

KIC 012251779

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})
012251779-01	OBS	7517.01	14.844242	134.233738	83617.0	6.839	5243.2	4684.3	0.99	6161	29.05	102.16
012251779-02	OBS	No	14.844233	145.230772	3960.2	5.466	249.5	238.5	0.99	6161	6.99	102.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012251779-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
012251779-02	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.

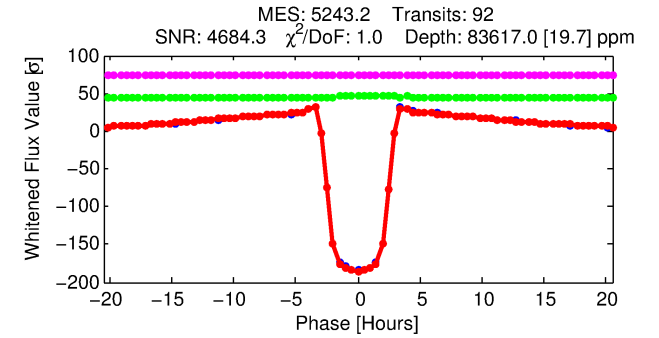
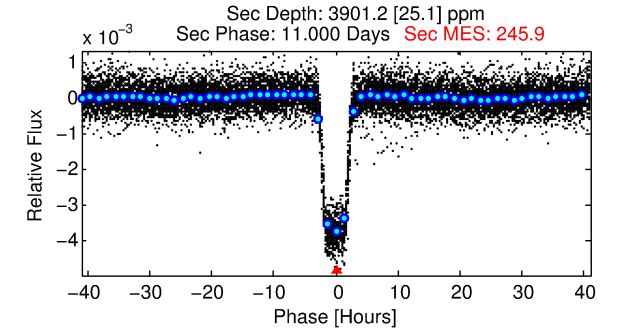
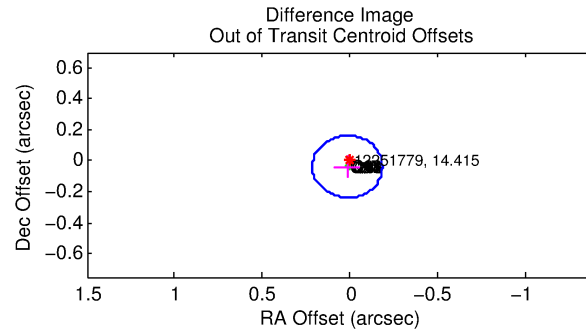
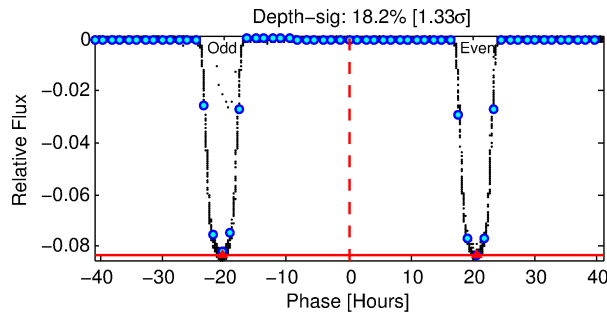
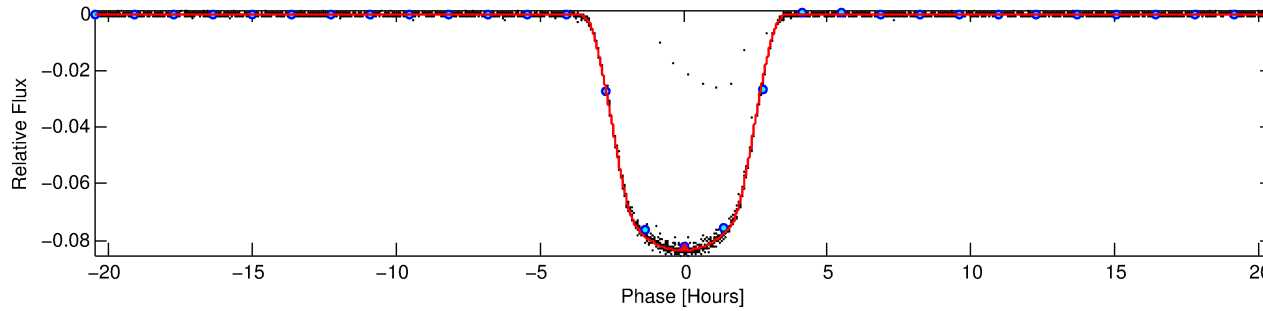
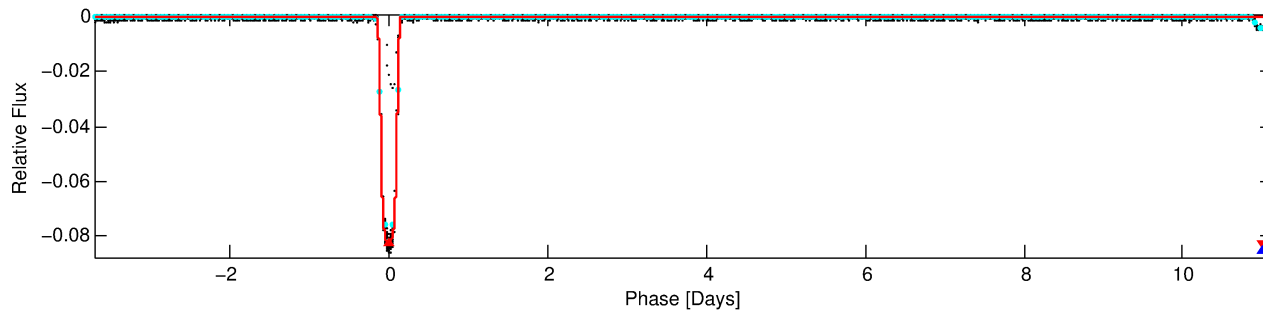
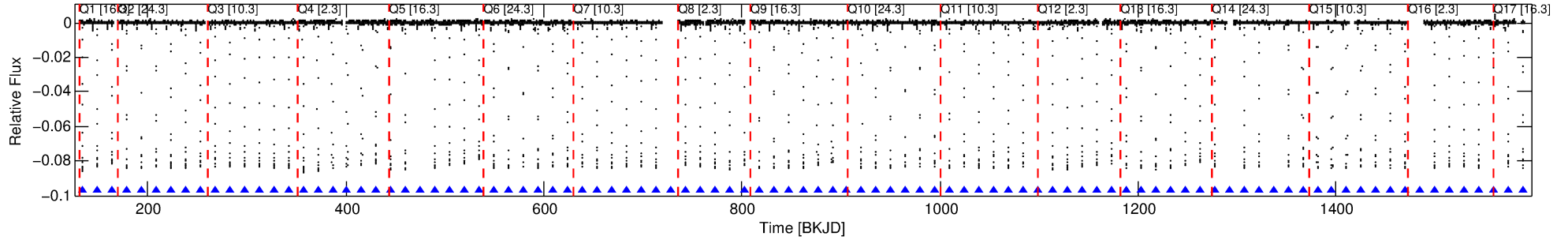
Ephemeris Match Information For 012251779-01

No Significant Match Found

DV One-Page Summary

KIC: 12251779 Candidate: 1 of 2 Period: 14.844 d
KOI: K07517.01 Corr: 1.000

Kp: 14.41 R*: 0.99 Rs Teff: 6161.0 K Logg: 4.37 Fe/H: -0.780



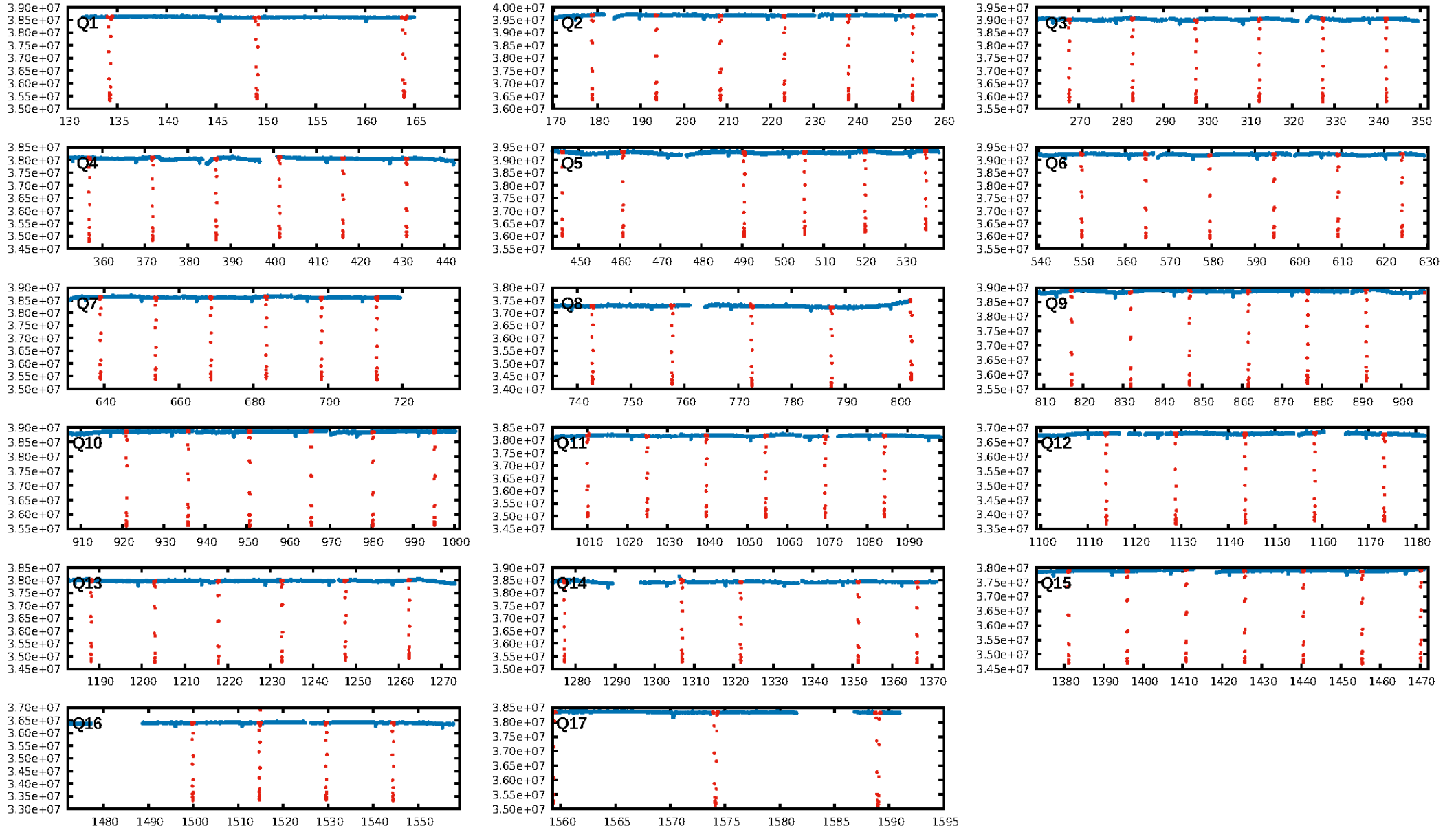
DV Fit Results:

Period = 14.84424 [0.00000] d
Epoch = 134.2337 [0.0000] BKJD
Rp/R* = 0.2694 [0.0001]
a/R* = 20.51 [0.01]
b = 0.29 [0.00]
Seff = 102.16 [33.79]
Teq = 811 [67] K
Rp = 29.05 [6.94] Re
a = 0.1111 [0.0231] AU
Ag = 31.38 [9.80] [3.10σ]
Teffp = 2966 [81] K [20.50σ]

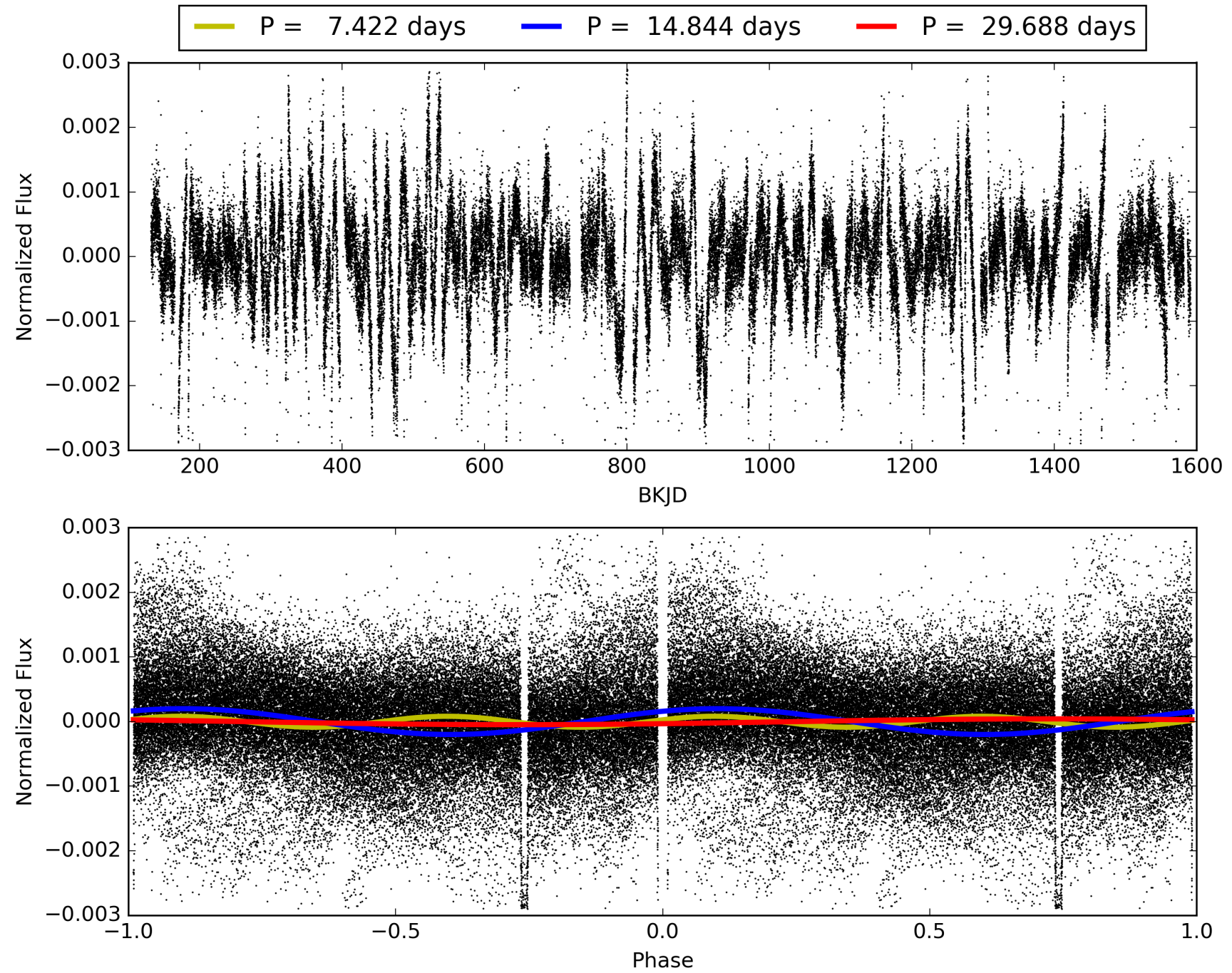
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [86/86]
GhostDiagnostic-chr: 4.028
Centroid-sig: 0.0%
Centroid-so: 0.595 arcsec [295.64σ]
OotOffset-rm: 0.041 arcsec [0.62σ]
KicOffset-rm: 0.036 arcsec [0.54σ]
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 012251779-01, PDC Light Curves

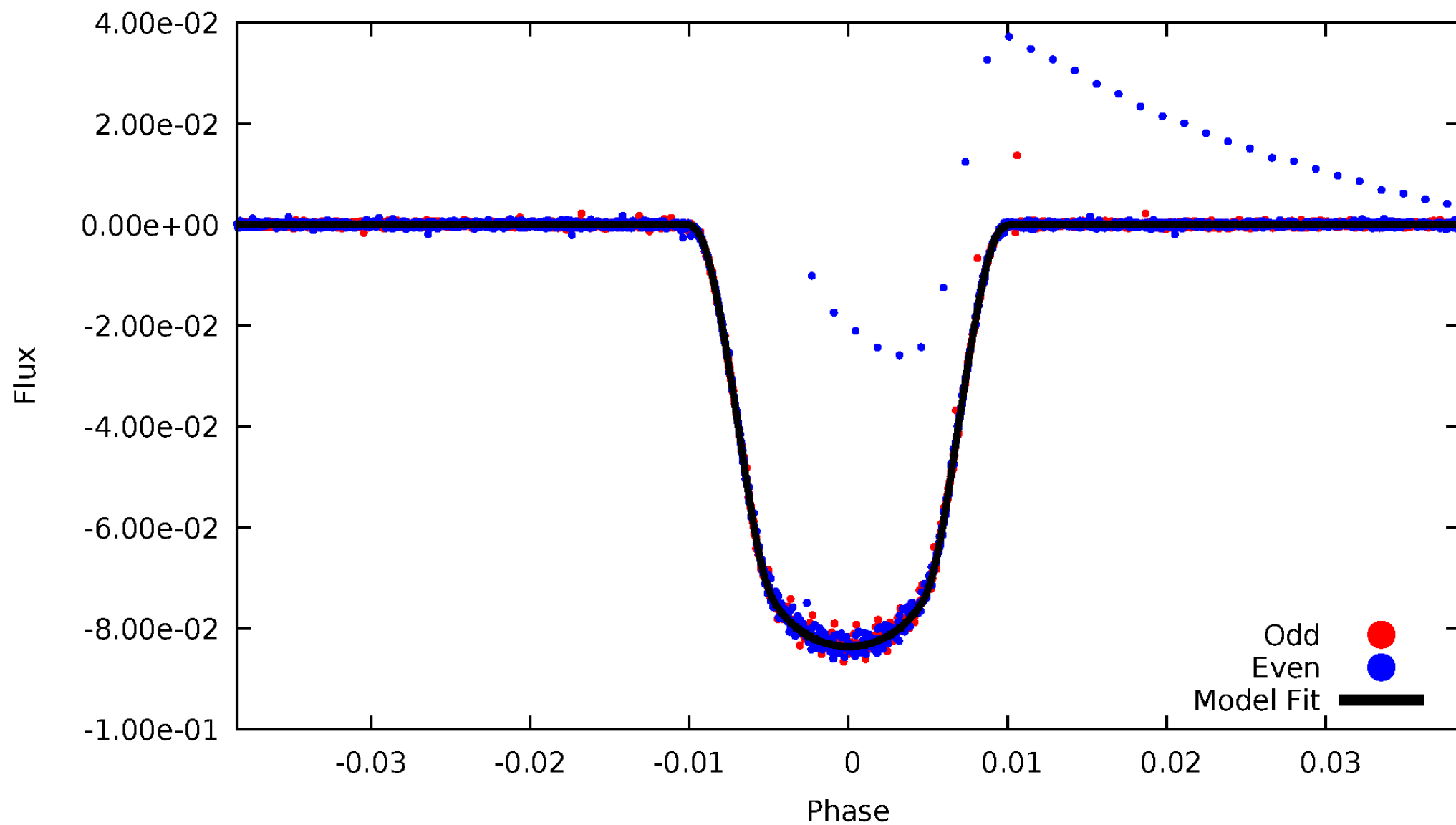


TCE 012251779-01



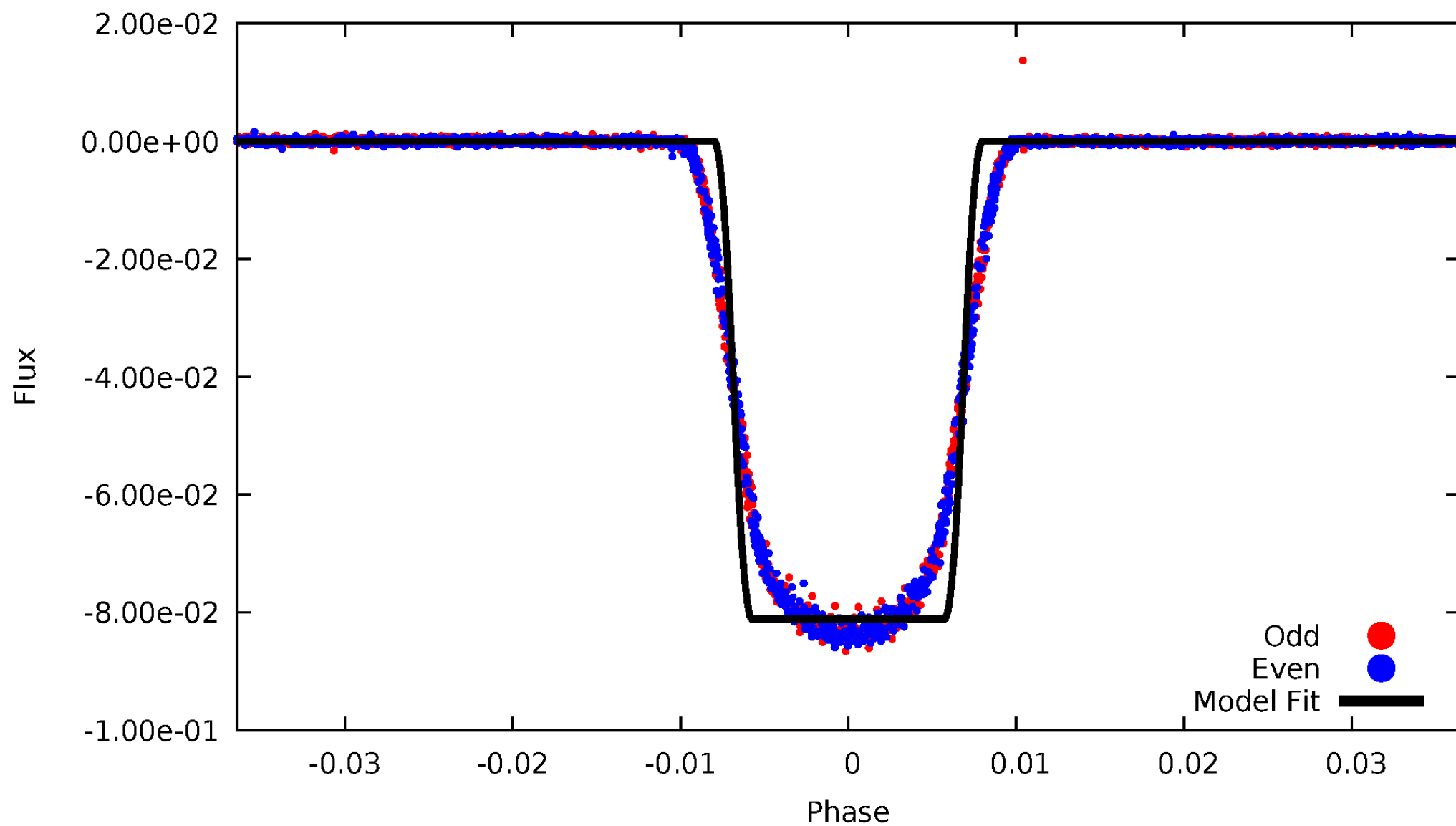
DV Odd/Even

TCE 012251779-01



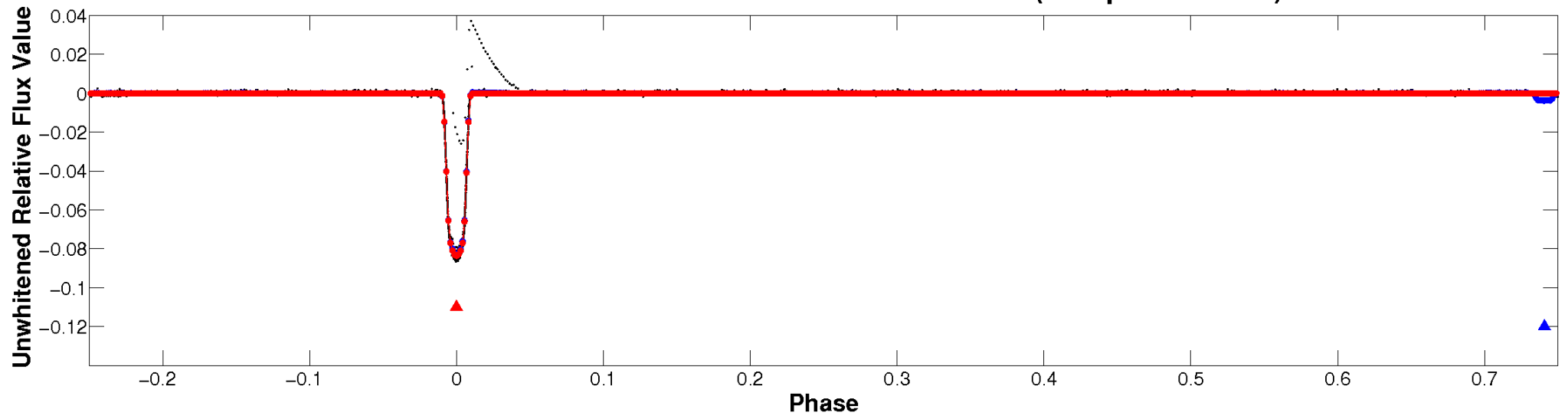
ALT Odd/Even

TCE 012251779-01

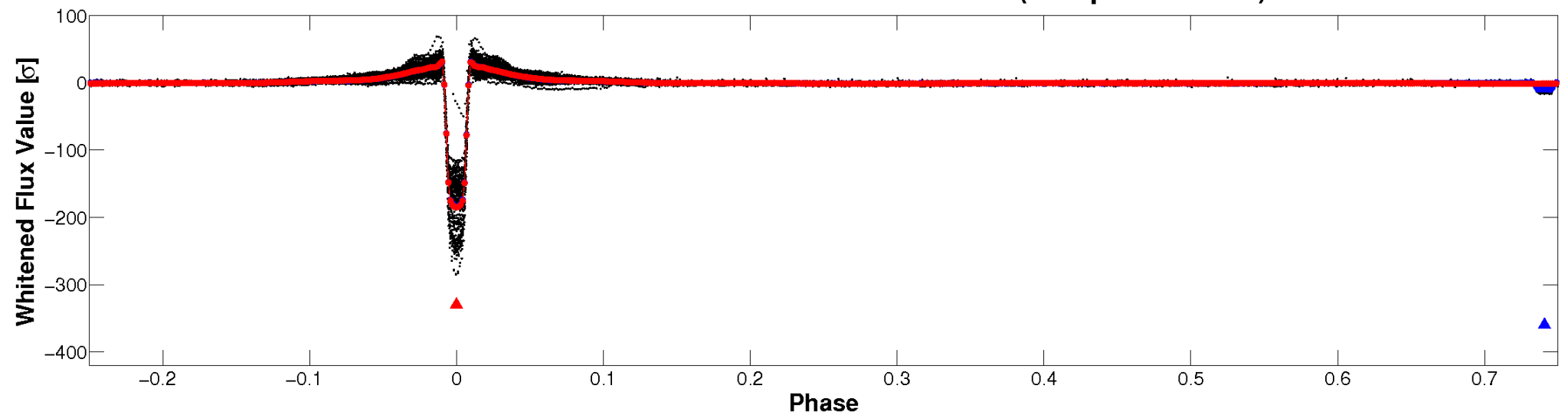


Non-Whitened Vs. Whitened Light Curve

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

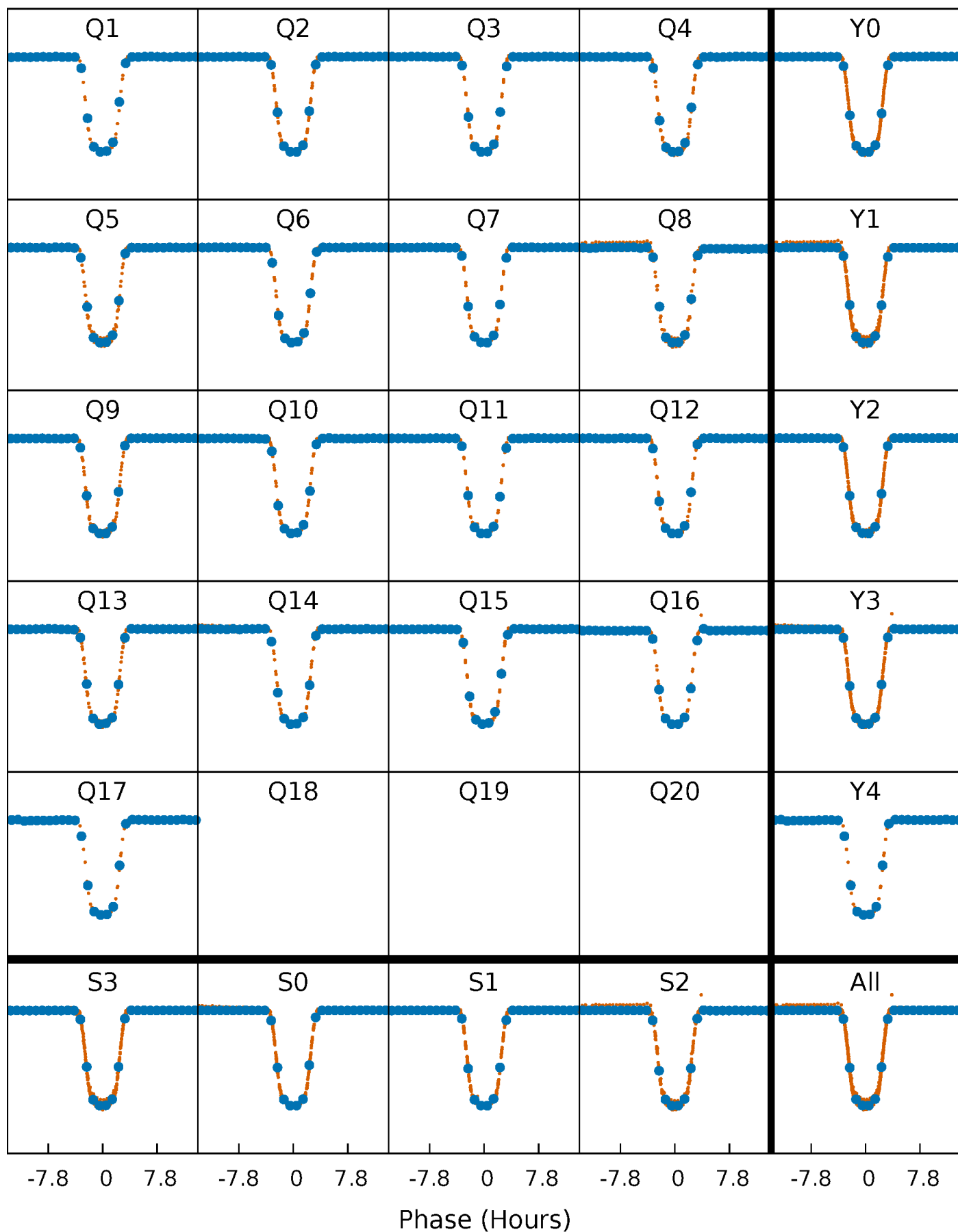


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



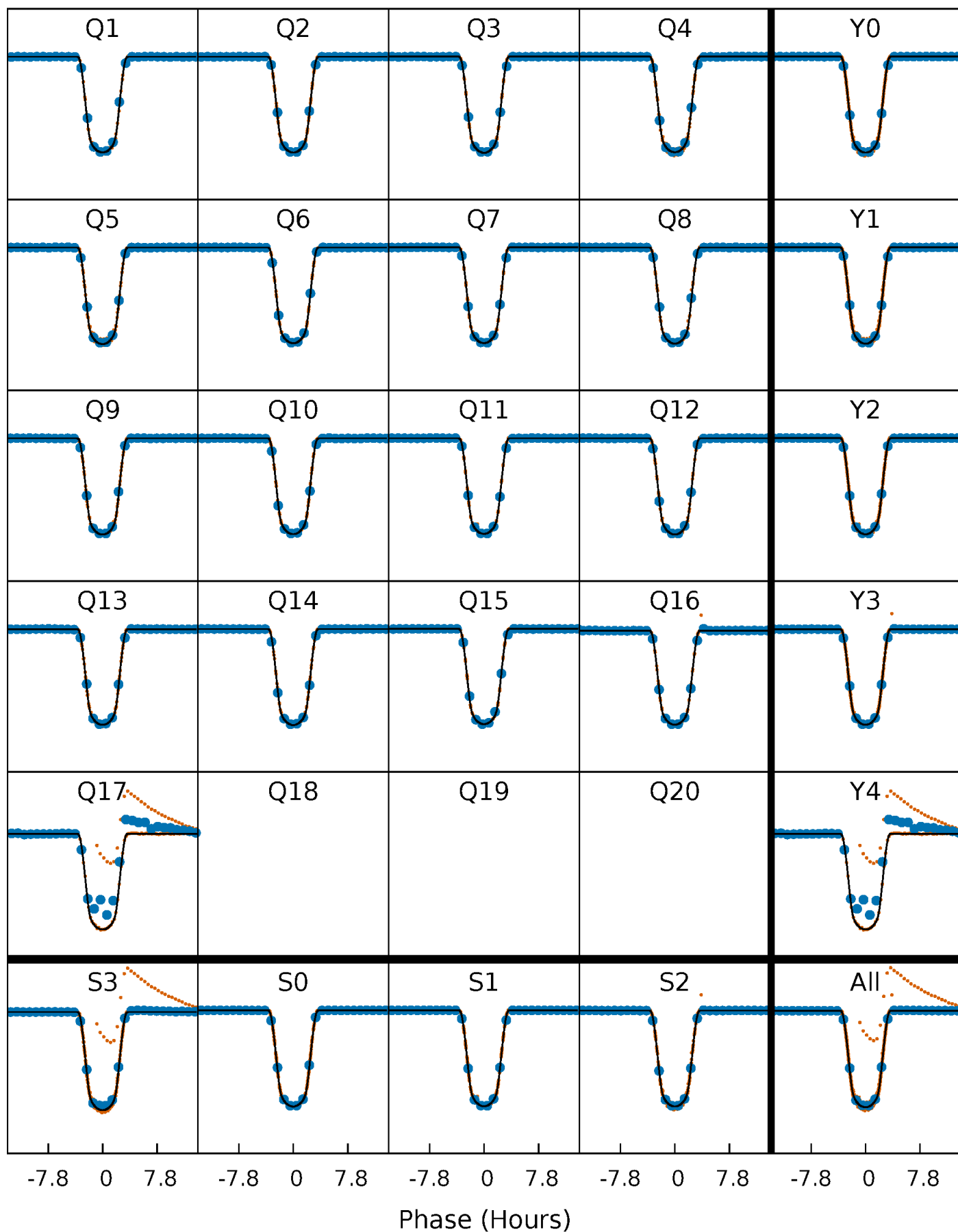
PDC Quarter-Phased Transit Curves

TCE 012251779-01 P= 14.844242 Days $T_0=134.233738$ (BKJD)



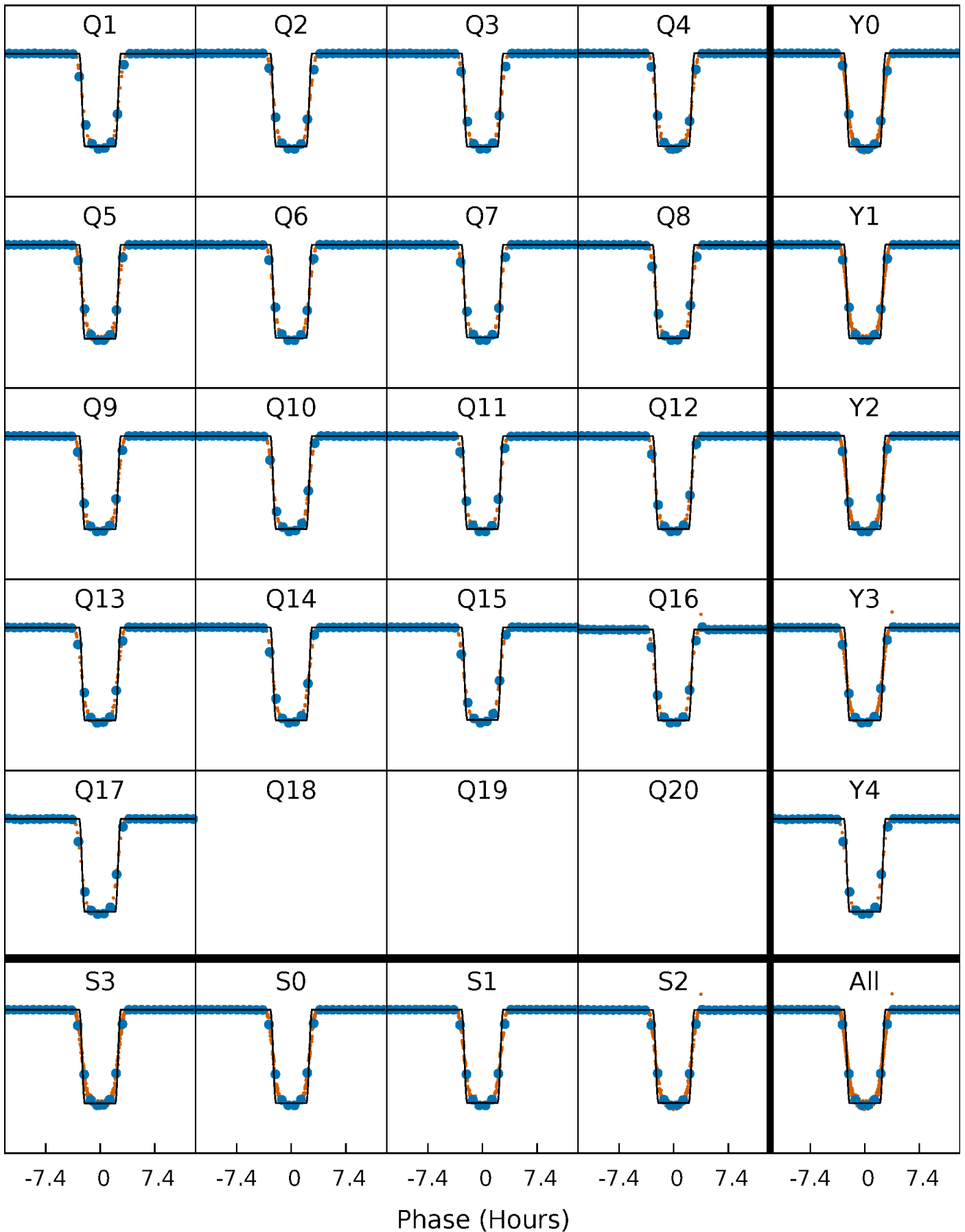
DV Quarter-Phased Transit Curves

TCE 012251779-01 P= 14.844242 Days $T_0=134.233738$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

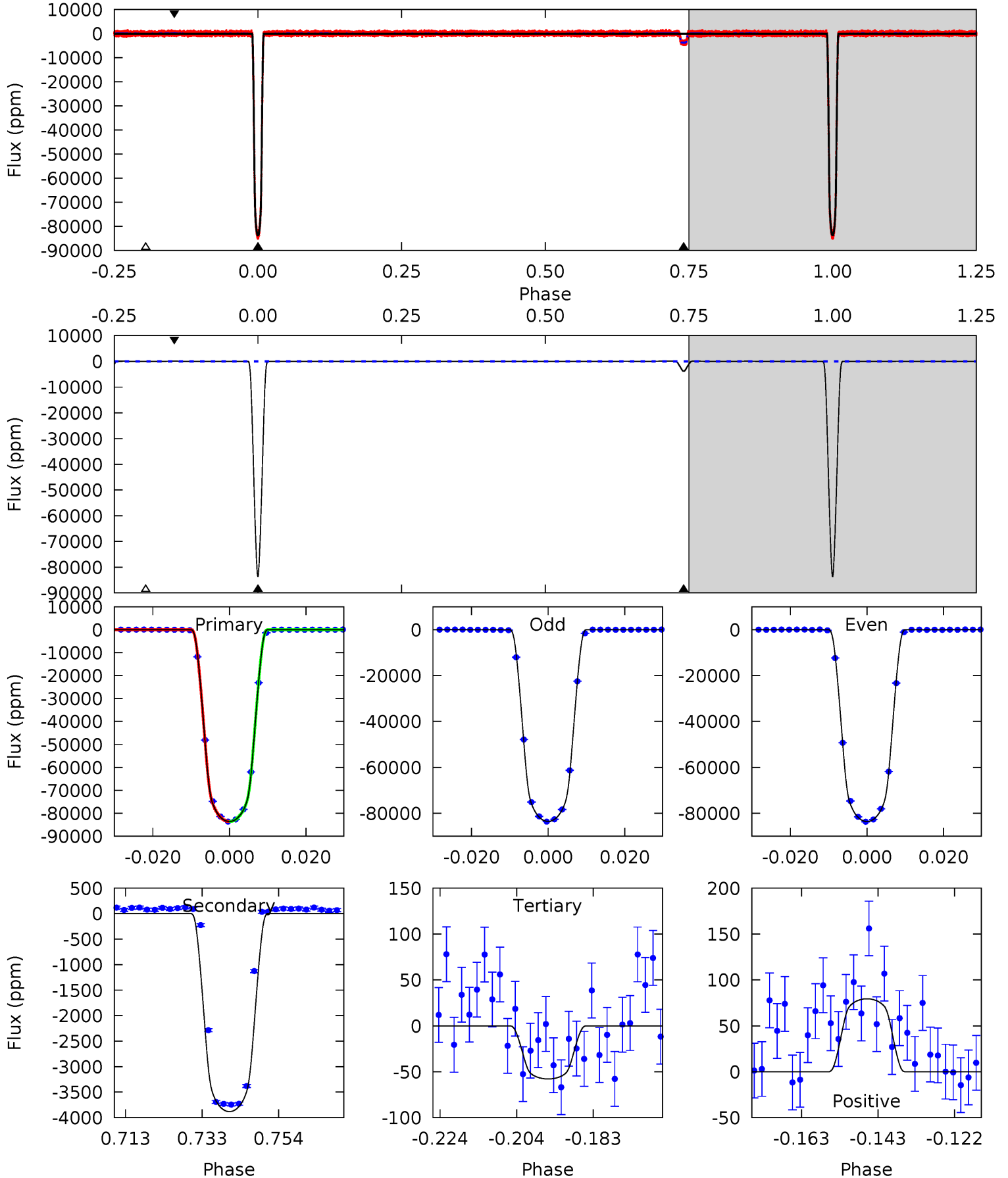
TCE 012251779-01 P= 14.844308 Days $T_0=134.230525$ (BKJD)



DV Model-Shift Uniqueness Test

012251779-01, P = 14.844242 Days, E = 119.389496 Days

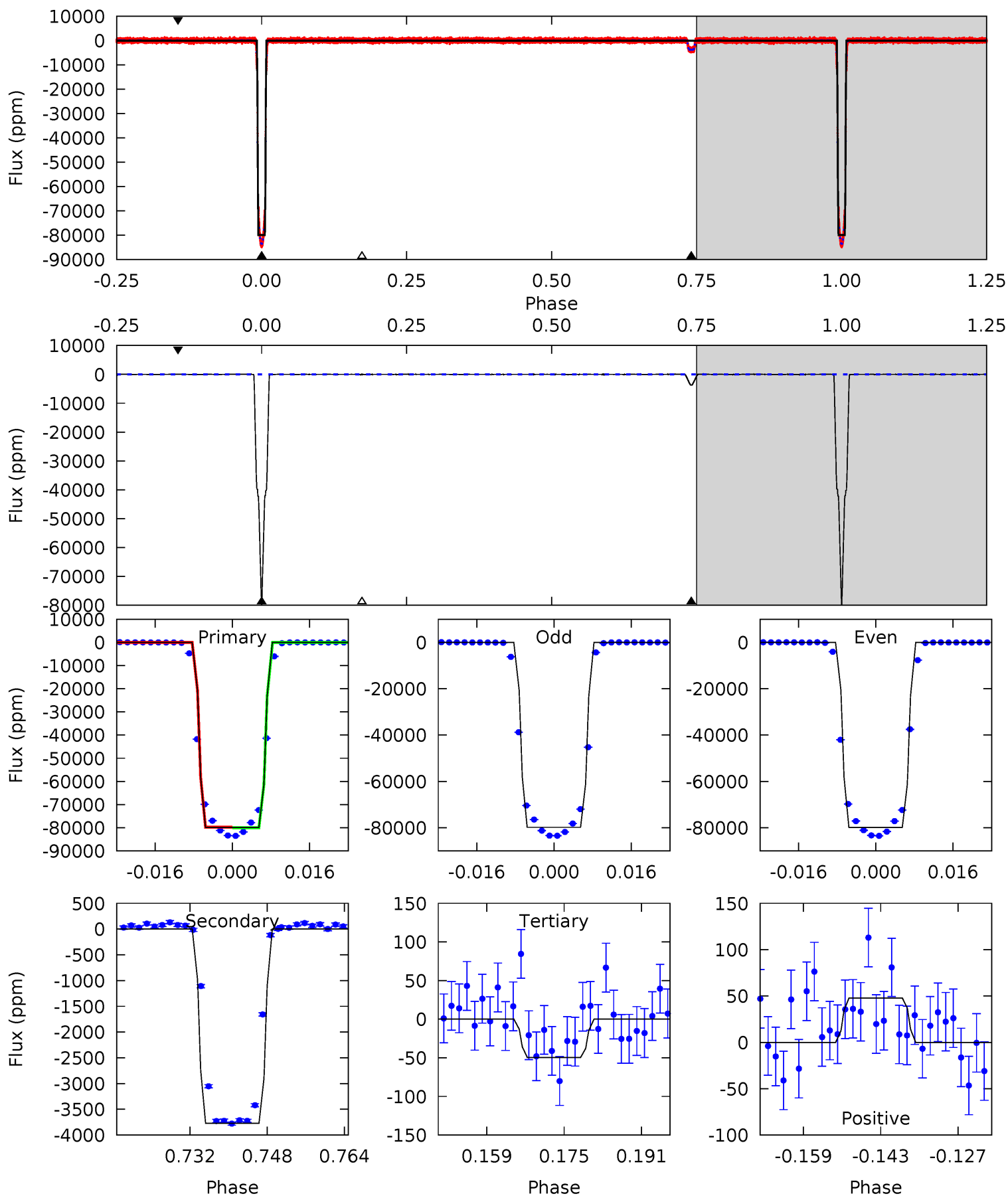
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8824	409.8	6.11	8.38	4.89	2.32	2.84	8817	8815	403.7	401.4	3.72	0.99	0.00	0.73



Alt Model-Shift Uniqueness Test

012251779-01, P = 14.844308 Days, E = 119.386217 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6130	289.4	3.79	3.67	4.94	2.41	1.36	6126	6126	285.6	285.7	2.30	1.00	0.00	5.97



Stellar Parameters For KIC 012251779

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6161^{+168}_{-168}	$4.367^{+0.175}_{-0.175}$	$-0.780^{+0.300}_{-0.300}$	$0.988^{+0.236}_{-0.193}$	$0.829^{+0.096}_{-0.059}$	$1.209^{+1.004}_{-0.552}$
	+3%/-3%	+4%/-4%	+38%/-38%	+24%/-20%	+12%/-7%	+83%/-46%
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 012251779-01 / KOI 7517.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3882 ± 9	$29.20^{+4.24}_{-3.30}$	1134^{+80}_{-72}	3467^{+53}_{-65}	31^{+8}_{-7}
Alt.	-3772 ± 13	$31.04^{+4.09}_{-3.34}$	1138^{+77}_{-73}	3386^{+60}_{-62}	27^{+7}_{-6}

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

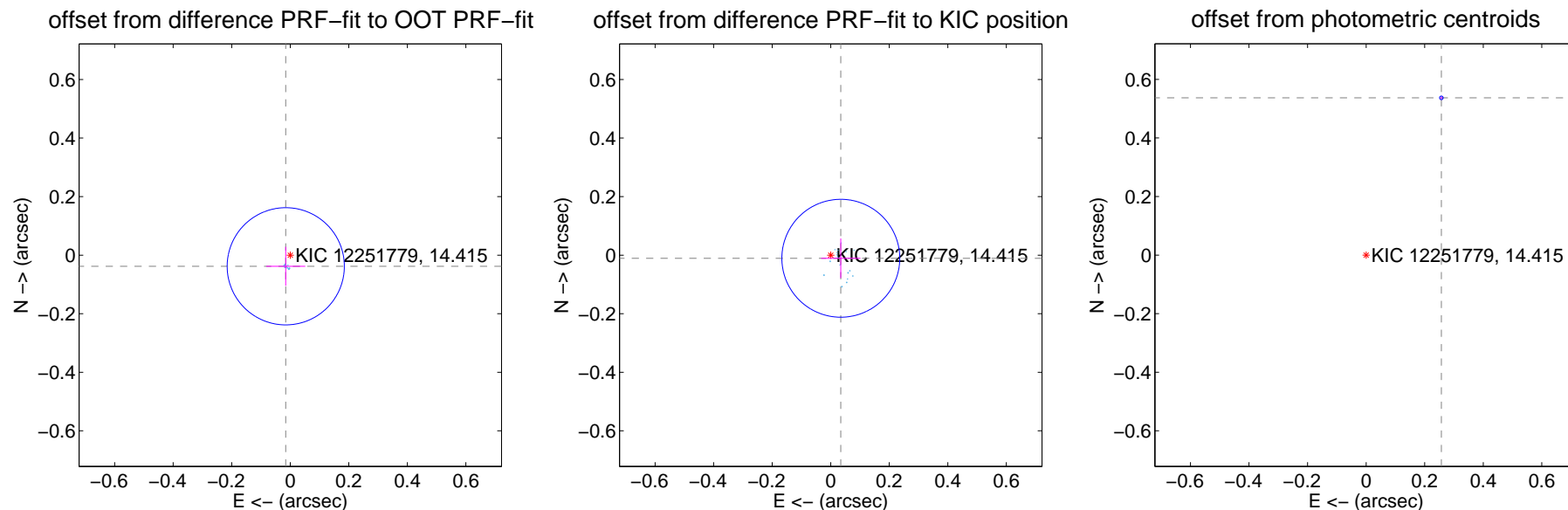
DV Centroid Data

Supplemental centroid analysis for 012251779-01. Kepler magnitude: 14.41. Transit SNR 4684.31

There are 17 quarters with good PRF difference image offsets

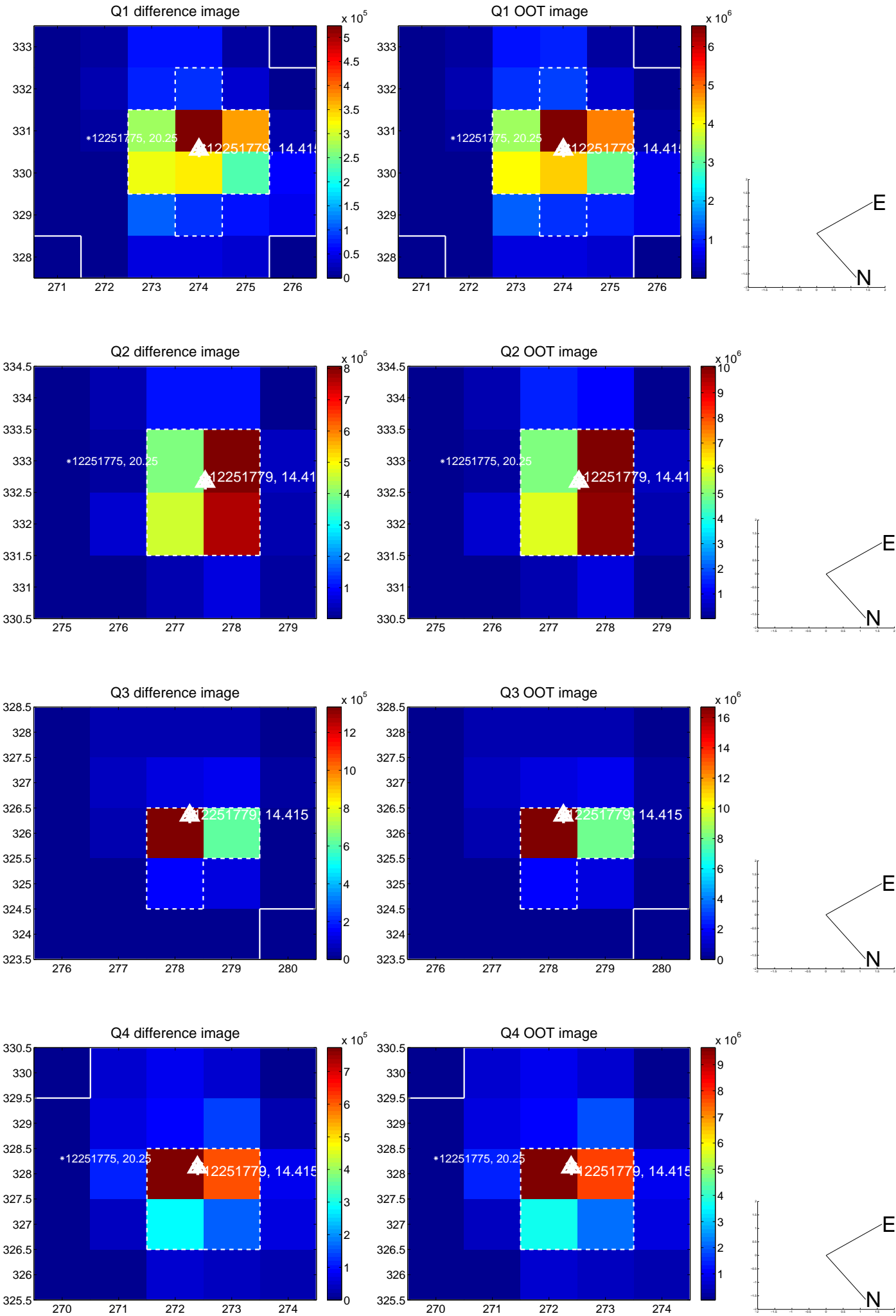
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.041 ± 0.067	0.62	0.015 ± 0.067	-0.038 ± 0.067
PRF-fit source offset from KIC position	0.036 ± 0.067	0.54	-0.034 ± 0.067	-0.011 ± 0.068
photometric centroid source offset	0.60 ± 0.00	295.64	-0.26 ± 0.00	0.54 ± 0.00

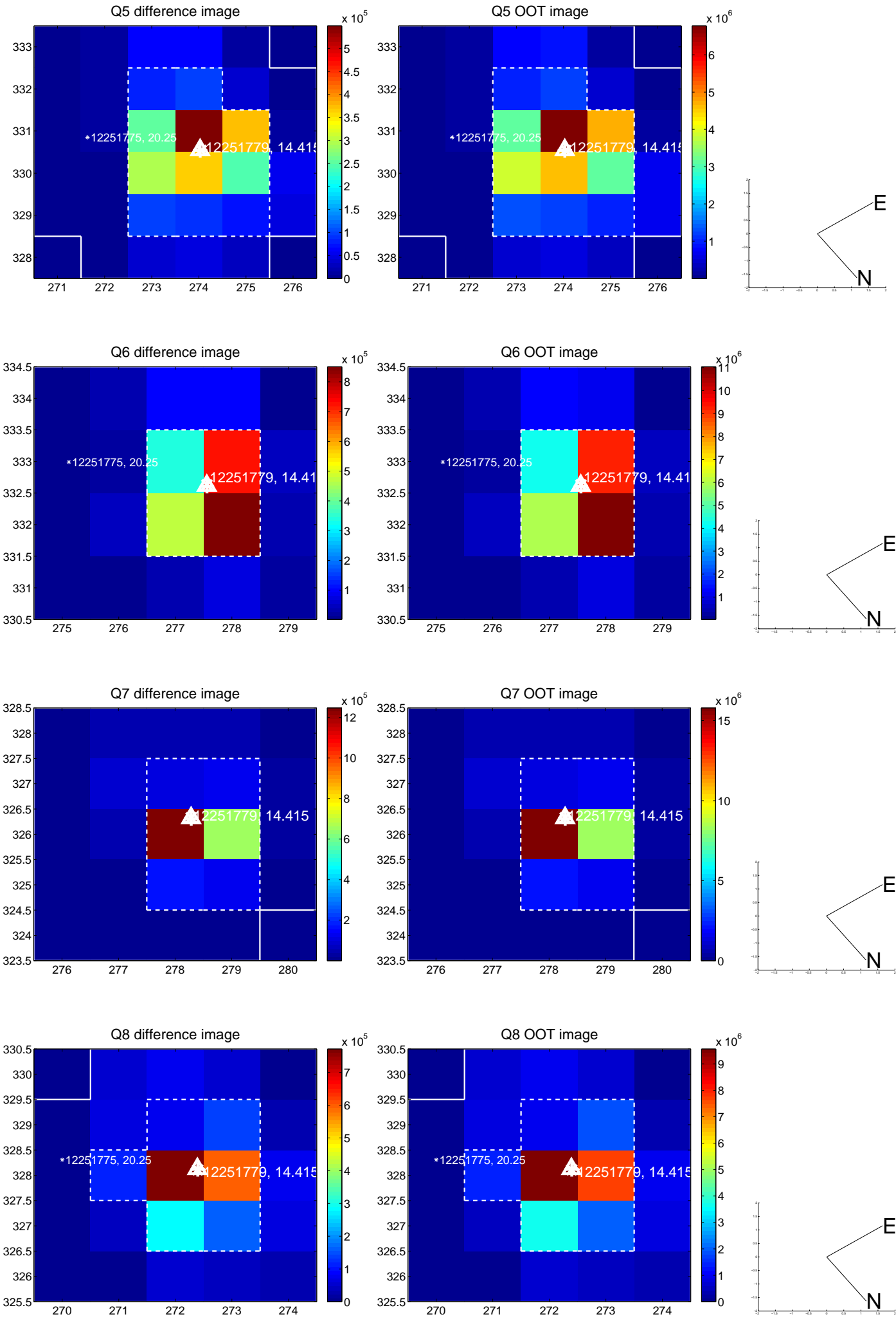


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

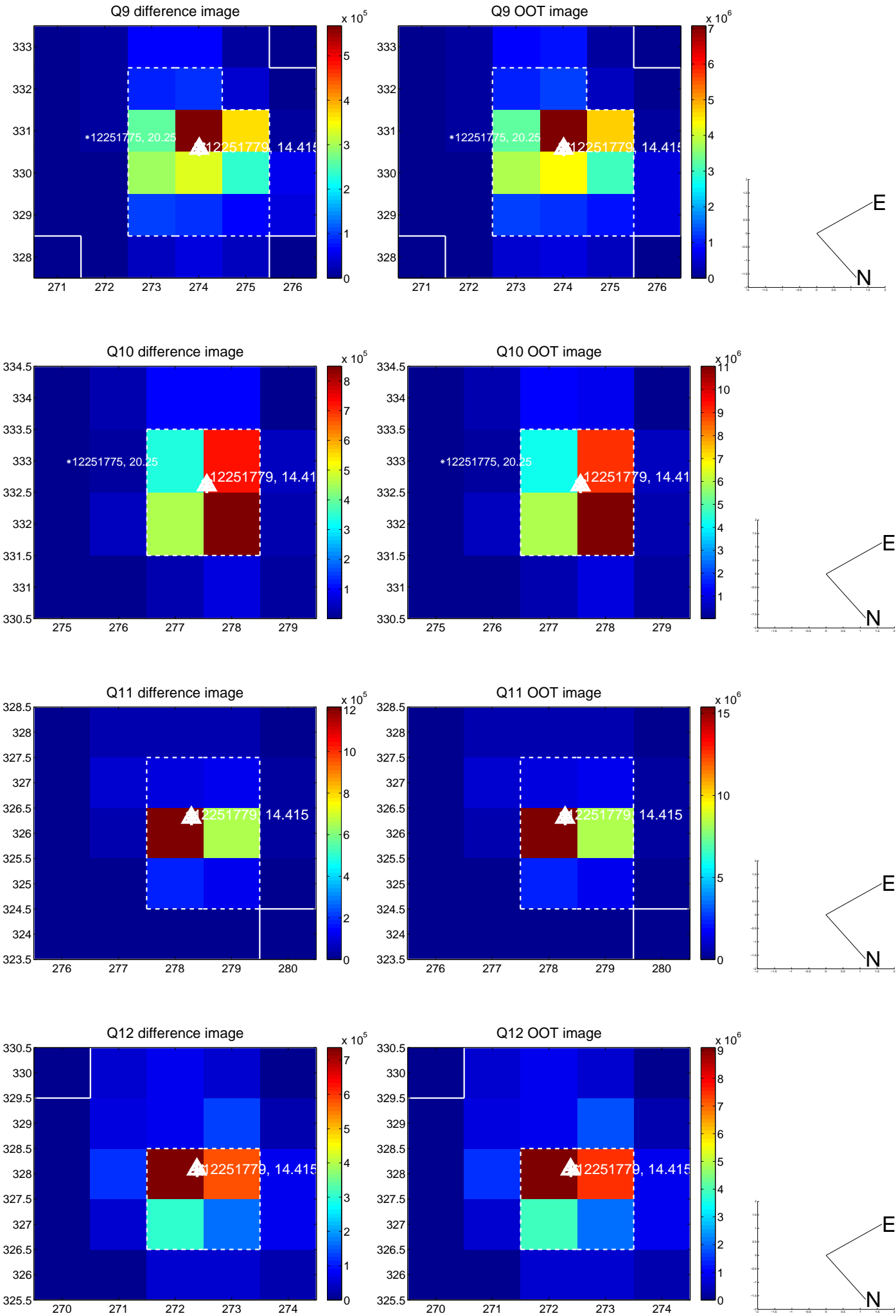
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



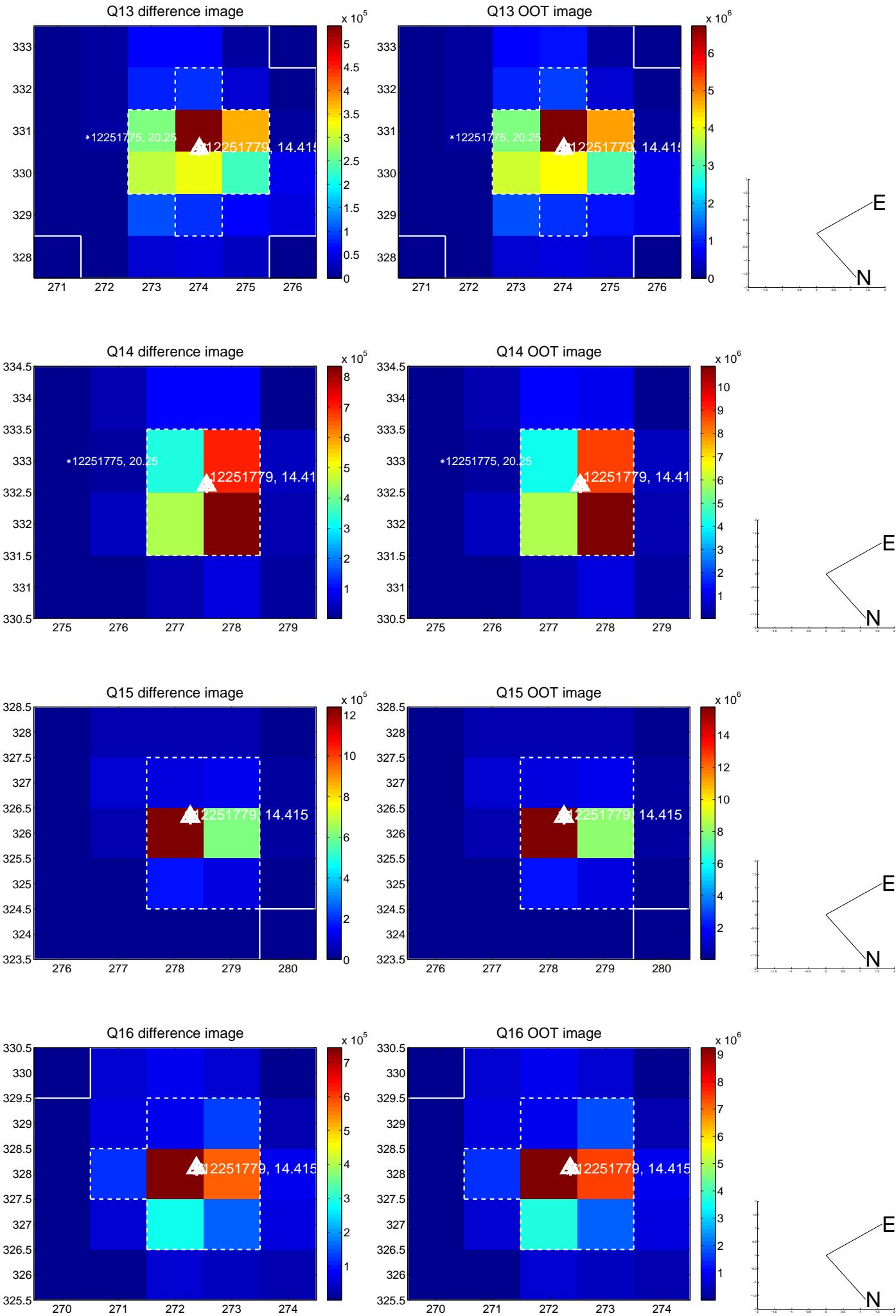
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



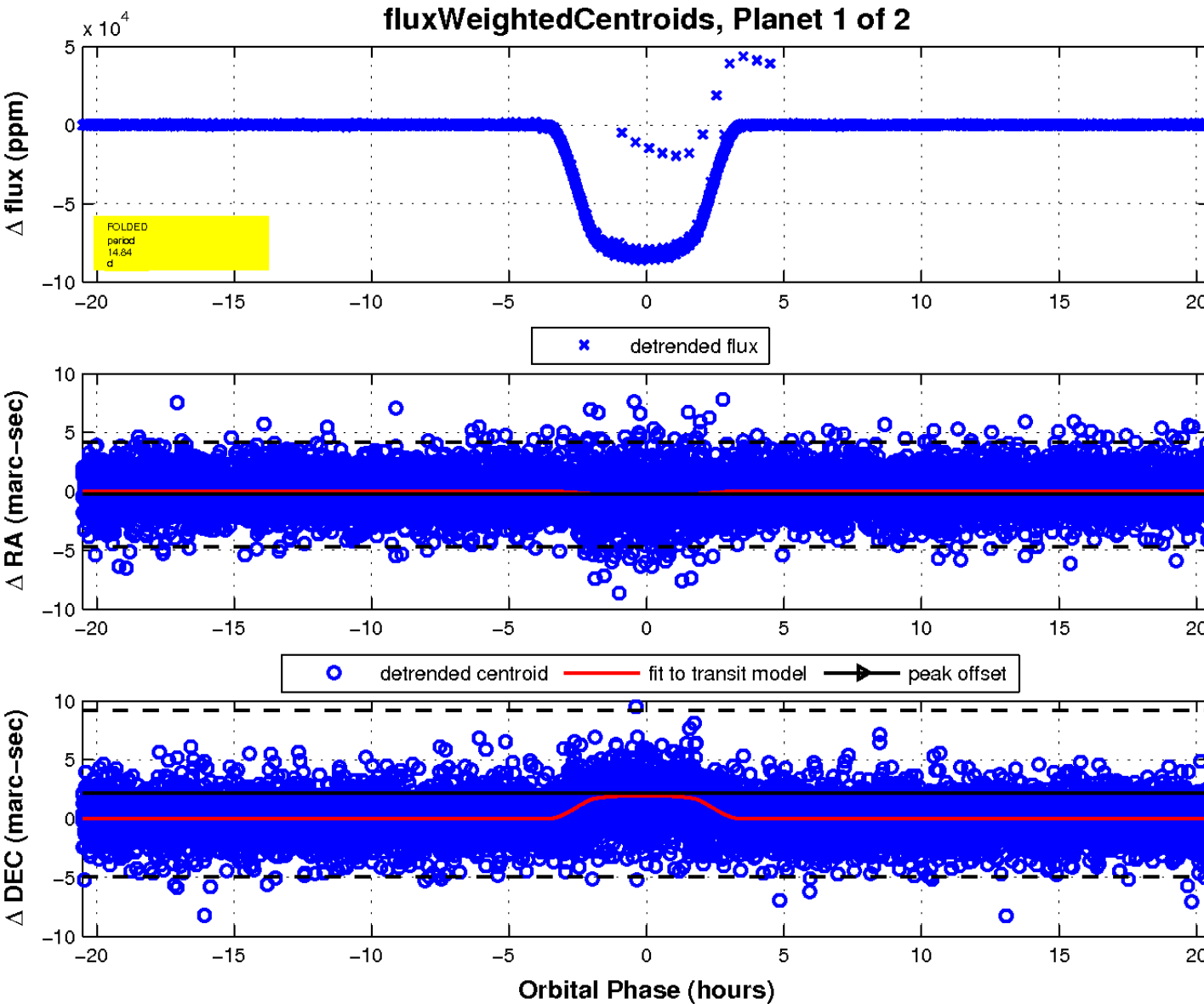
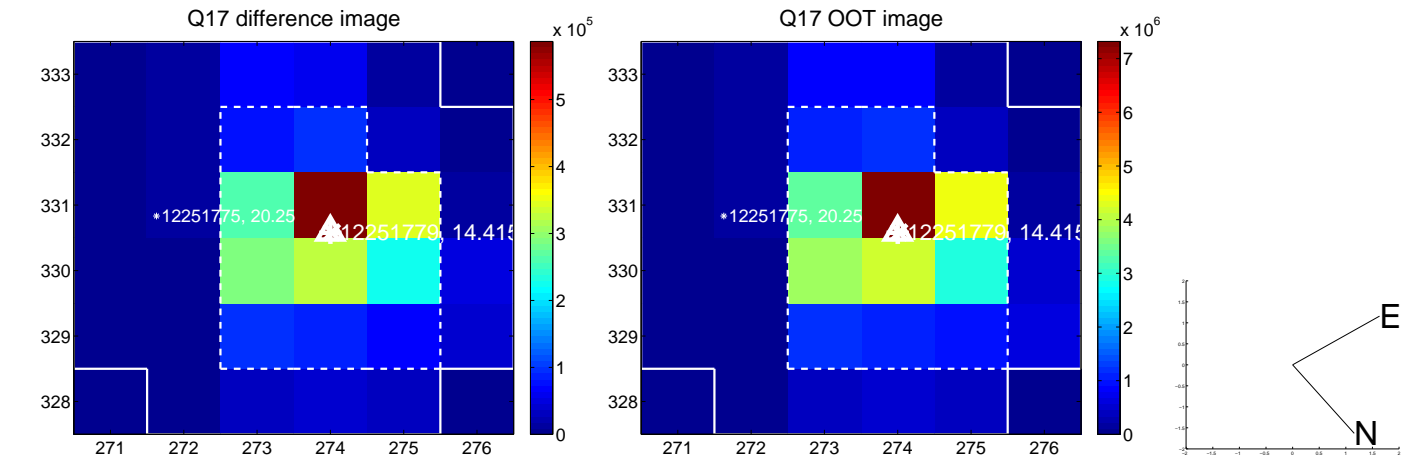
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



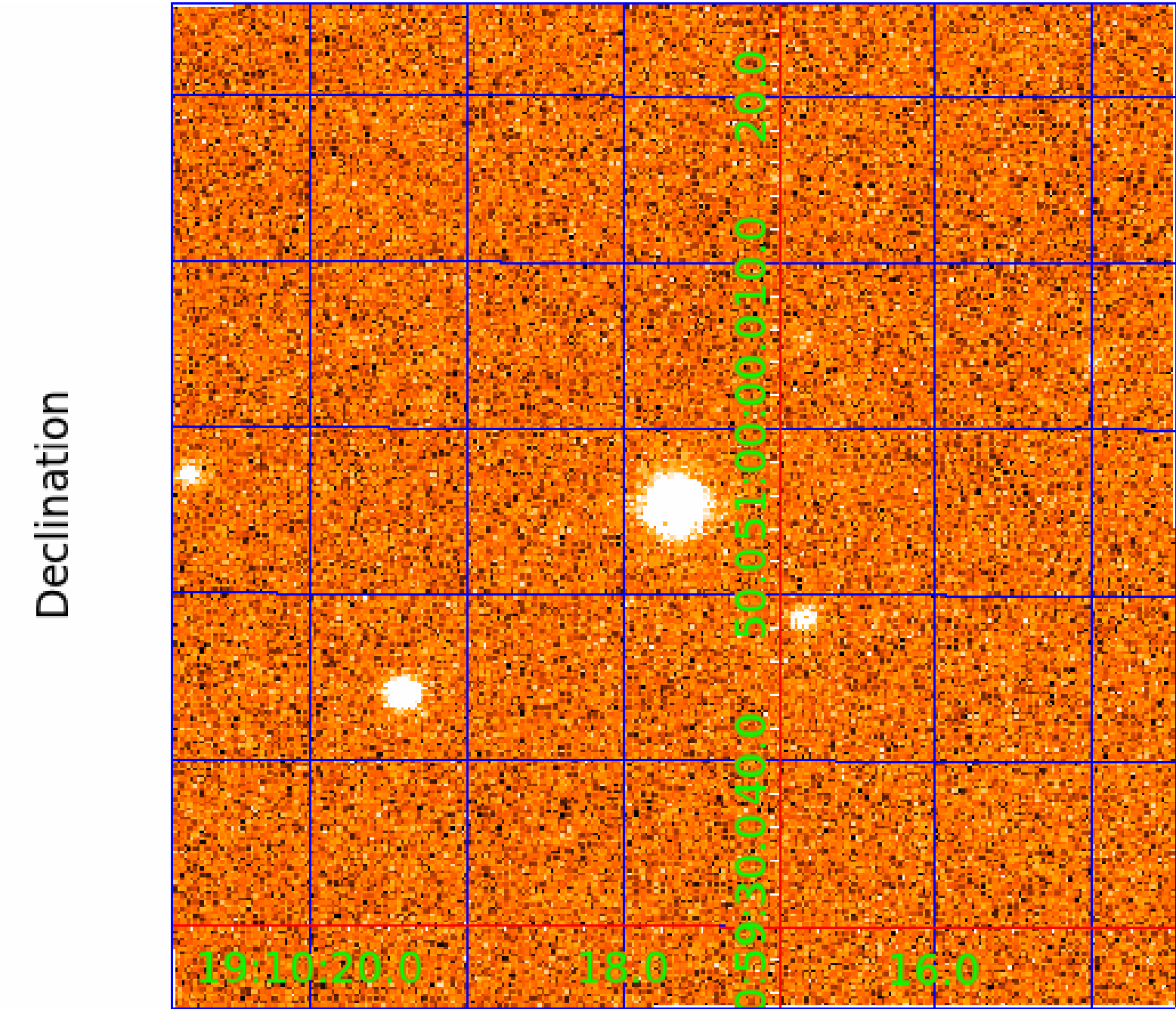
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012251779

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})
012251779-01	OBS	7517.01	14.844242	134.233738	83617.0	6.839	5243.2	4684.3	0.99	6161	29.05	102.16
012251779-02	OBS	No	14.844233	145.230772	3960.2	5.466	249.5	238.5	0.99	6161	6.99	102.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012251779-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
012251779-02	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.

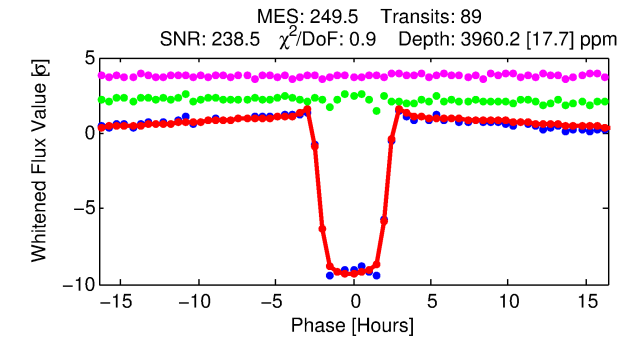
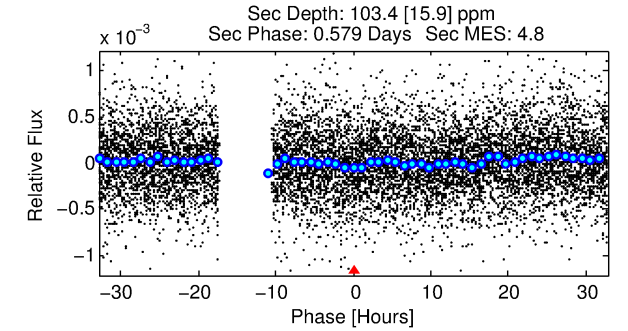
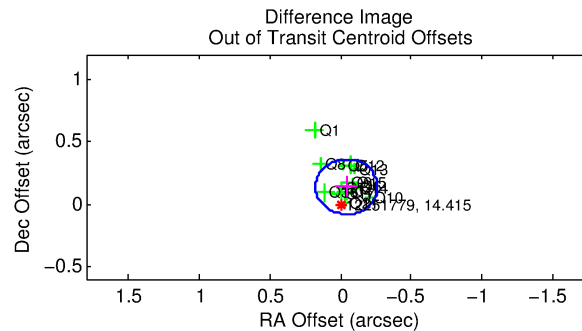
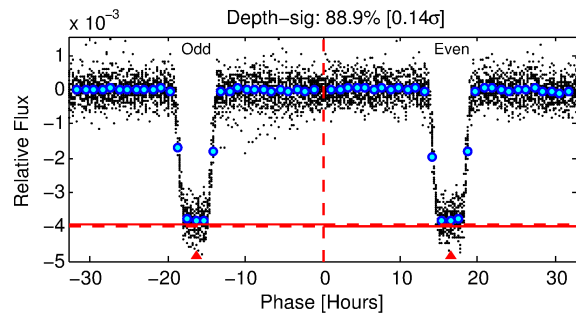
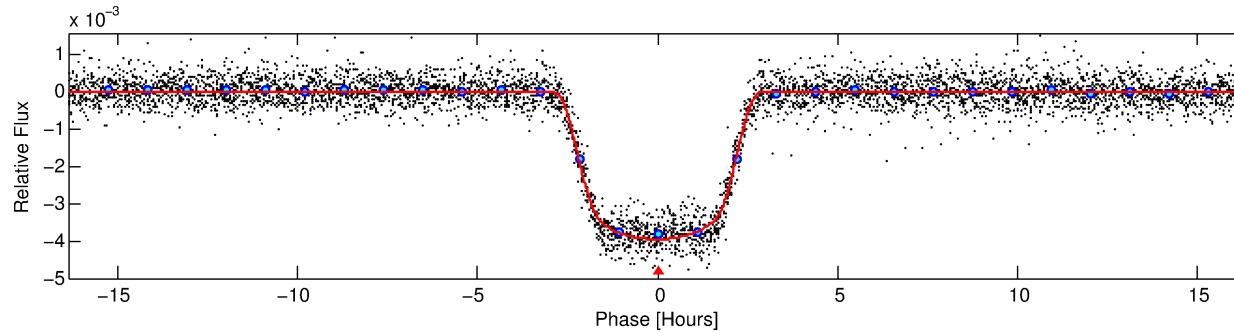
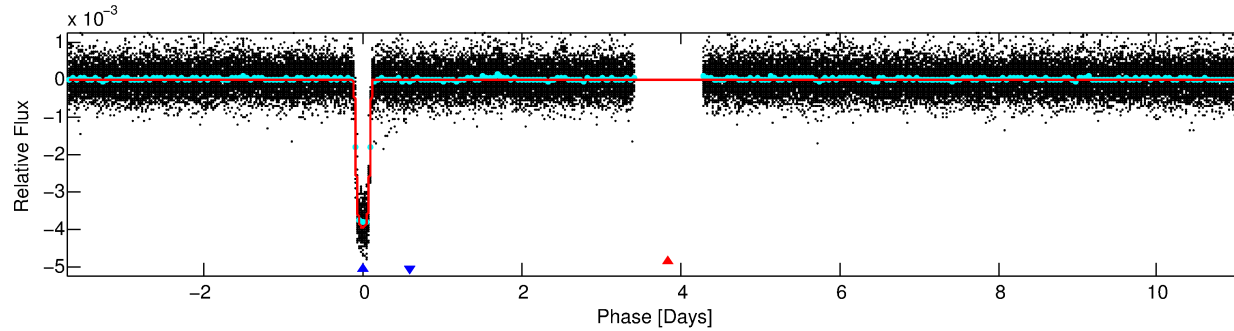
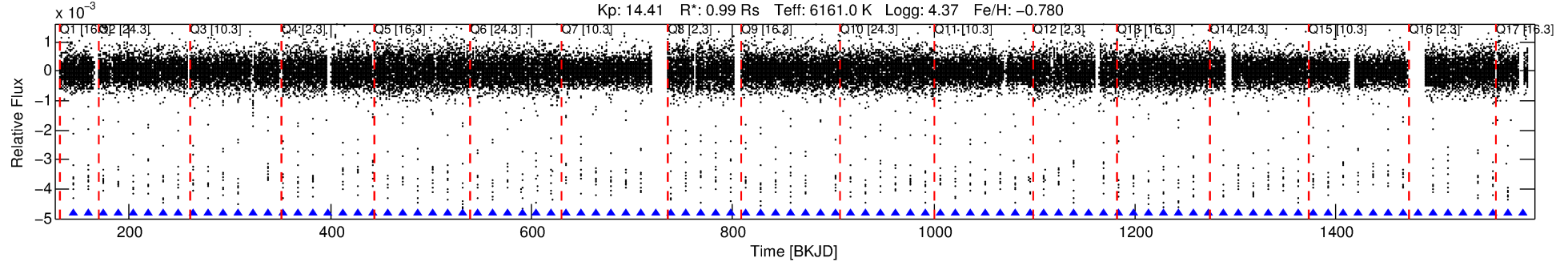
Ephemeris Match Information For 012251779-02

No Significant Match Found

DV One-Page Summary

KIC: 12251779 Candidate: 2 of 2 Period: 14.844 d
KOI: K07517 Corr: No Ephemeris Match

Kp: 14.41 R*: 0.99 Rs Teff: 6161.0 K Logg: 4.37 Fe/H: -0.780



DV Fit Results:

Period = 14.84423 [0.00001] d
Epoch = 145.2308 [0.0004] BKJD
Rp/R* = 0.0648 [0.0003]
a/R* = 13.74 [0.21]
b = 0.83 [0.01]
Seff = 102.16 [33.79]
Teq = 811 [67] K
Rp = 6.99 [1.67] Re
a = 0.1111 [0.0231] AU
Ag = 14.37 [5.00] [2.67σ]
Teffp = 2440 [115] K [12.23σ]

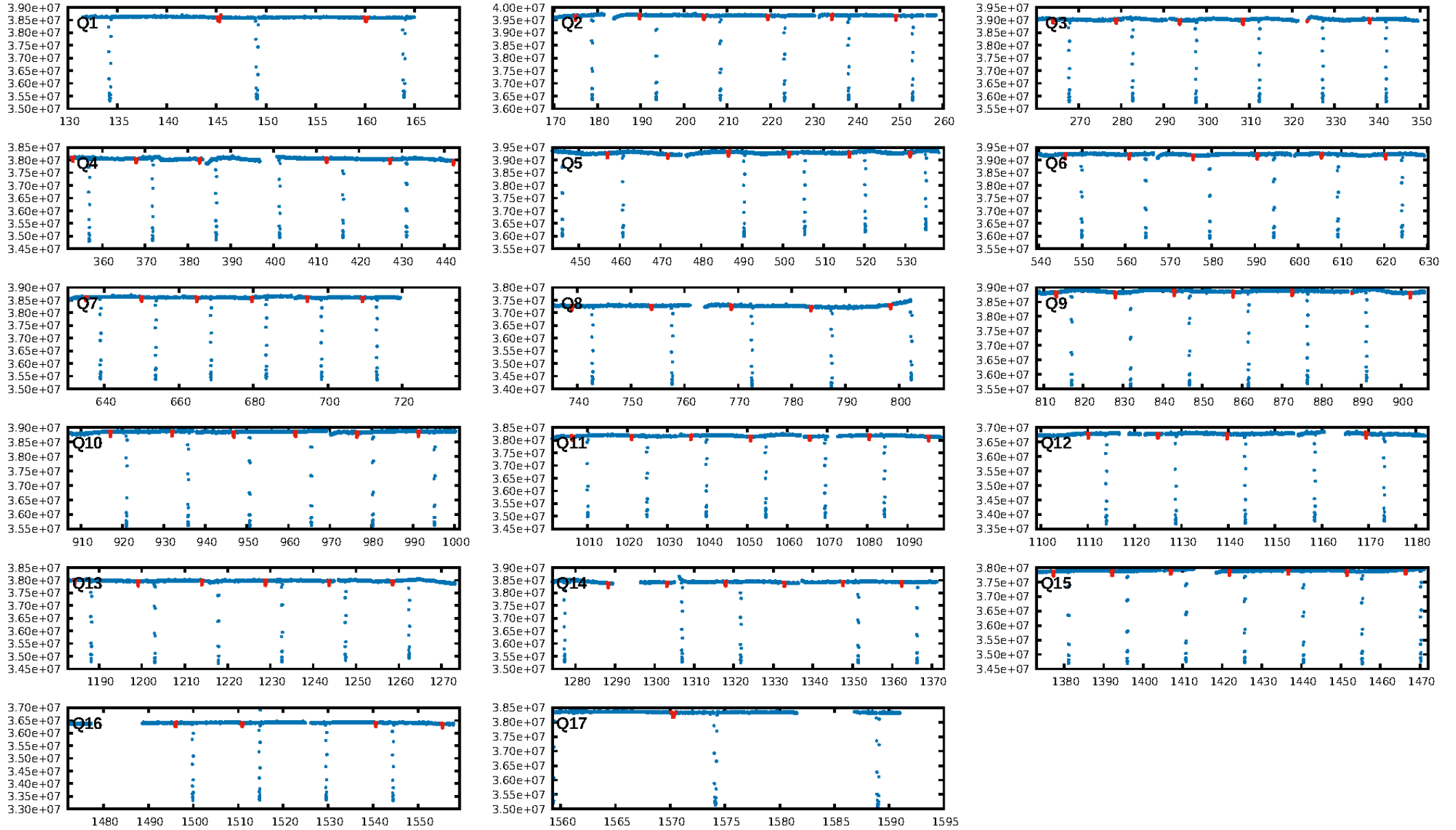
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [86/86]
GhostDiagnostic-chr: 3.984
Centroid-sig: 30.2%
Centroid-so: 0.660 arcsec [14.80σ]
OotOffset-rm: 0.145 arcsec [1.97σ]
KicOffset-rm: 0.205 arcsec [2.88σ]
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]

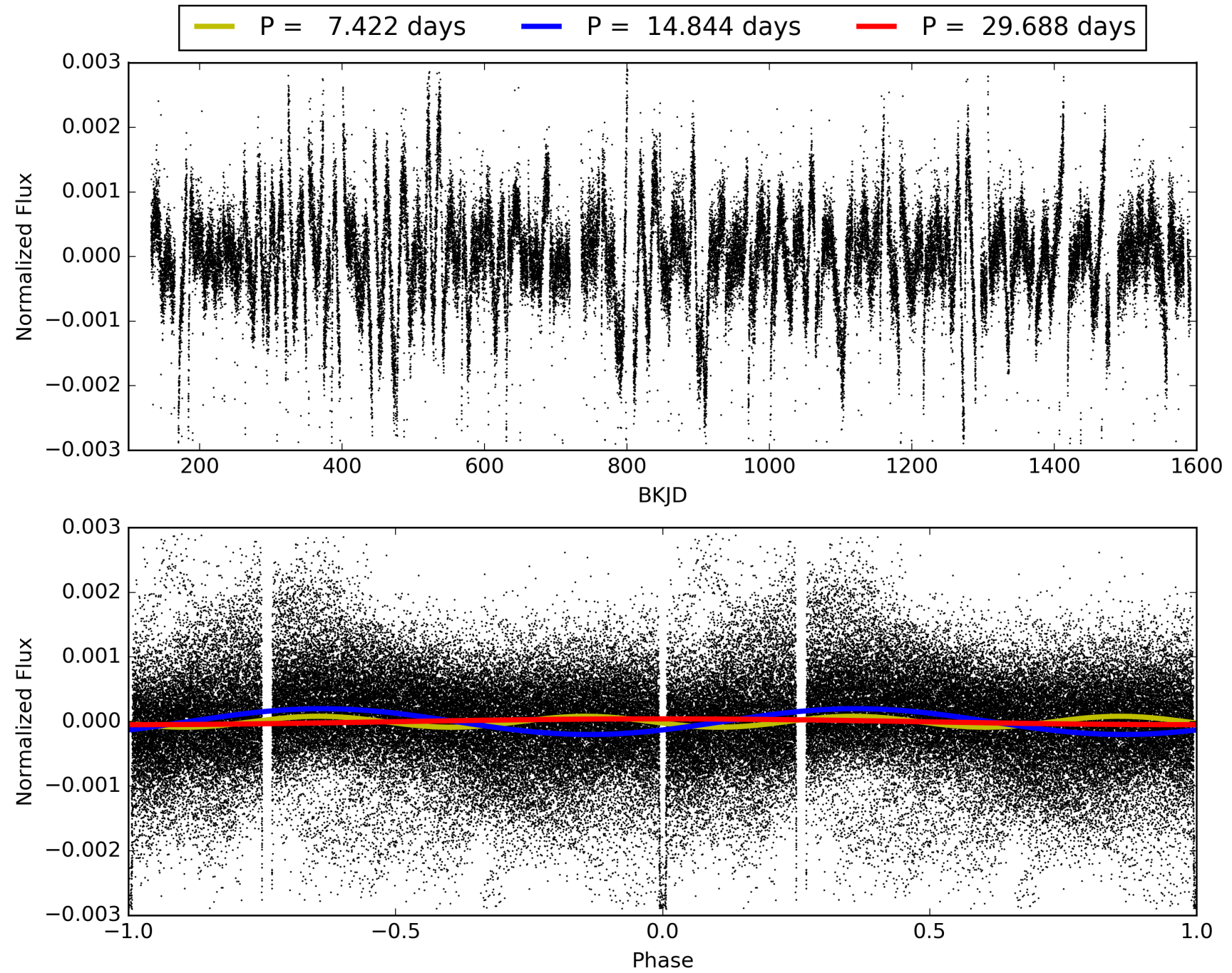
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:50:16 Z

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

TCE 012251779-02, PDC Light Curves

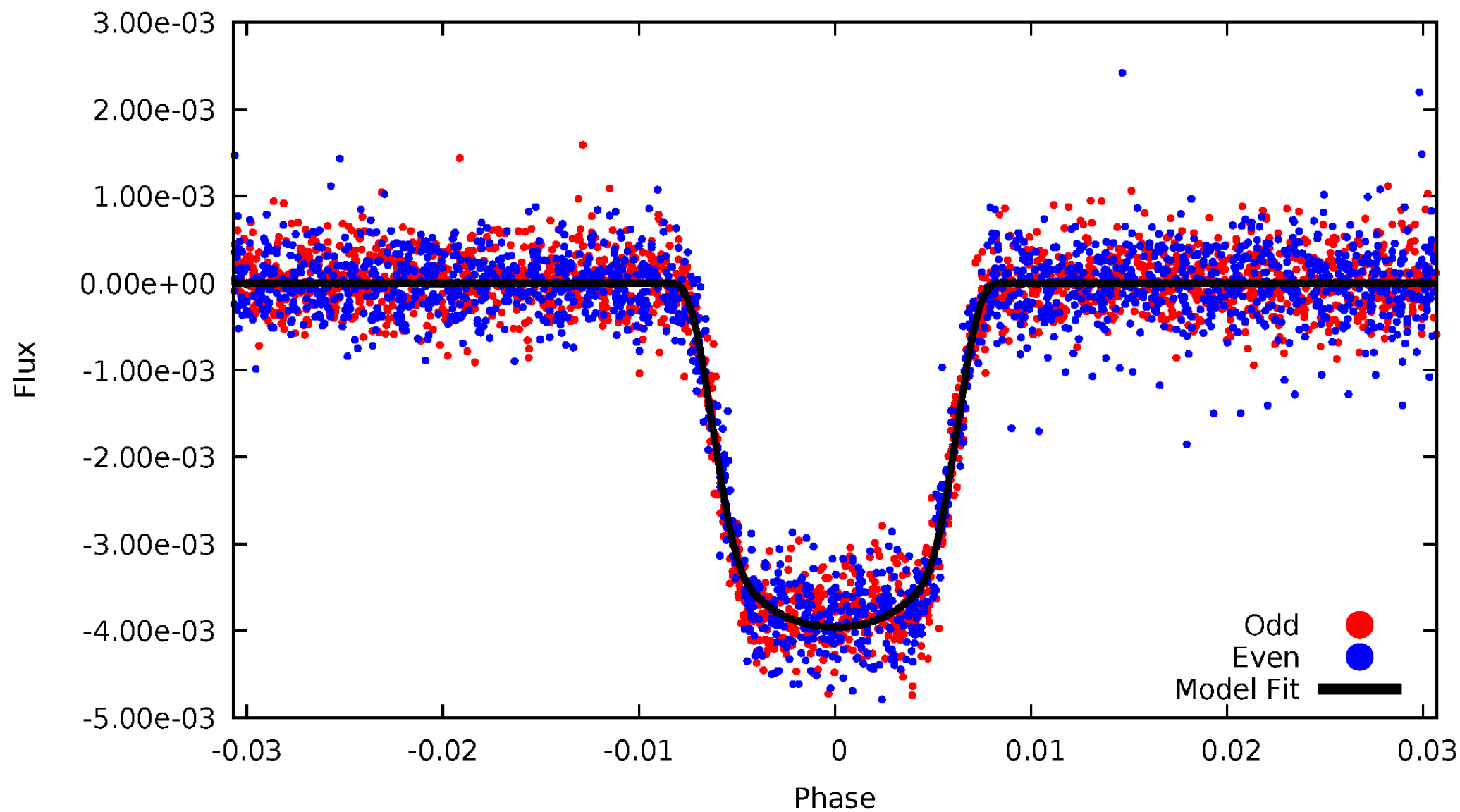


TCE 012251779-02



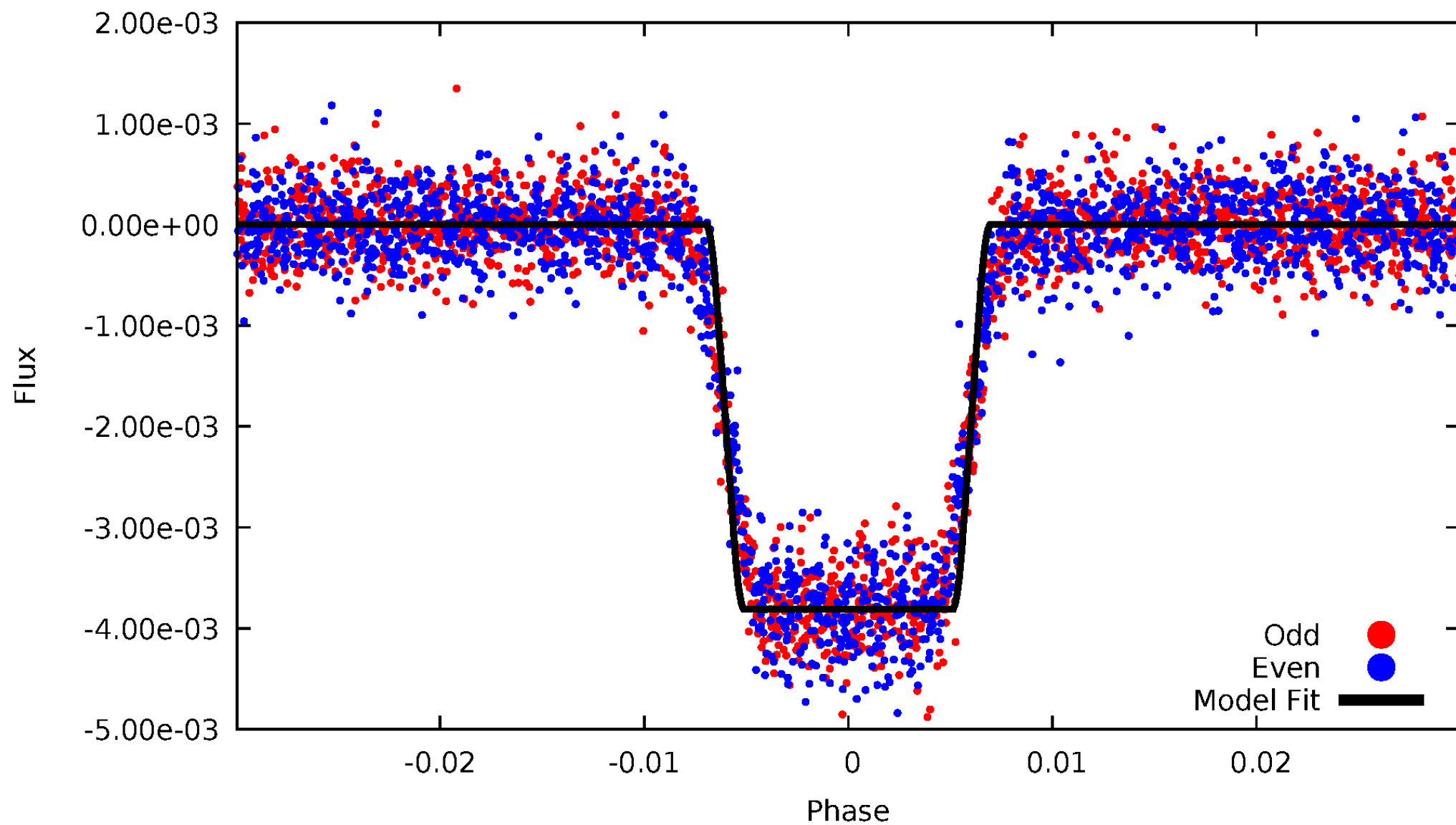
DV Odd/Even

TCE 012251779-02



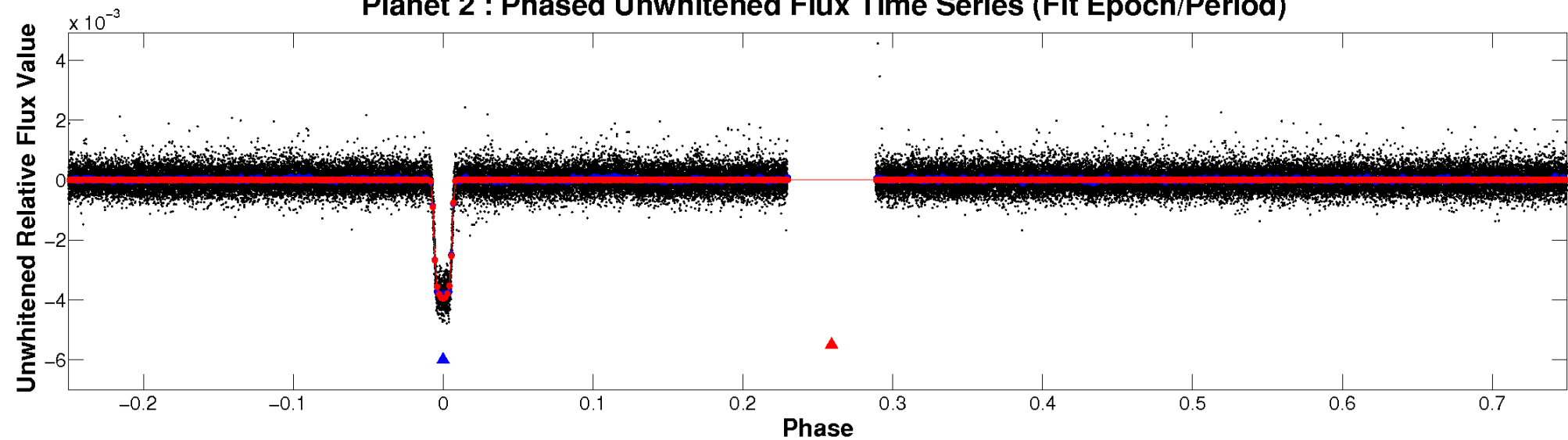
ALT Odd/Even

TCE 012251779-02

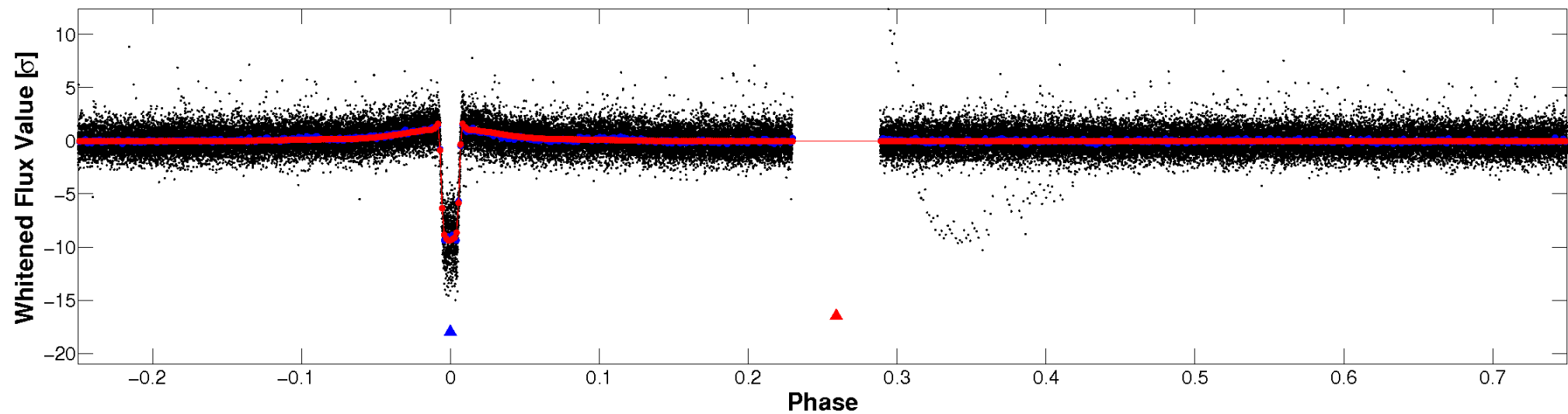


Non-Whitened Vs. Whitened Light Curve

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

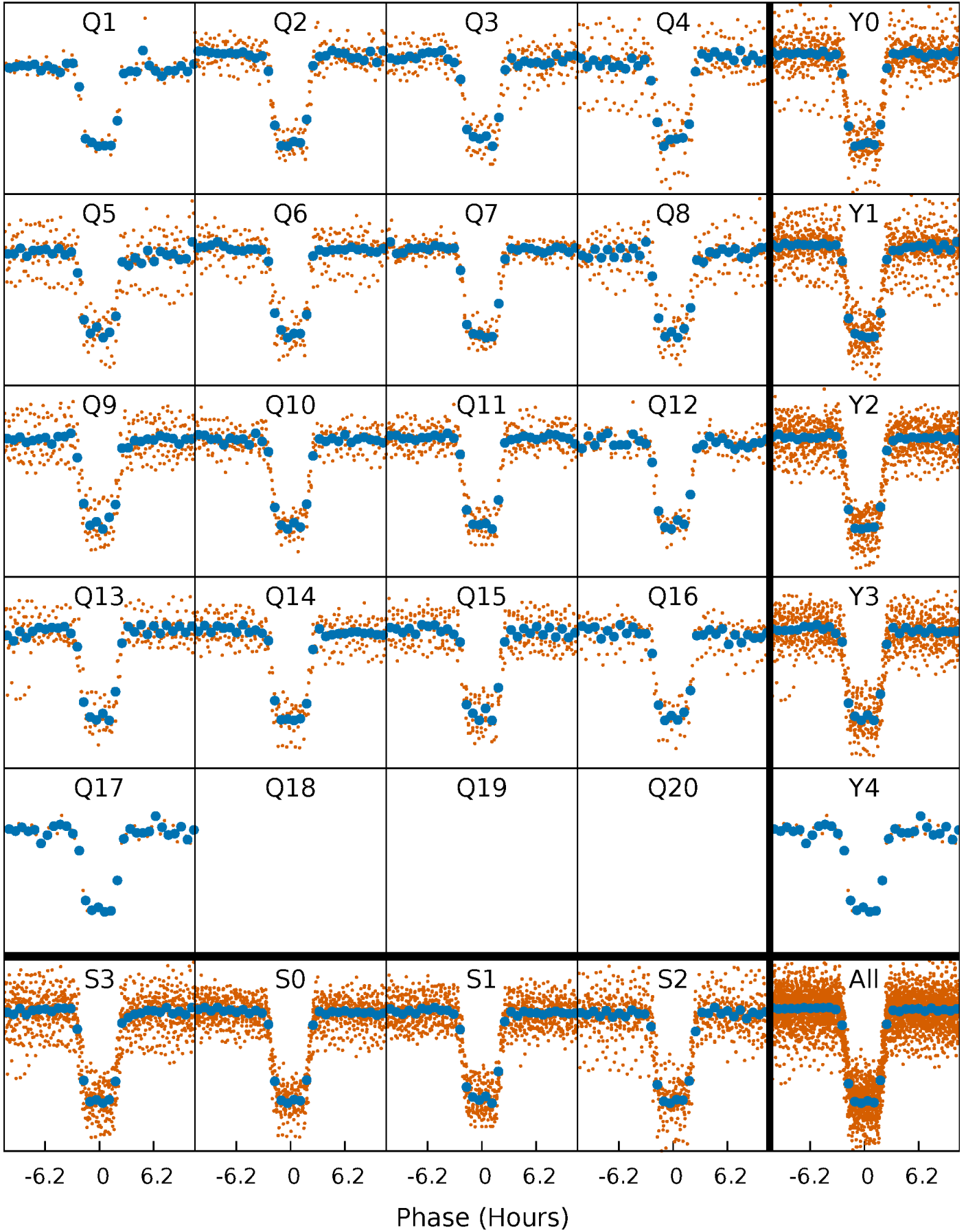


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



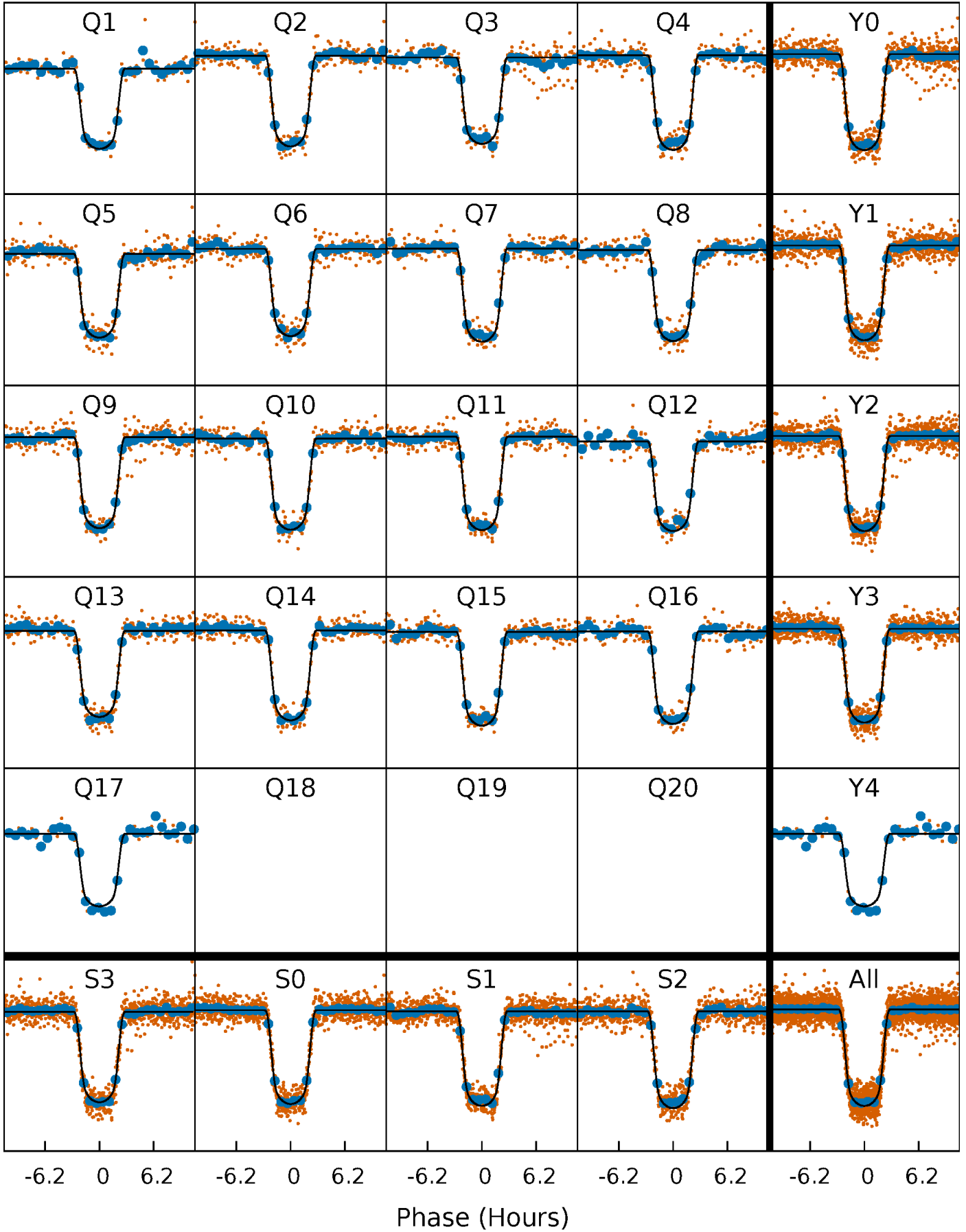
PDC Quarter-Phased Transit Curves

TCE 012251779-02 P= 14.844233 Days $T_0=145.230772$ (BKJD)



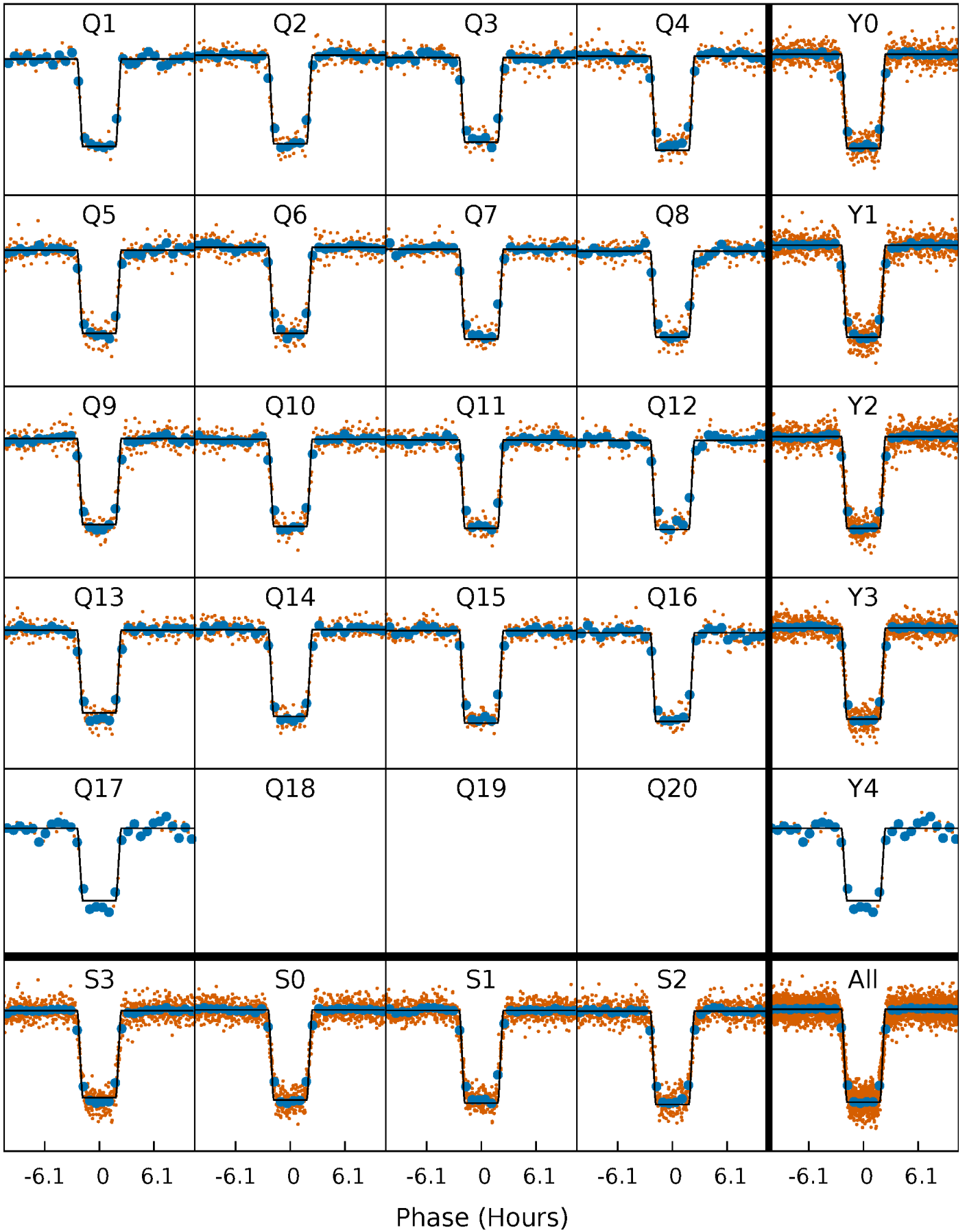
DV Quarter-Phased Transit Curves

TCE 012251779-02 P= 14.844233 Days $T_0=145.230772$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

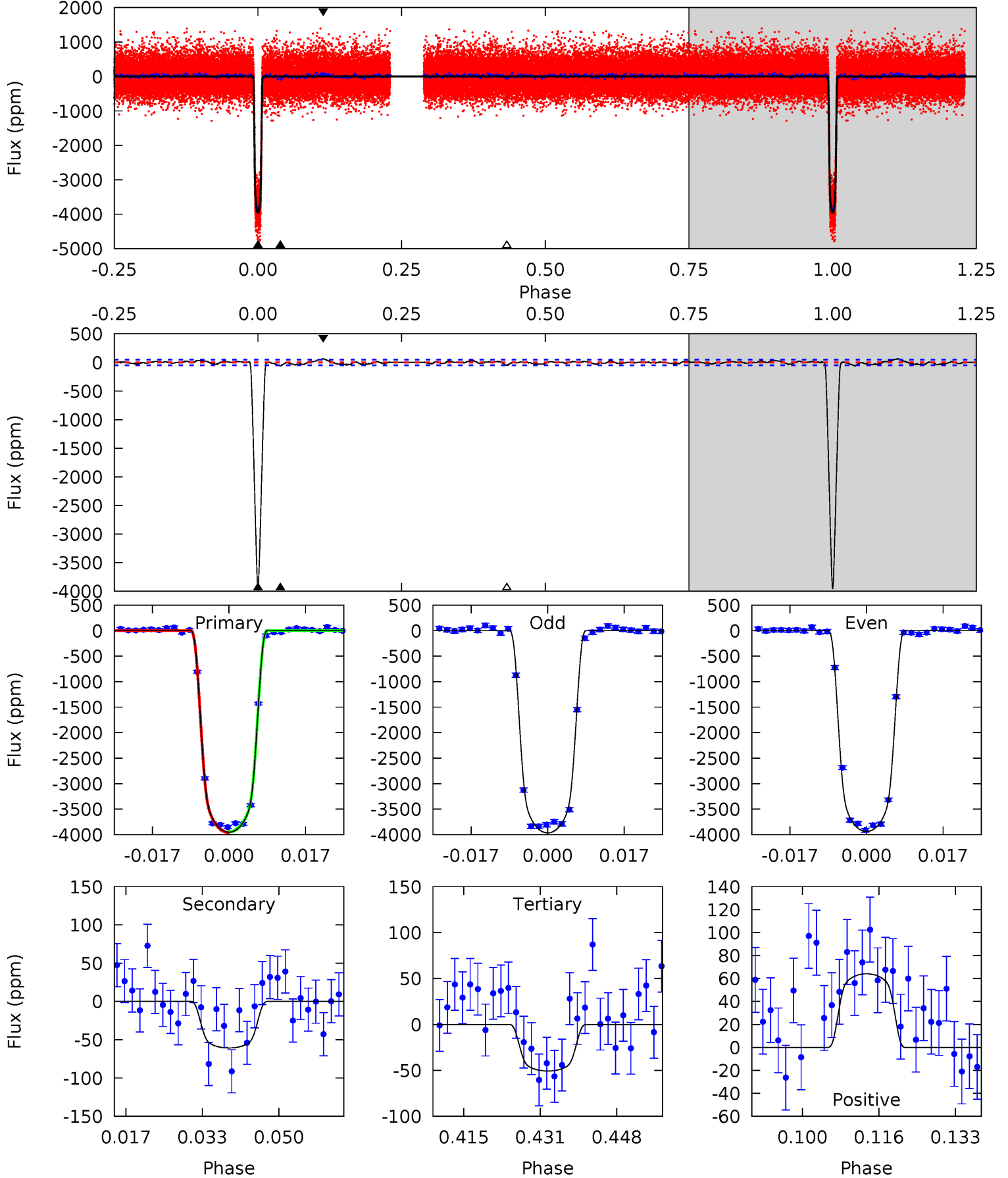
TCE 012251779-02 P= 14.844200 Days $T_0=145.232400$ (BKJD)



DV Model-Shift Uniqueness Test

012251779-02, P = 14.844233 Days, E = 130.386539 Days

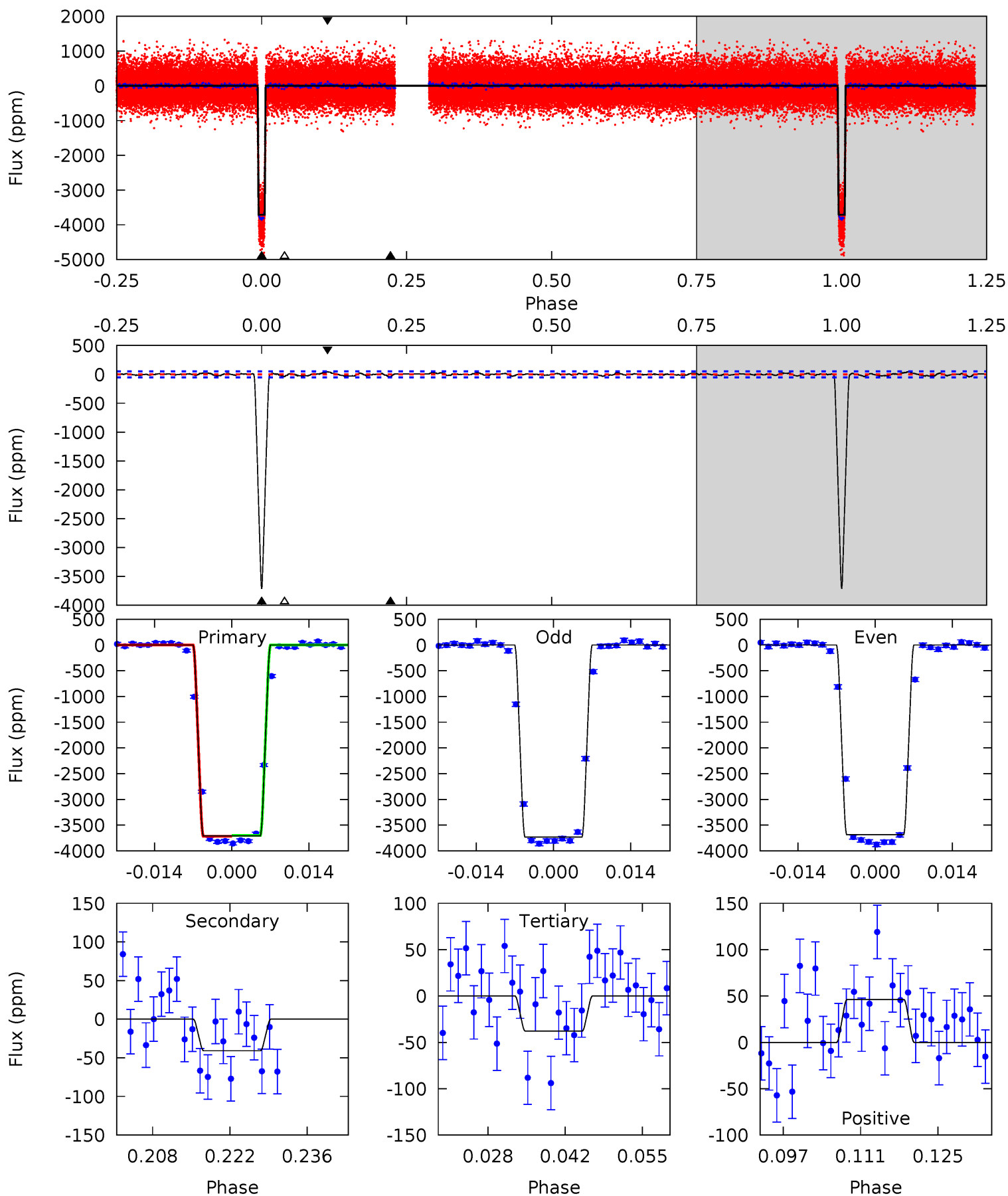
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
396.2	6.10	5.08	6.43	4.93	2.40	1.82	391.2	389.8	1.01	-0.33	1.37	1.00	0.02	0.83



Alt Model-Shift Uniqueness Test

012251779-02, P = 14.844200 Days, E = 130.388200 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
348.9	3.85	3.57	4.34	4.96	2.46	1.26	345.3	344.5	0.28	-0.50	2.20	1.01	0.01	0.80



Stellar Parameters For KIC 012251779

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6161^{+168}_{-168}	$4.367^{+0.175}_{-0.175}$	$-0.780^{+0.300}_{-0.300}$	$0.988^{+0.236}_{-0.193}$	$0.829^{+0.096}_{-0.059}$	$1.209^{+1.004}_{-0.552}$
	+3%/-3%	+4%/-4%	+38%/-38%	+24%/-20%	+12%/-7%	+83%/-46%
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 012251779-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-61±10	$7.01^{+1.01}_{-0.83}$	1131^{+82}_{-69}	2849^{+71}_{-79}	$8.460^{+2.872}_{-2.228}$
Alt.	-41±11	$6.70^{+0.95}_{-0.74}$	1132^{+79}_{-70}	2725^{+100}_{-116}	$6.041^{+2.751}_{-1.985}$

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

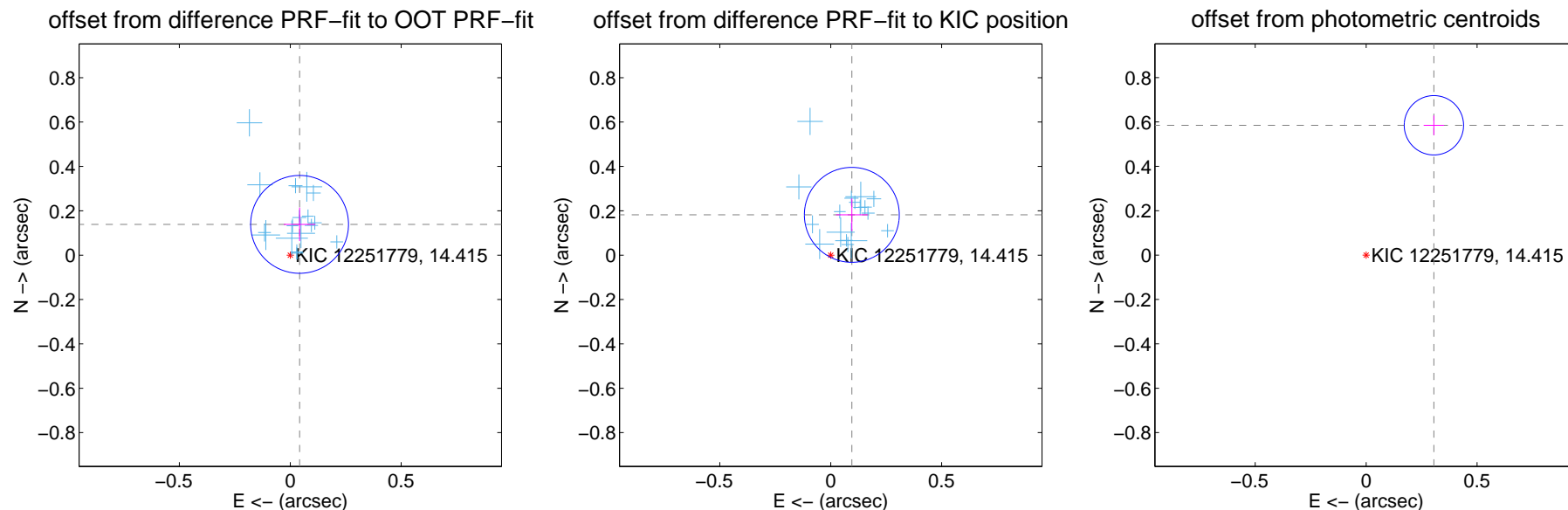
DV Centroid Data

Supplemental centroid analysis for 012251779-02. Kepler magnitude: 14.41. Transit SNR 238.49

There are 17 quarters with good PRF difference image offsets

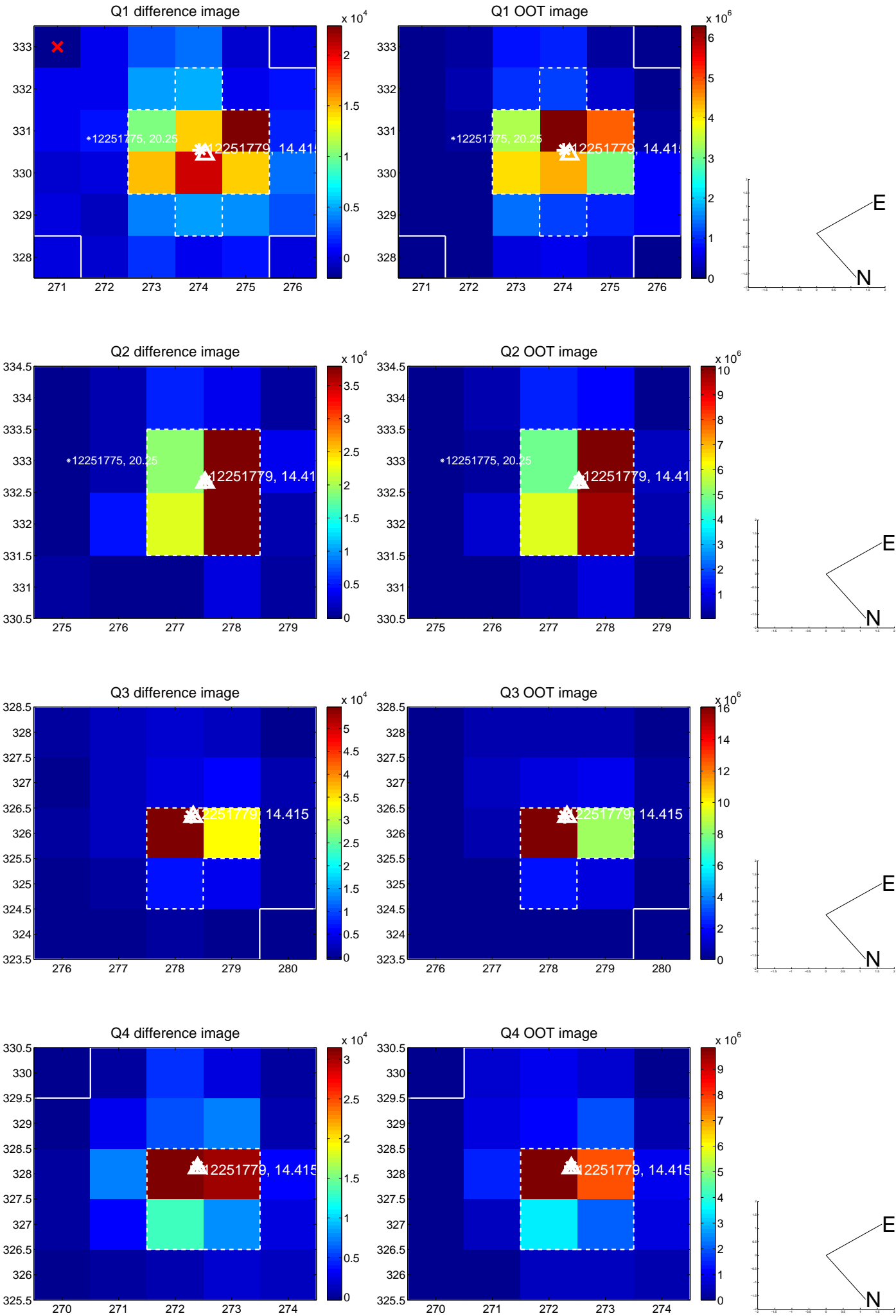
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.074	1.97	-0.042 ± 0.071	0.139 ± 0.075
PRF-fit source offset from KIC position	0.205 ± 0.071	2.88	-0.095 ± 0.072	0.182 ± 0.073
photometric centroid source offset	0.66 ± 0.04	14.80	-0.31 ± 0.05	0.58 ± 0.04

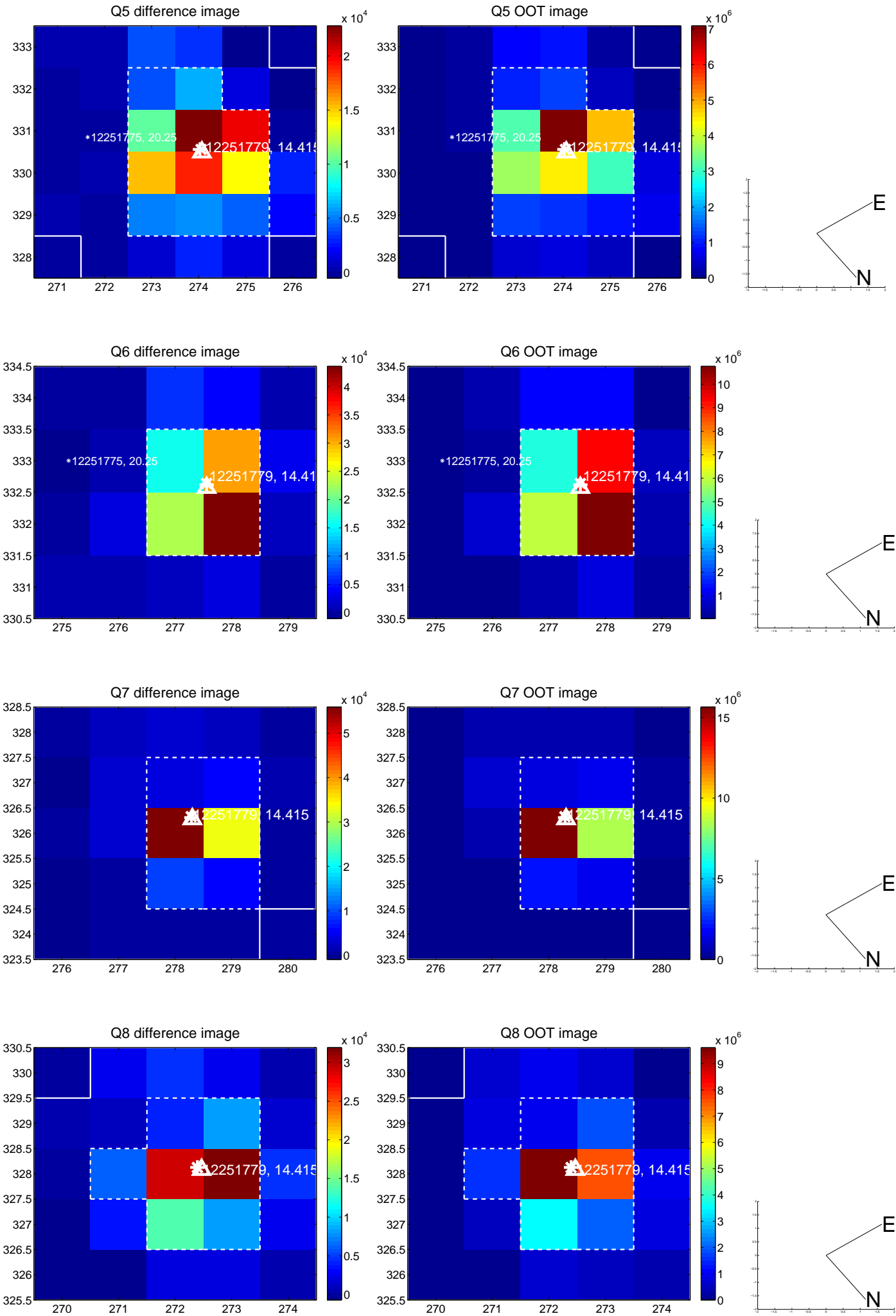


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

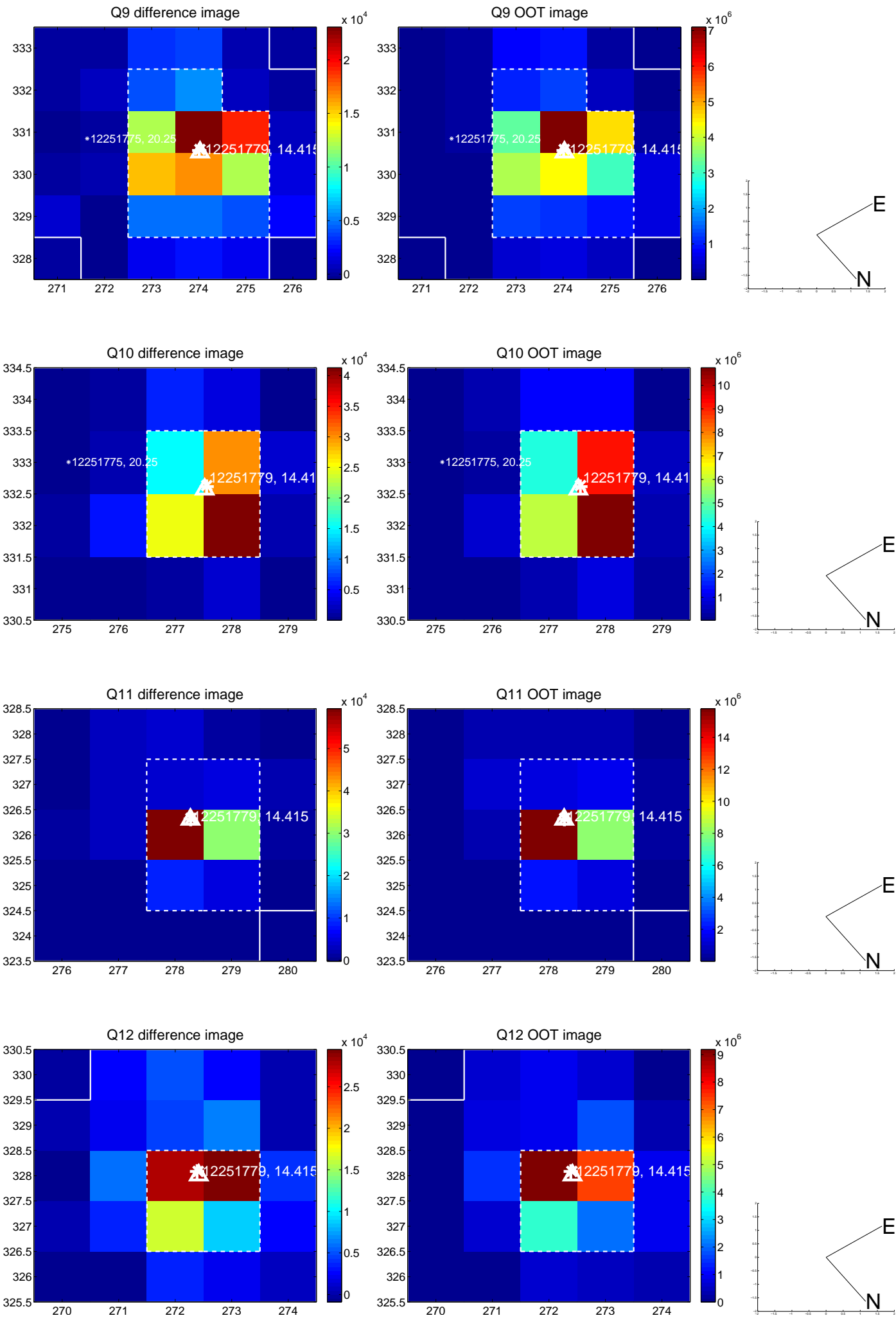
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



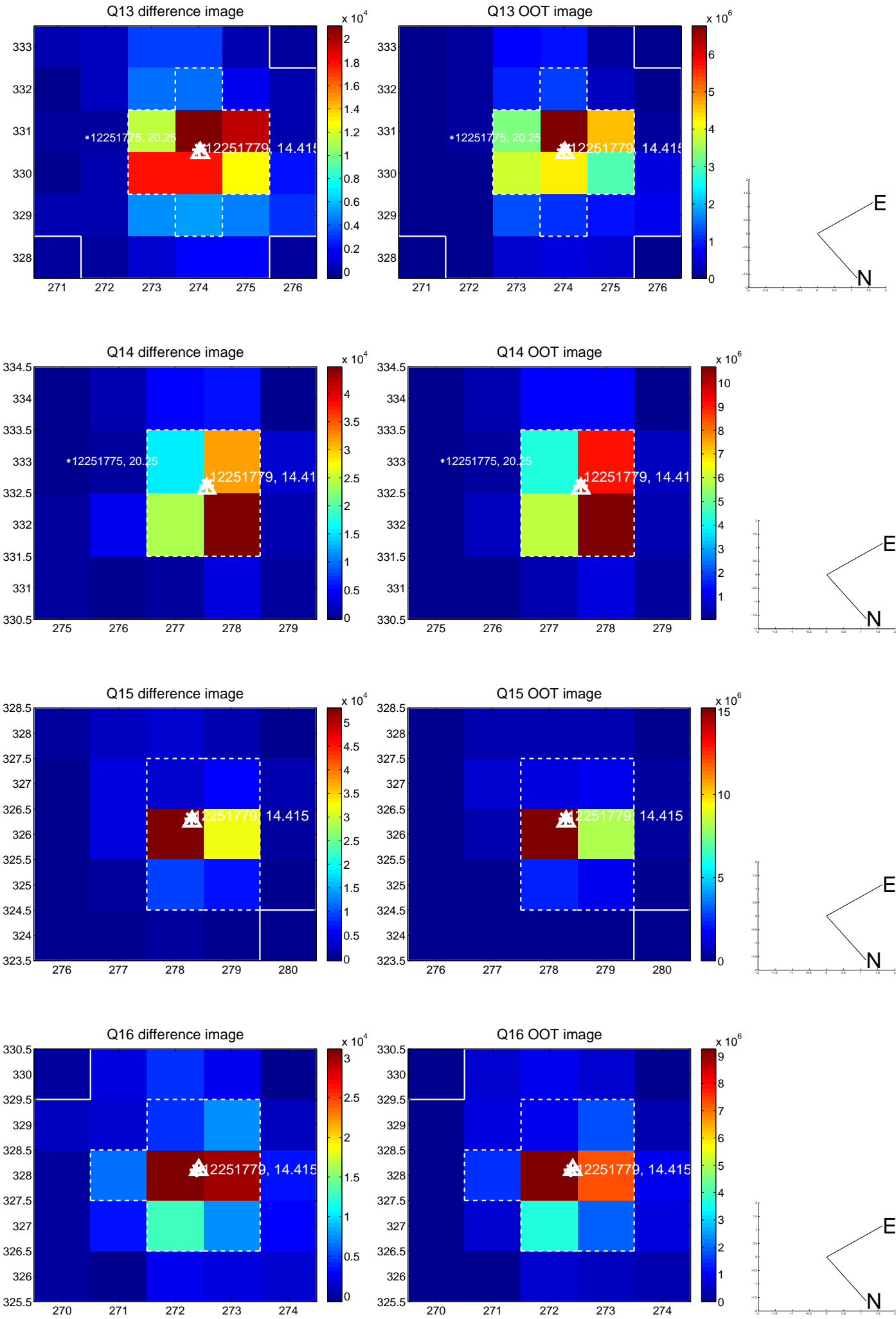
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



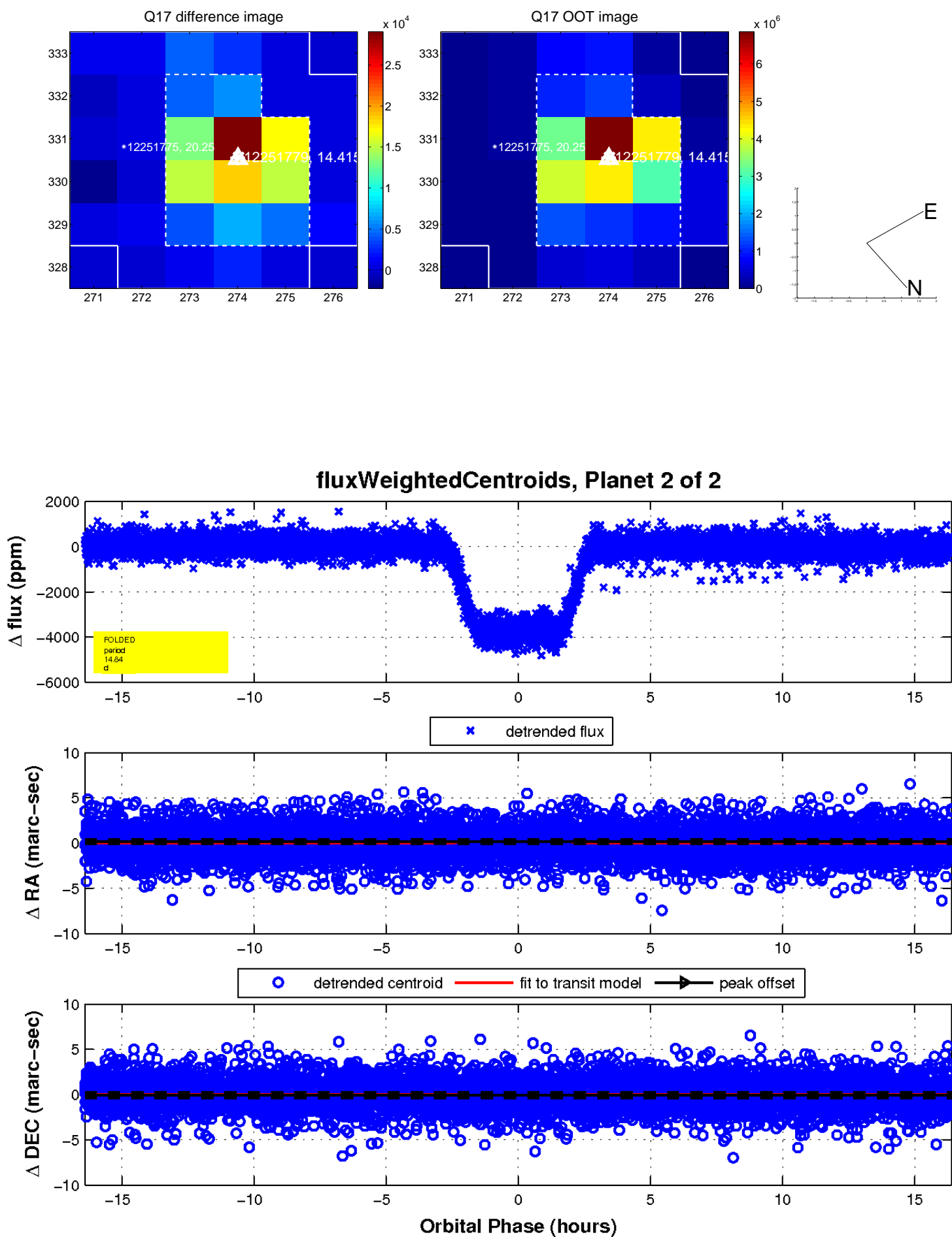
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

