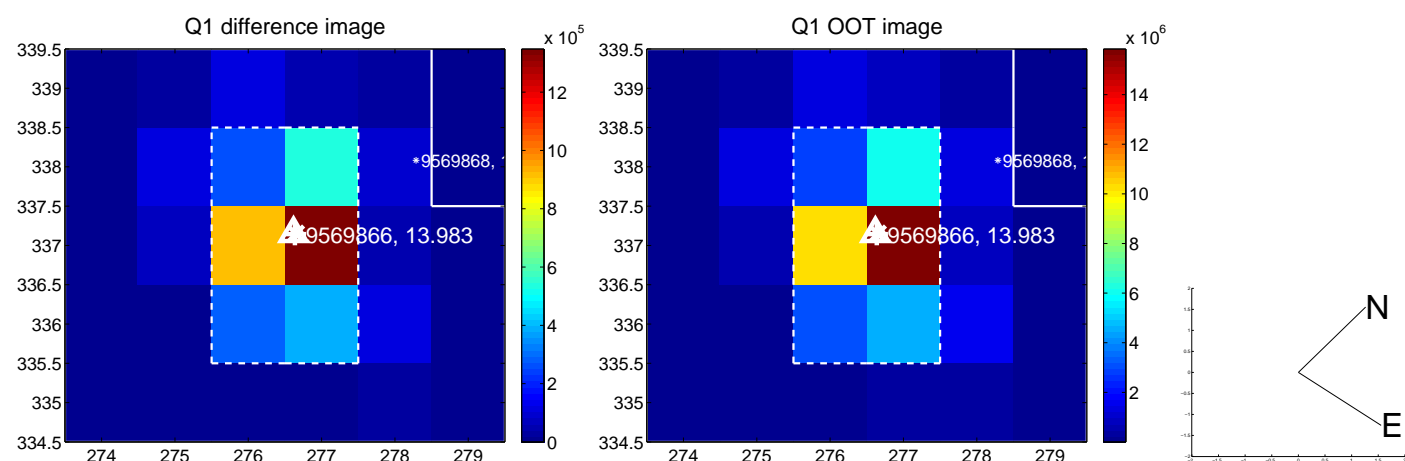
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.058 ± 0.067	0.87	-0.029 ± 0.067	-0.051 ± 0.067
PRF-fit source offset from KIC position	0.134 ± 0.067	1.99	-0.019 ± 0.069	-0.132 ± 0.067
photometric centroid source offset	0.18 ± 0.00	251.03	-0.12 ± 0.00	-0.14 ± 0.00

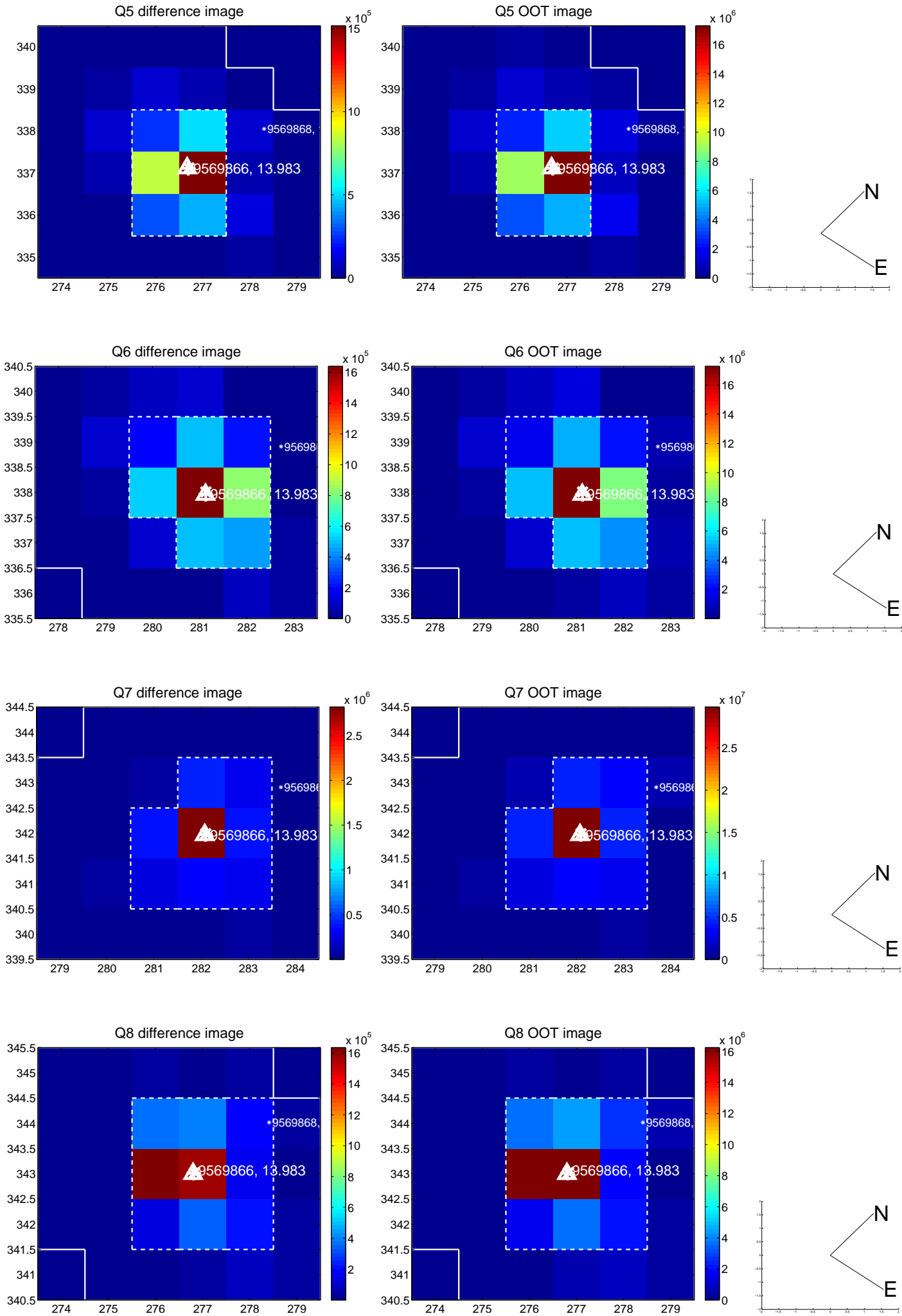


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

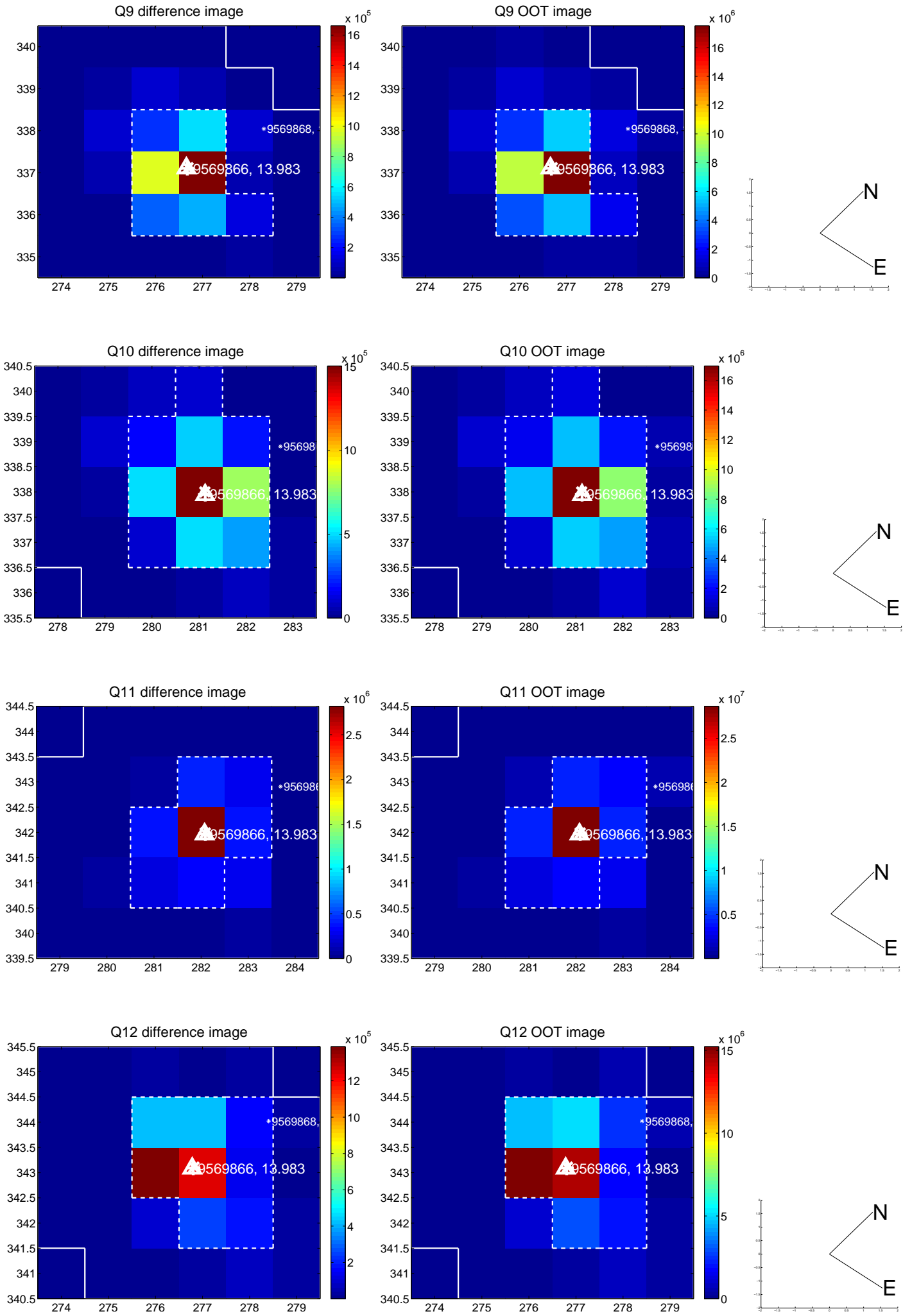
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



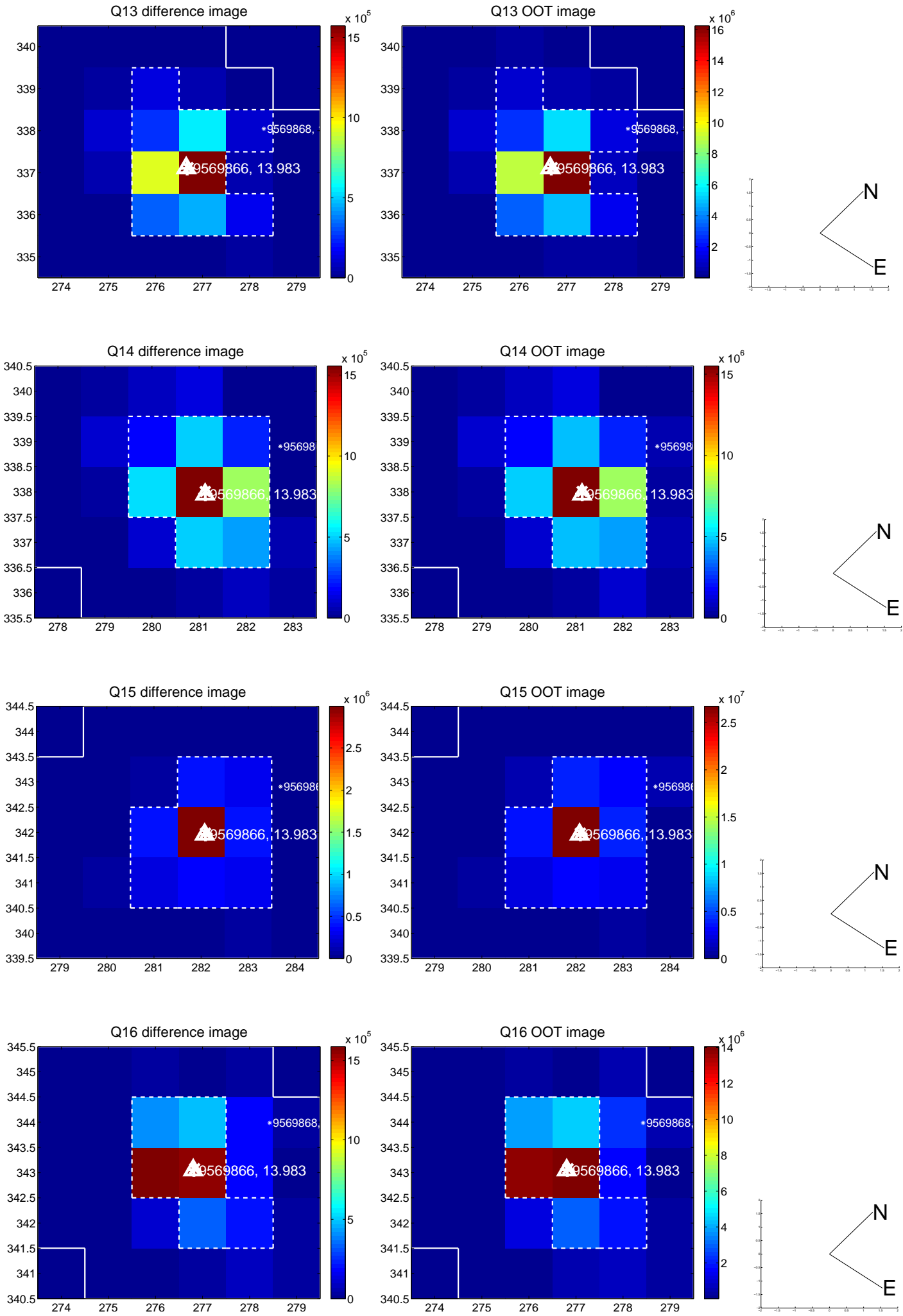
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



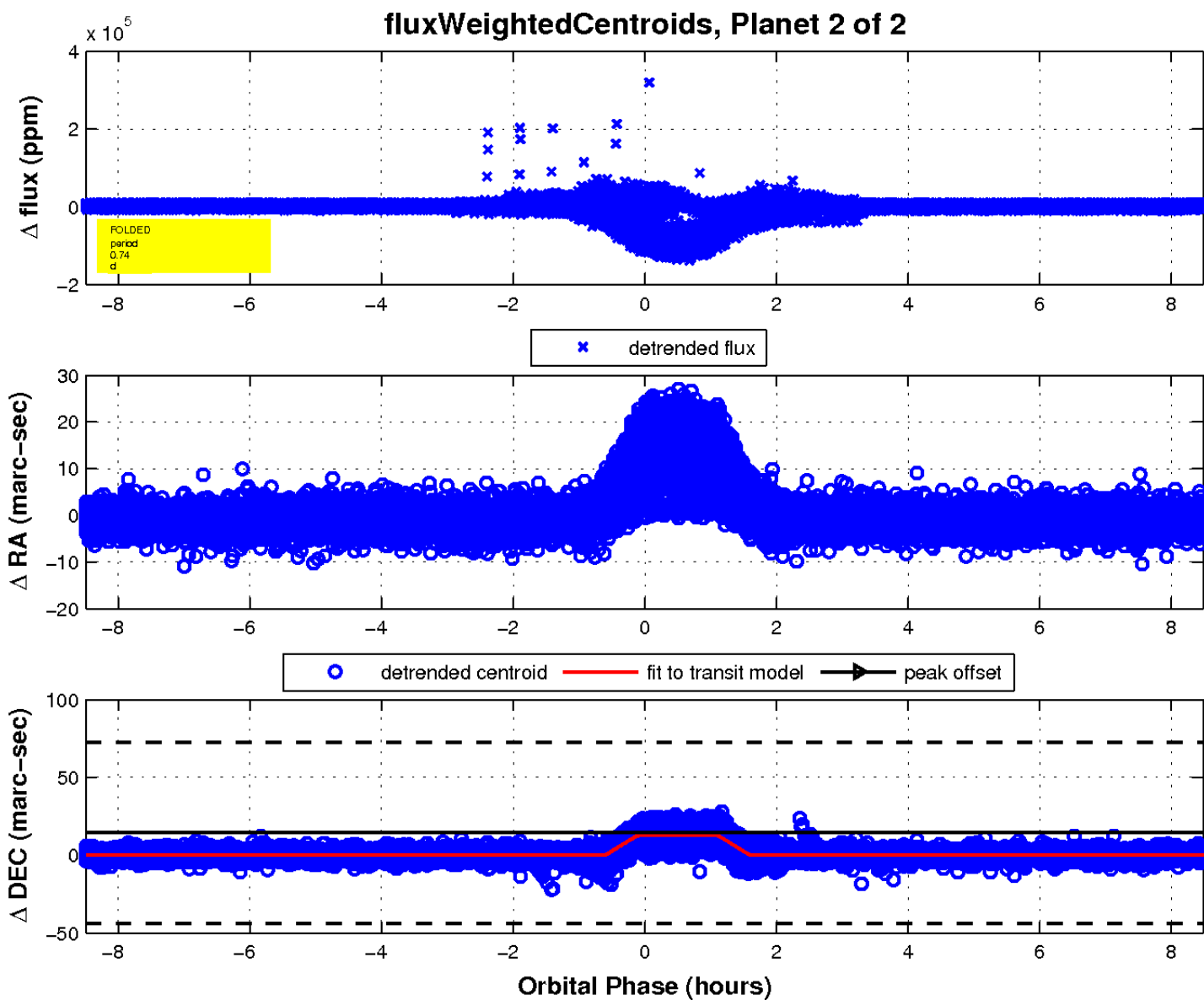
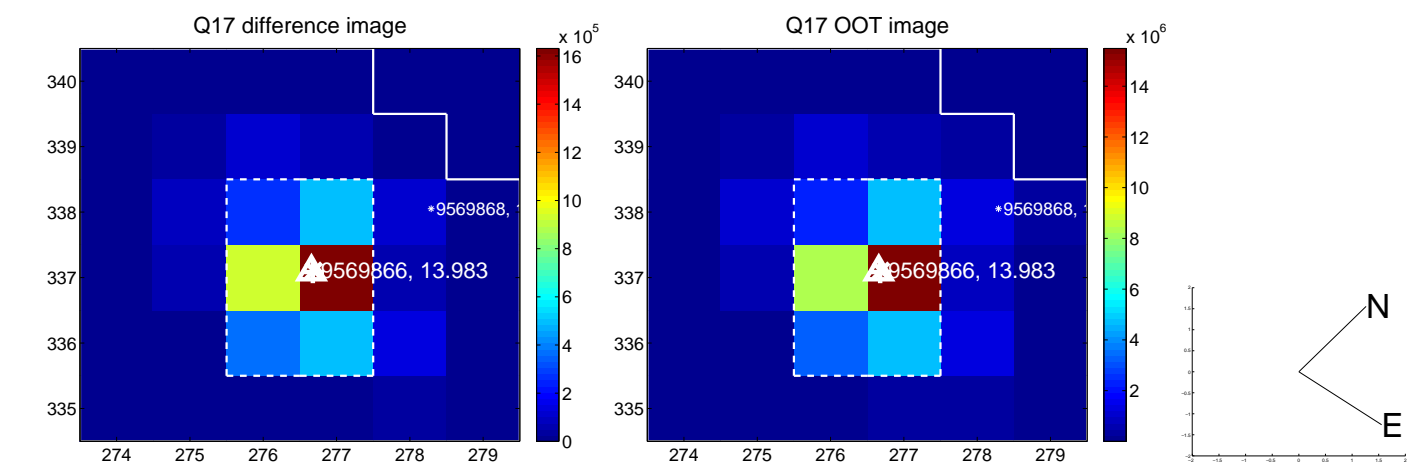
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

