

KIC 011359305

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})
011359305-01	OBS	7441.01	28.487063	132.873375	37563.4	3.768	2837.0	1336.6	2.38	6351	79.57	203.42
011359305-02	OBS	No	28.487081	139.064342	12409.1	6.415	1177.0	1073.0	2.38	6351	46.81	203.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011359305-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011359305-02	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.

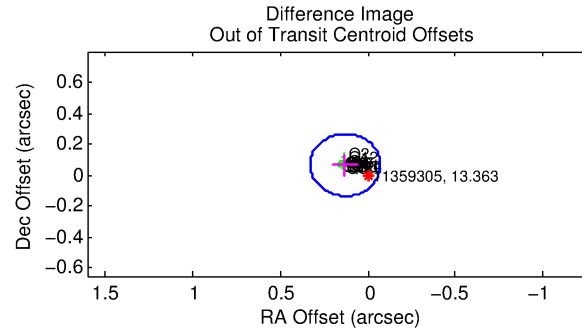
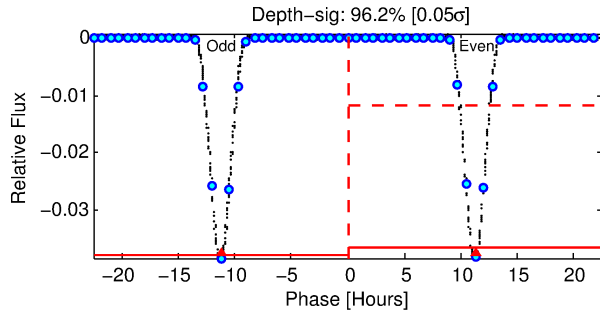
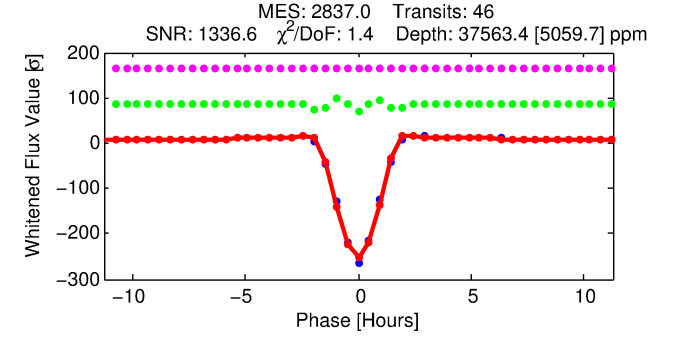
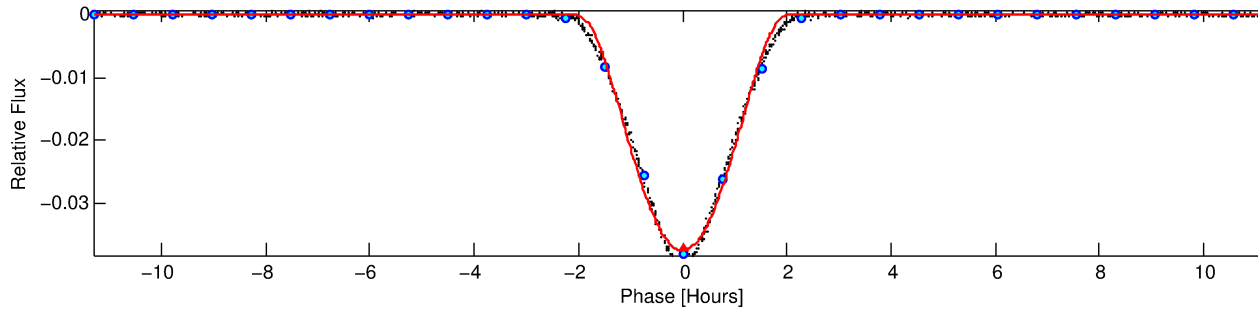
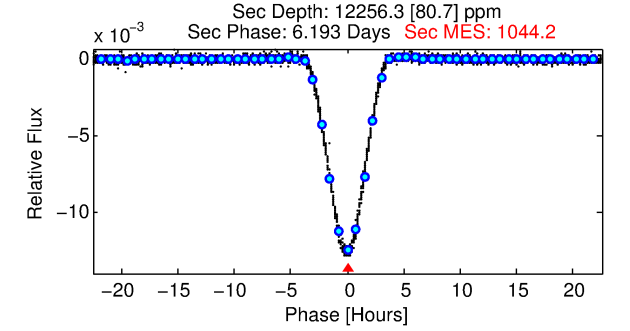
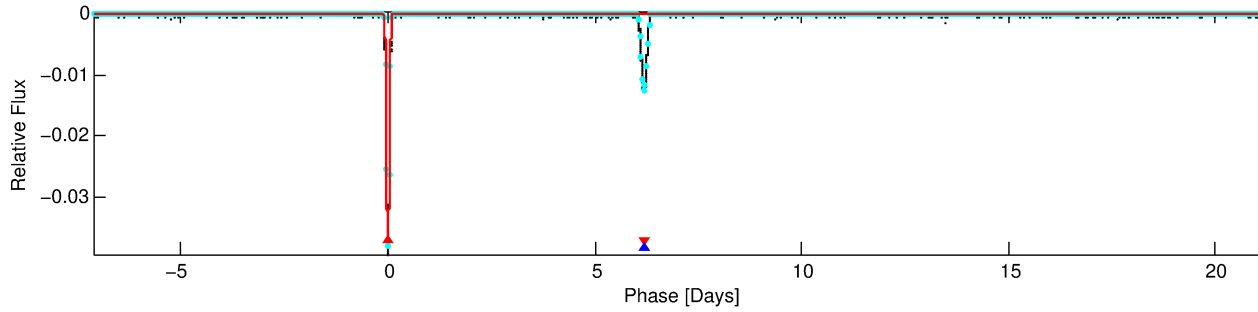
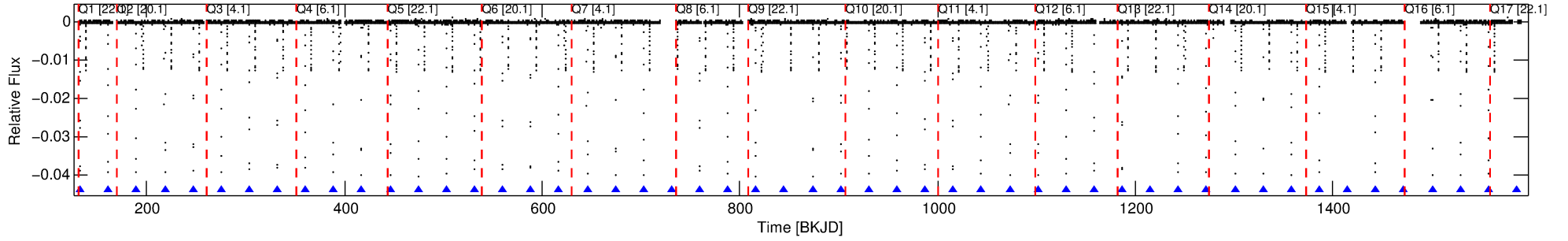
Ephemeris Match Information For 011359305-01

No Significant Match Found

DV One-Page Summary

KIC: 11359305 Candidate: 1 of 2 Period: 28.487 d
KOI: K07441.01 Corr: 0.996

Kp: 13.36 R*: 2.38 Rs Teff: 6351.0 K Logg: 3.81 Fe/H: -0.160



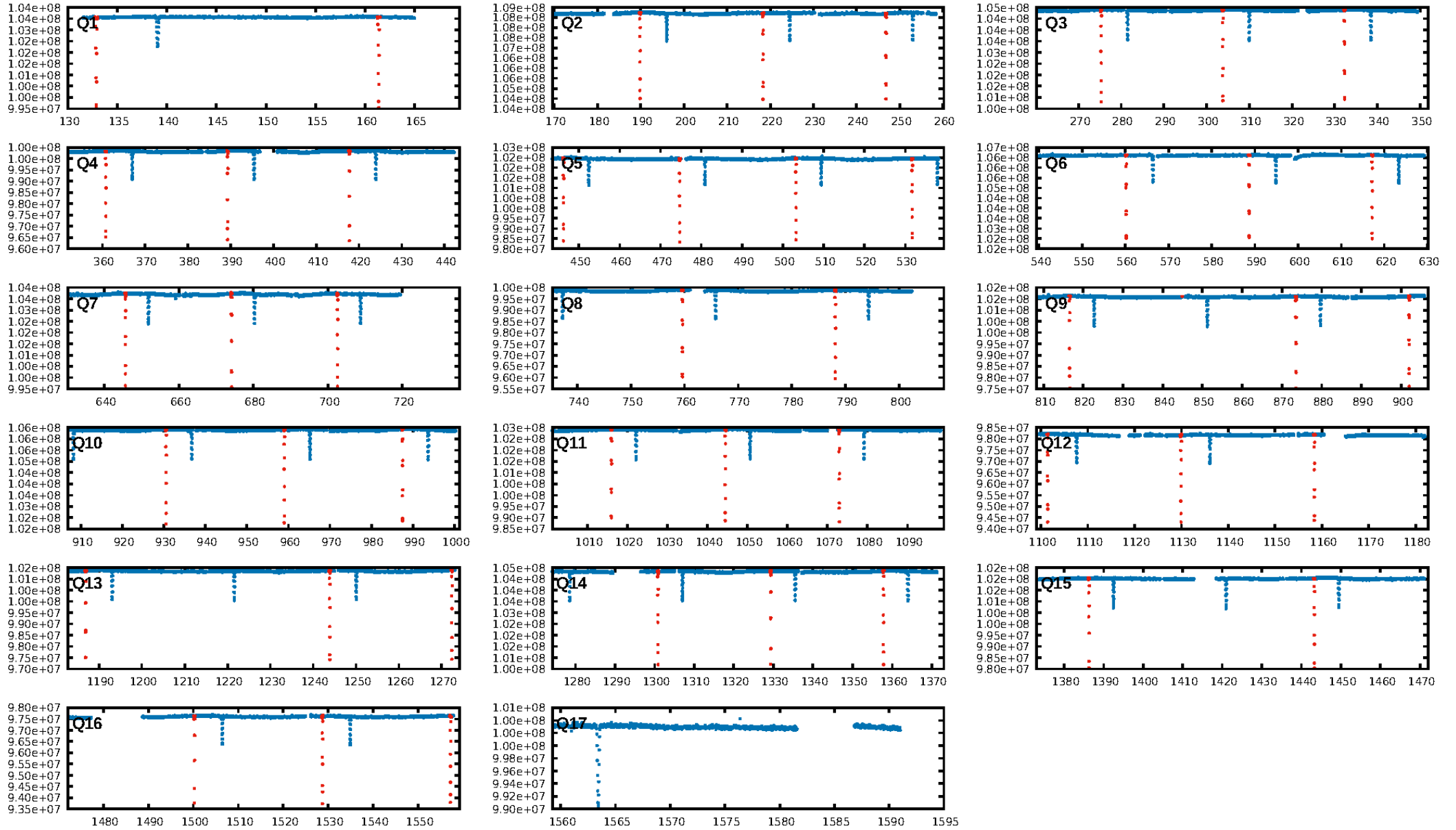
DV Fit Results:

Period = 28.48706 [0.00000] d
Epoch = 132.8734 [0.0000] BKJD
Rp/R* = 0.3057 [0.0143]
a/R* = 48.51 [0.11]
b = 1.00 [0.01]
Seff = 203.42 [102.86]
Teq = 963 [122] K
Rp = 79.57 [27.58] Re
a = 0.2019 [0.0639] AU
Ag = 43.41 [21.82] [1.94σ]
Teffp = 3822 [137] K [15.58σ]

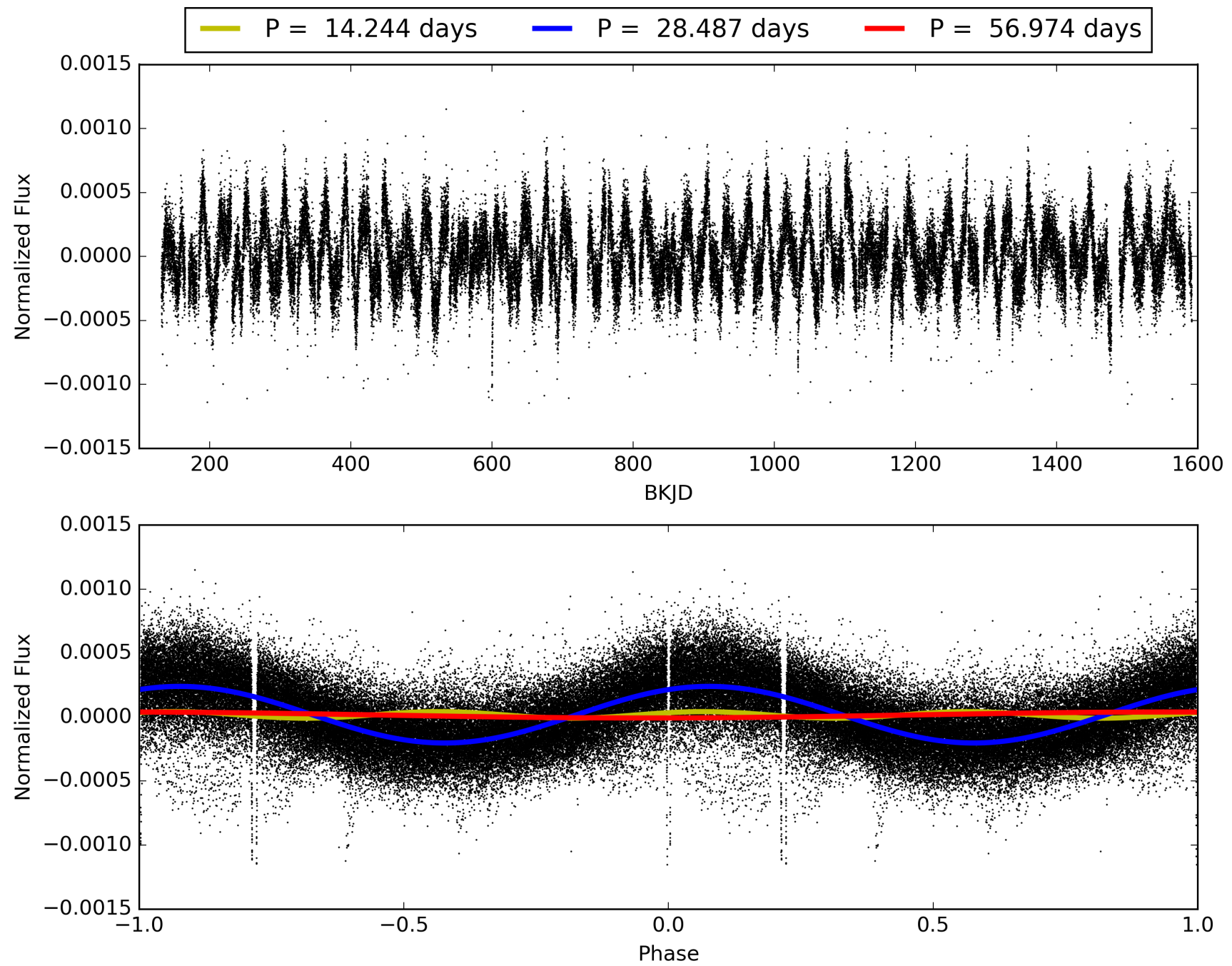
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [44/44]
GhostDiagnostic-chr: 2.904
Centroid-sig: 0.0%
Centroid-so: 0.161 arcsec [39.04σ]
OotOffset-rm: 0.147 arcsec [2.19σ]
KicOffset-rm: 0.122 arcsec [1.79σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 011359305-01, PDC Light Curves

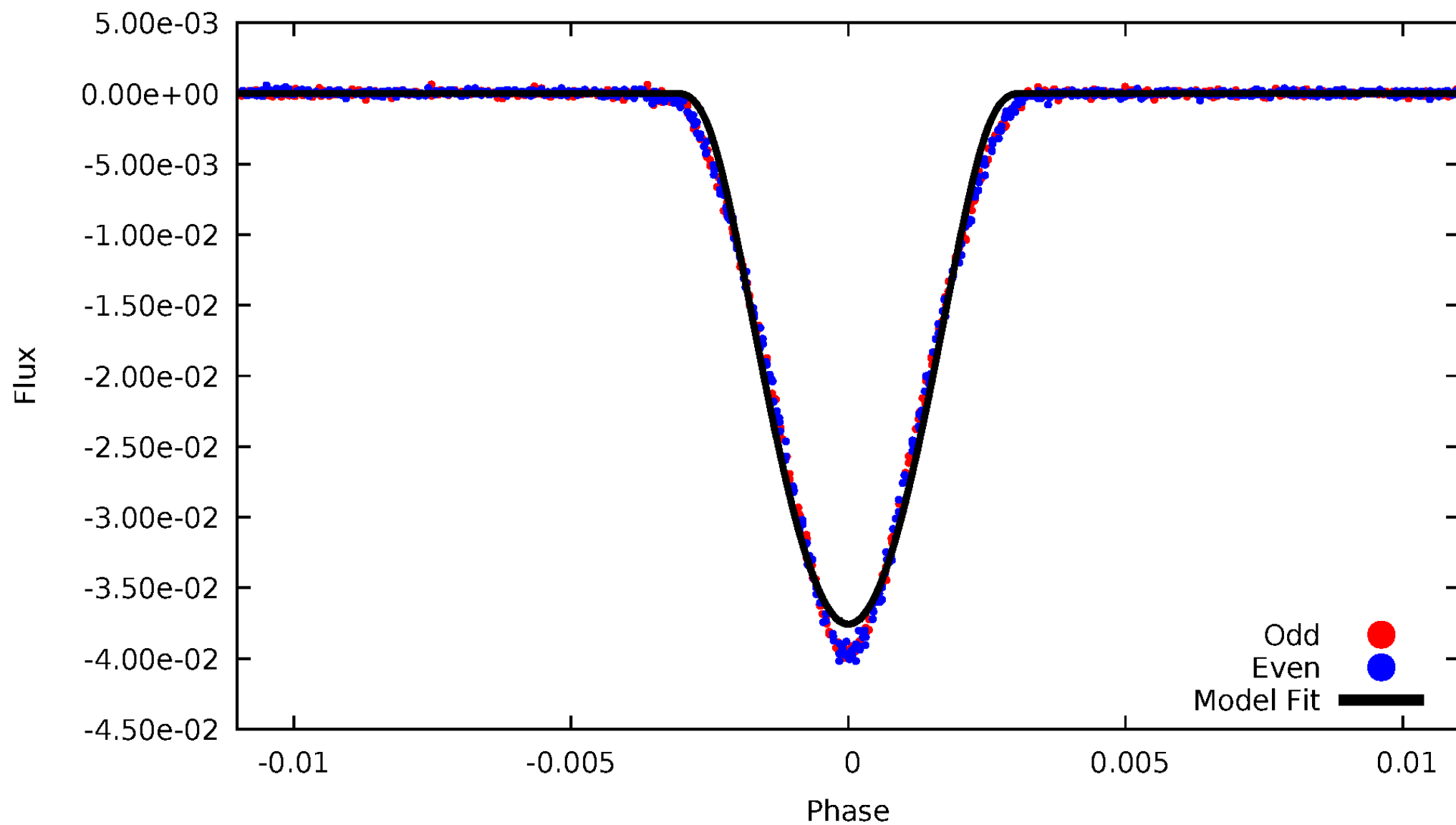


TCE 011359305-01



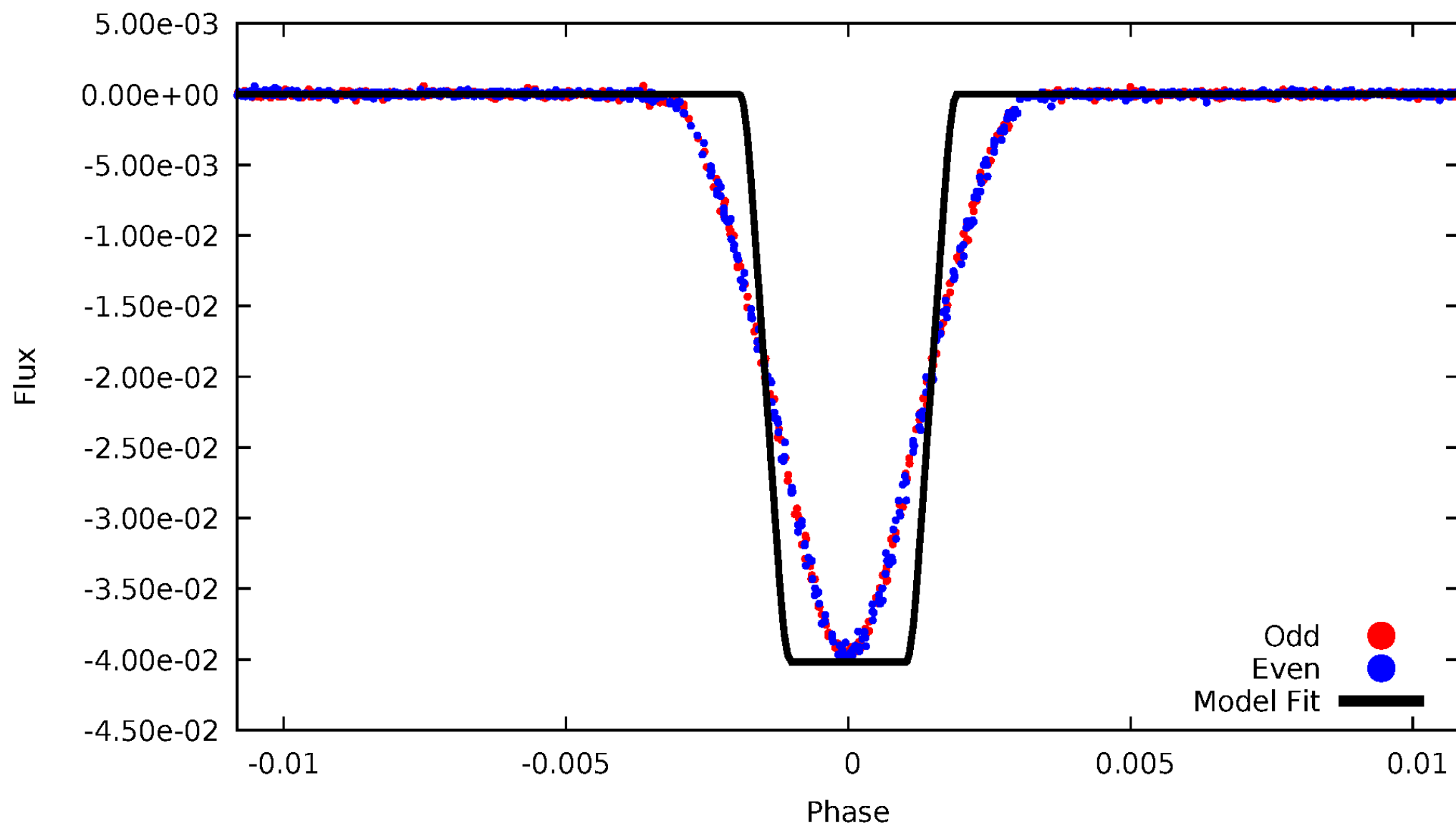
DV Odd/Even

TCE 011359305-01



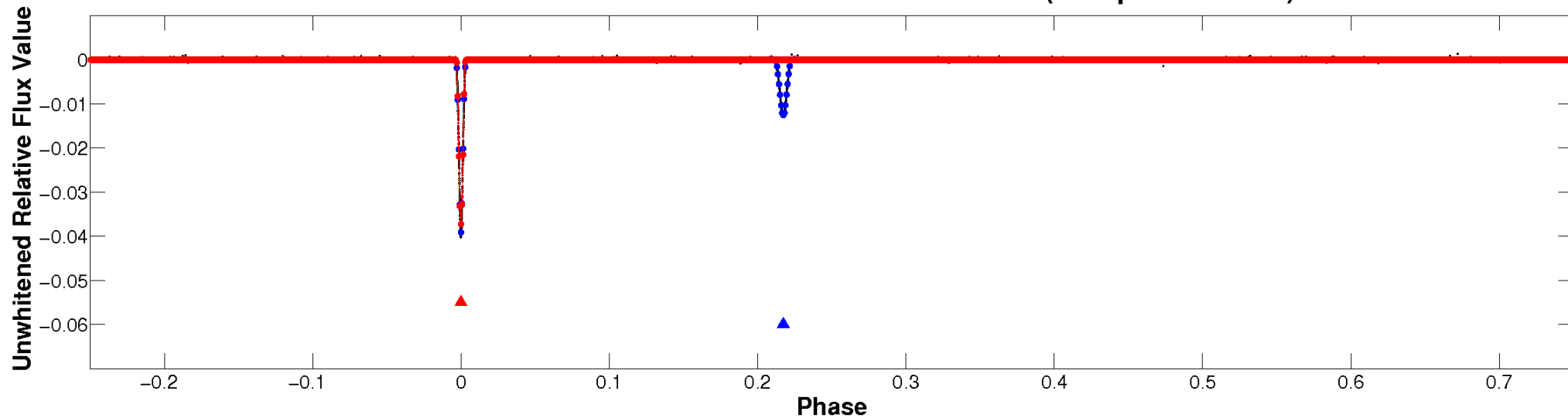
ALT Odd/Even

TCE 011359305-01

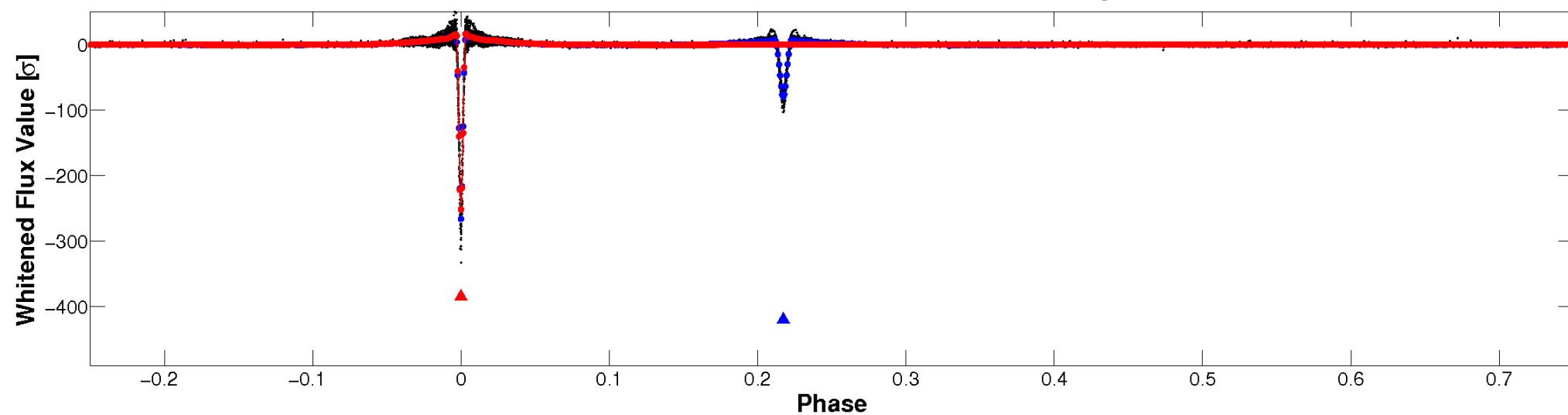


Non-Whitened Vs. Whitened Light Curve

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

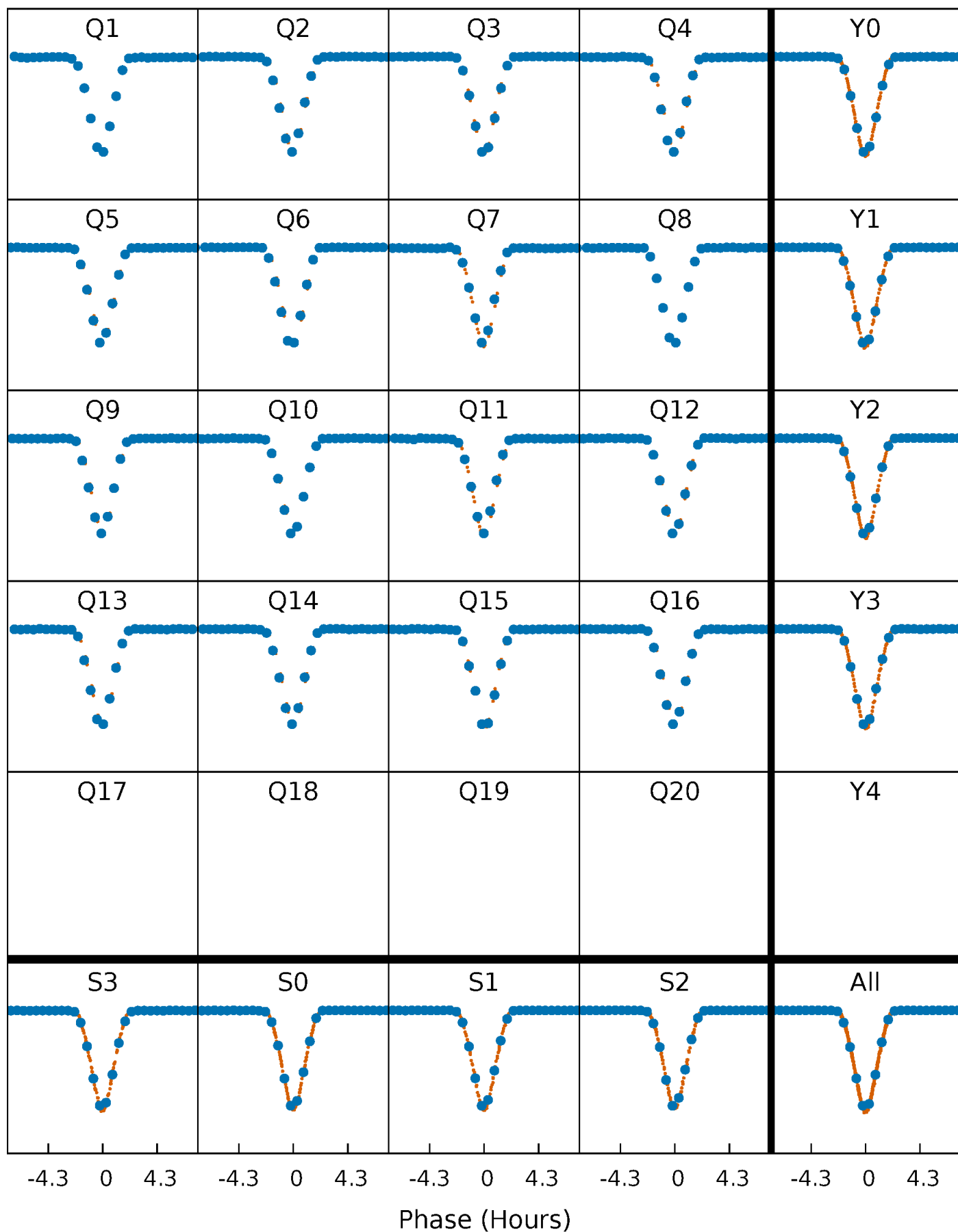


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



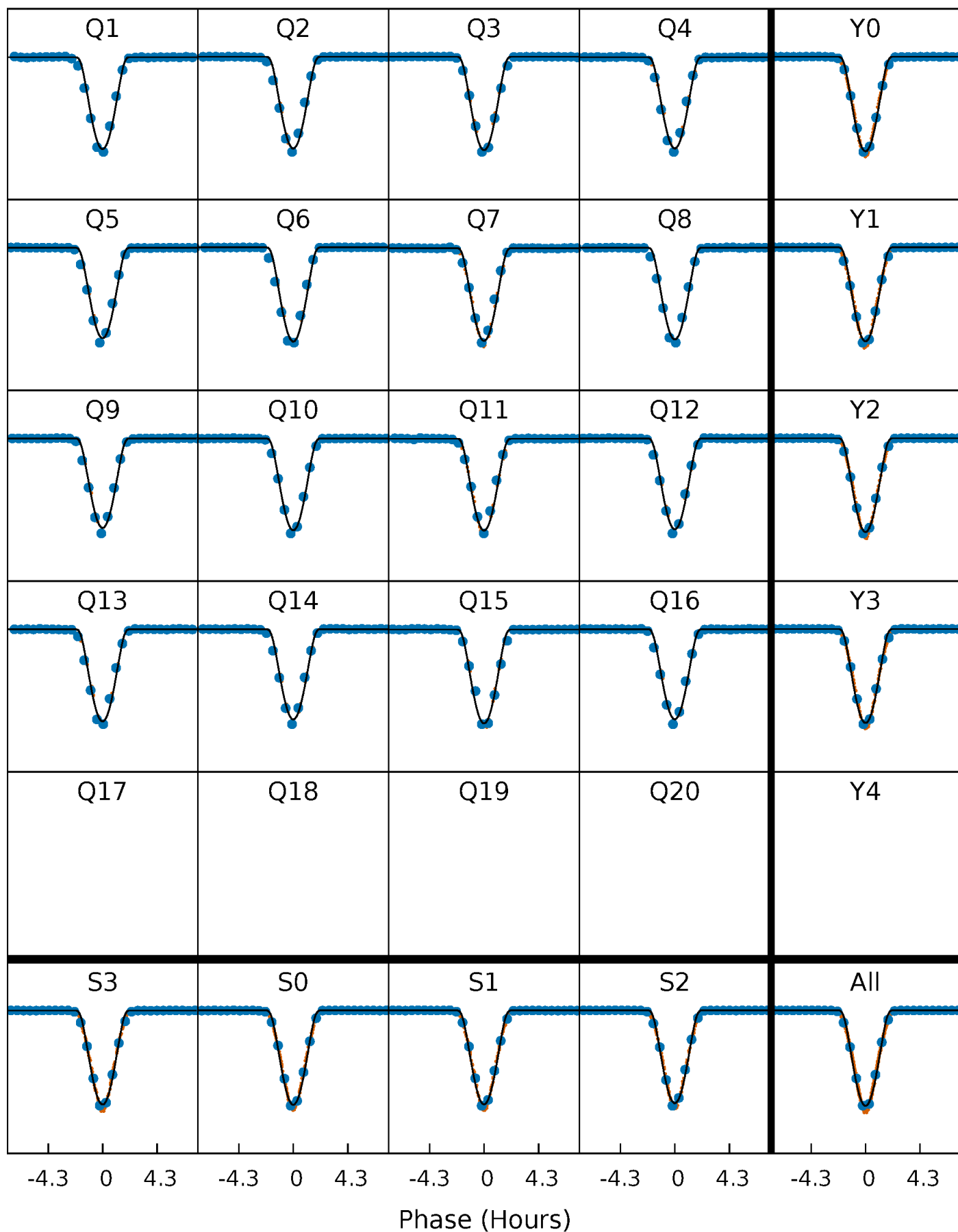
PDC Quarter-Phased Transit Curves

TCE 011359305-01 P= 28.487063 Days $T_0=132.873375$ (BKJD)



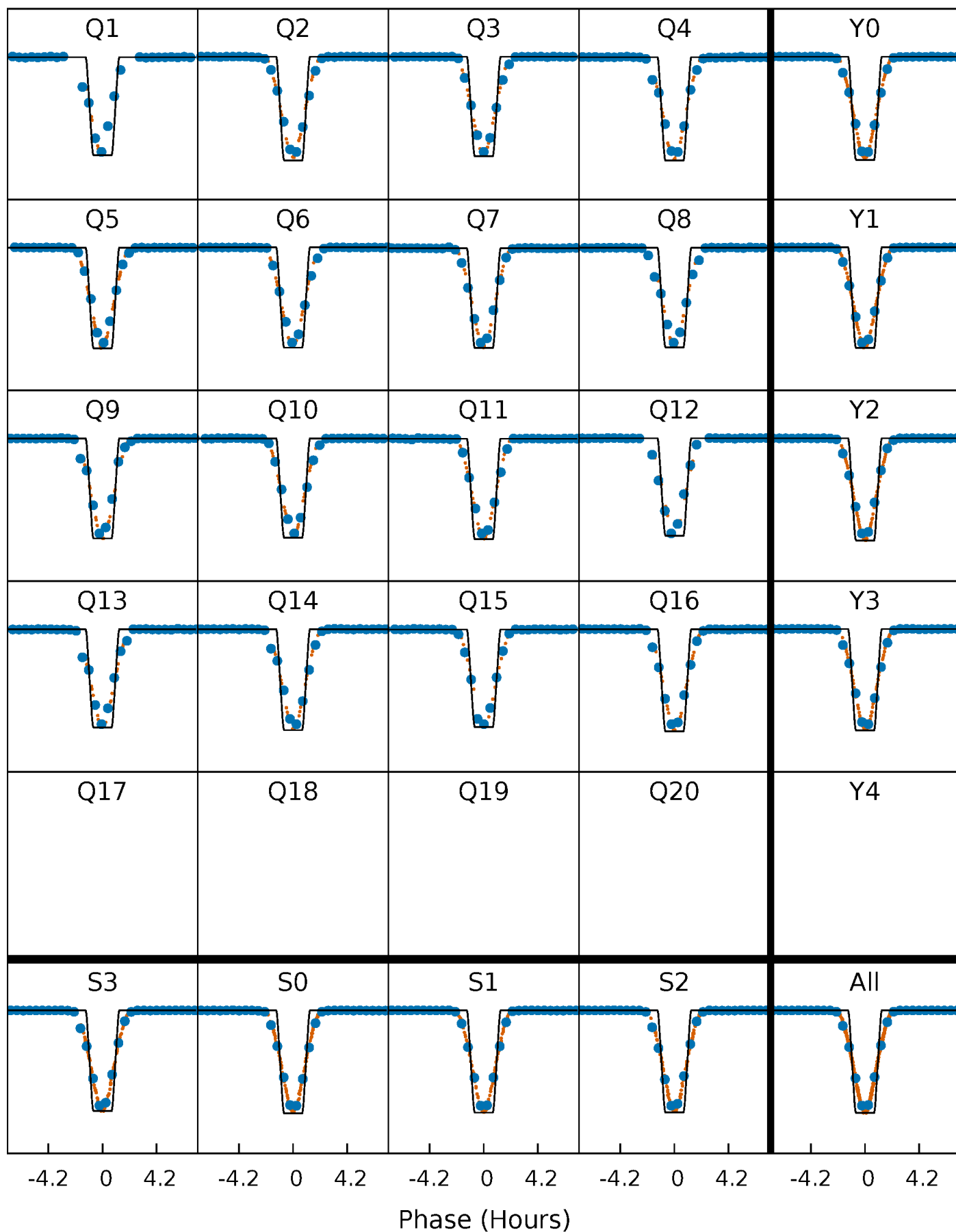
DV Quarter-Phased Transit Curves

TCE 011359305-01 P= 28.487063 Days $T_0=132.873375$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

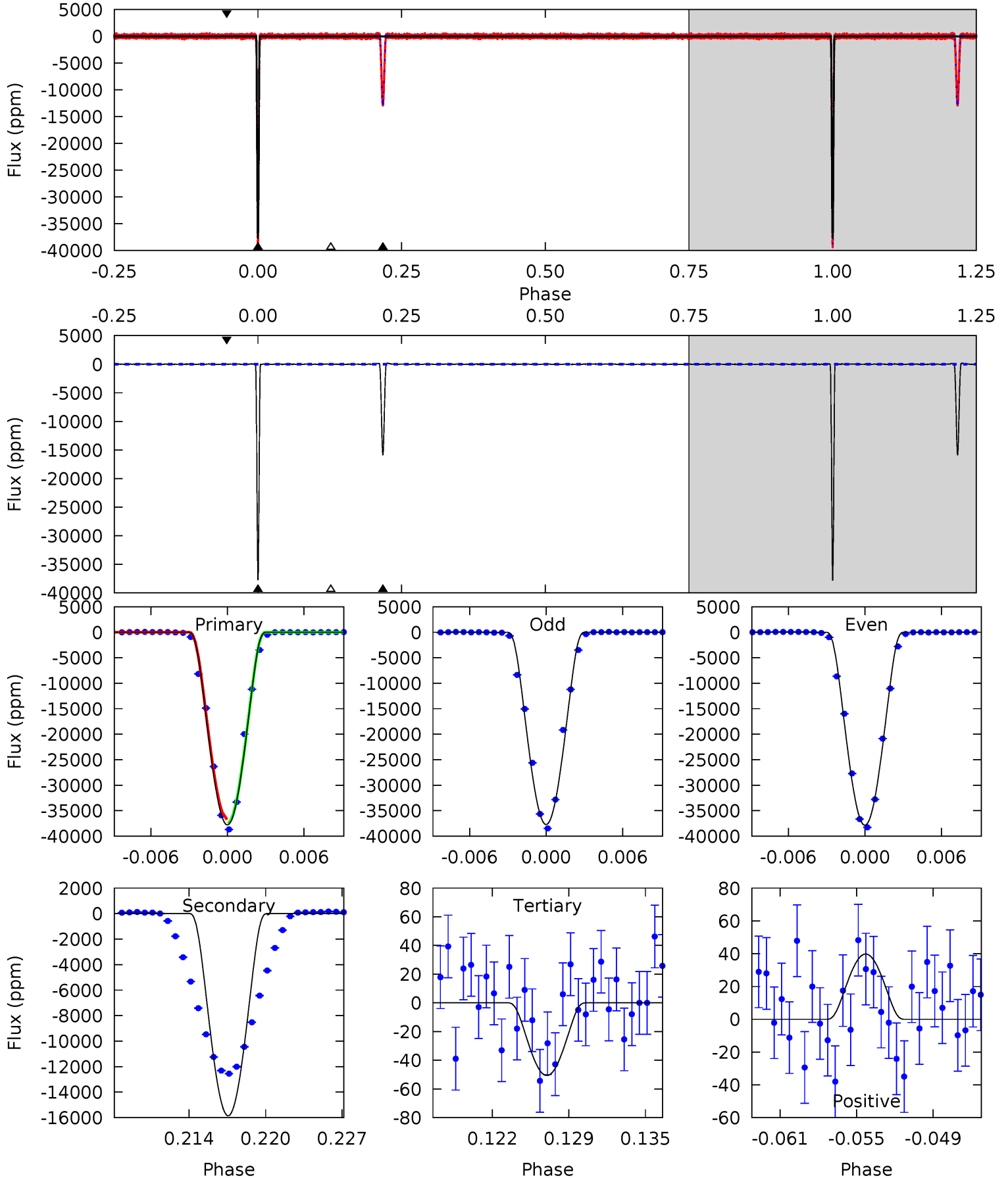
TCE 011359305-01 P= 28.487052 Days $T_0=132.873872$ (BKJD)



DV Model-Shift Uniqueness Test

011359305-01, P = 28.487063 Days, E = 104.386312 Days

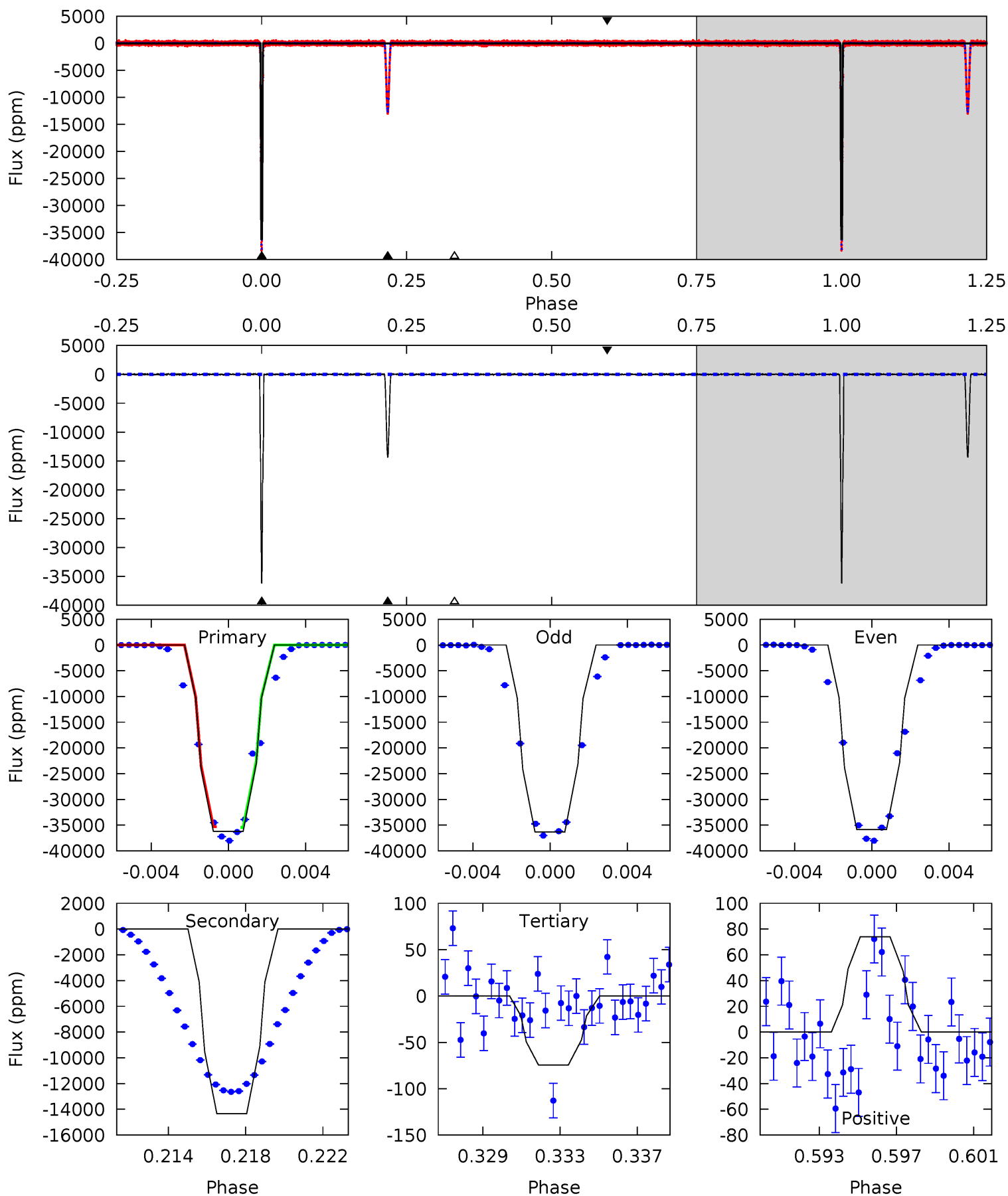
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4244	1781	5.69	4.47	5.12	2.74	2.31	4239	4240	1775	1776	8.01	1.00	0.00	0



Alt Model-Shift Uniqueness Test

011359305-01, P = 28.487052 Days, E = 104.386820 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1904	754.3	3.92	3.89	5.21	2.89	4.35	1900	1900	750.4	750.4	13.5	1.00	0.00	0



Stellar Parameters For KIC 011359305

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6351^{+154}_{-173}	$3.814^{+0.285}_{-0.095}$	$-0.160^{+0.300}_{-0.250}$	$2.385^{+0.441}_{-0.819}$	$1.352^{+0.252}_{-0.252}$	$0.140^{+0.255}_{-0.051}$
	+2%/-3%	+7%/-2%	+188%/-156%	+18%/-34%	+19%/-19%	+182%/-36%
Source	PHO1	FLK73	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 011359305-01 / KOI 7441.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15841 ± 9	$77.52^{+10.01}_{-14.56}$	1312^{+88}_{-104}	4318^{+114}_{-114}	62^{+25}_{-13}
Alt.	-14347 ± 19	$50.98^{+7.16}_{-9.48}$	1323^{+73}_{-105}	5025^{+188}_{-198}	129^{+57}_{-28}

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 $A_{obs} \gg 1.0$

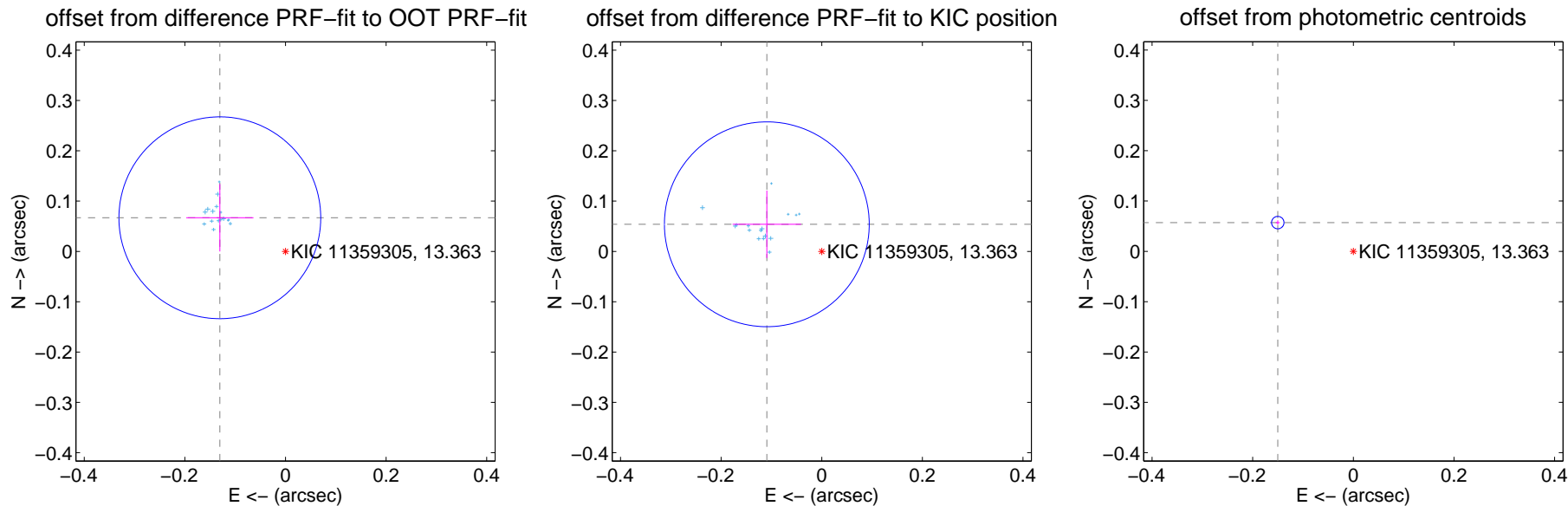
DV Centroid Data

Supplemental centroid analysis for 011359305-01. Kepler magnitude: 13.36. Transit SNR 1336.58

There are 16 quarters with good PRF difference image offsets

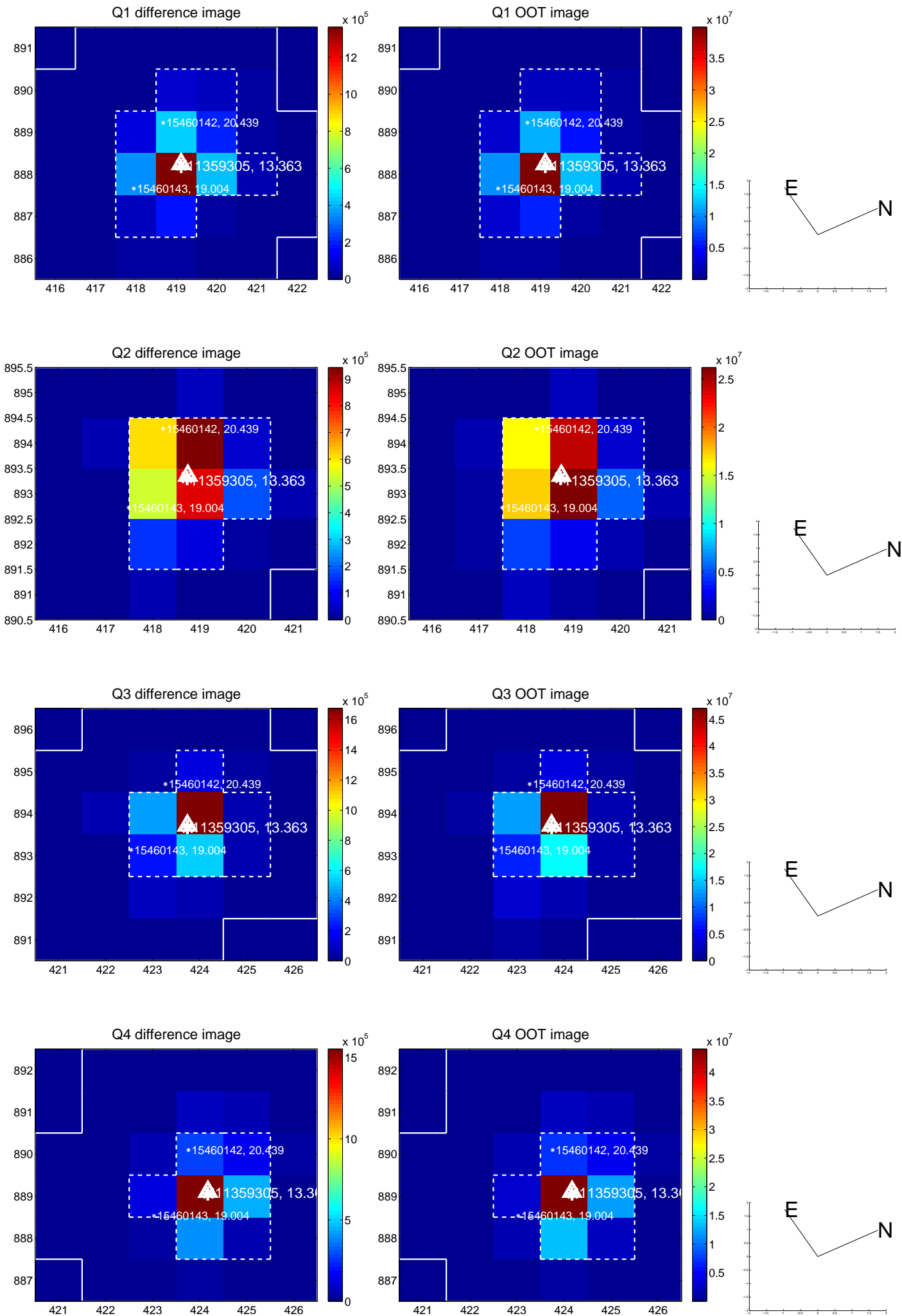
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.147 ± 0.067	2.19	0.131 ± 0.067	0.067 ± 0.067
PRF-fit source offset from KIC position	0.122 ± 0.068	1.79	0.109 ± 0.068	0.054 ± 0.067
photometric centroid source offset	0.16 ± 0.00	39.04	0.15 ± 0.00	0.06 ± 0.00

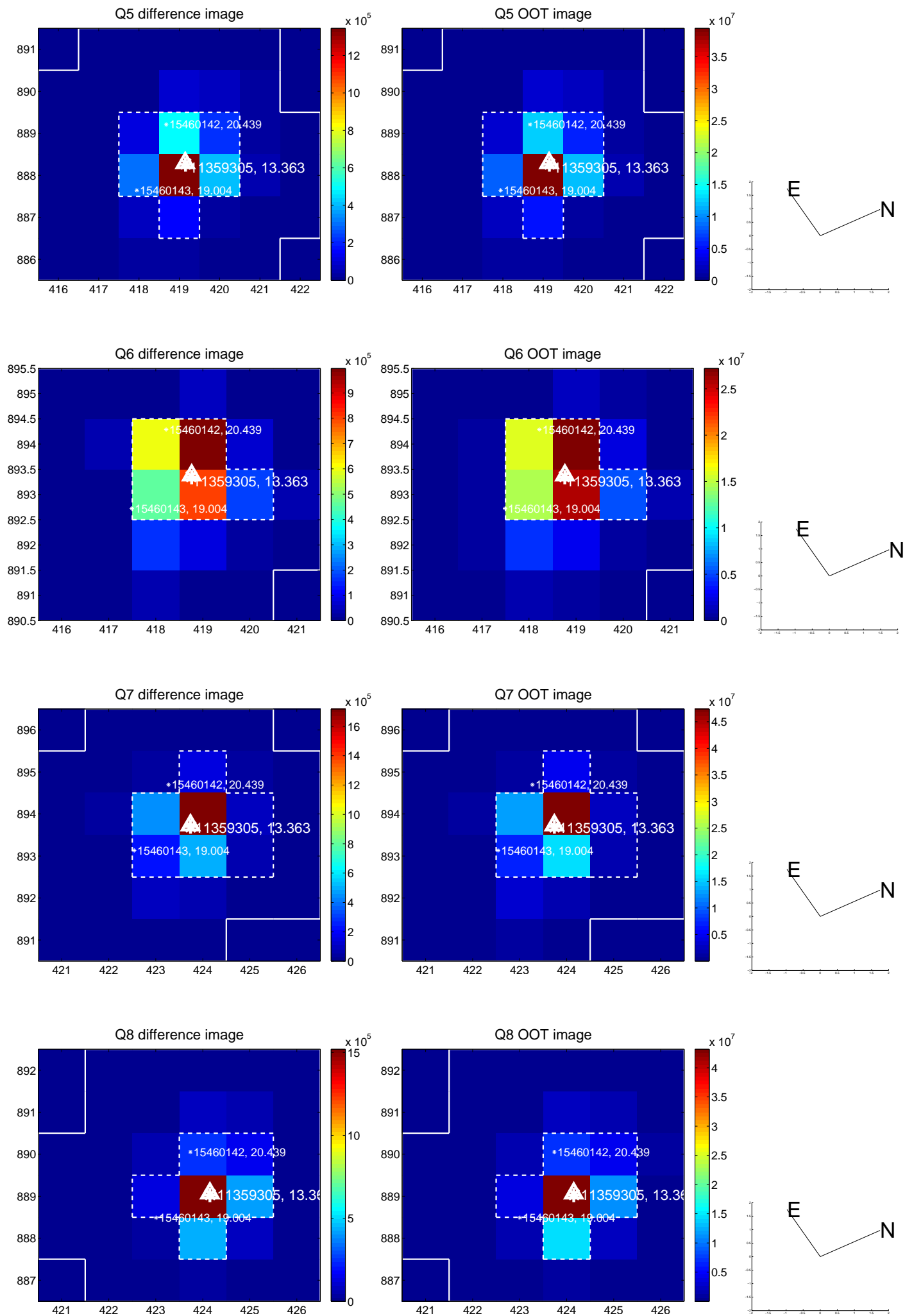


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

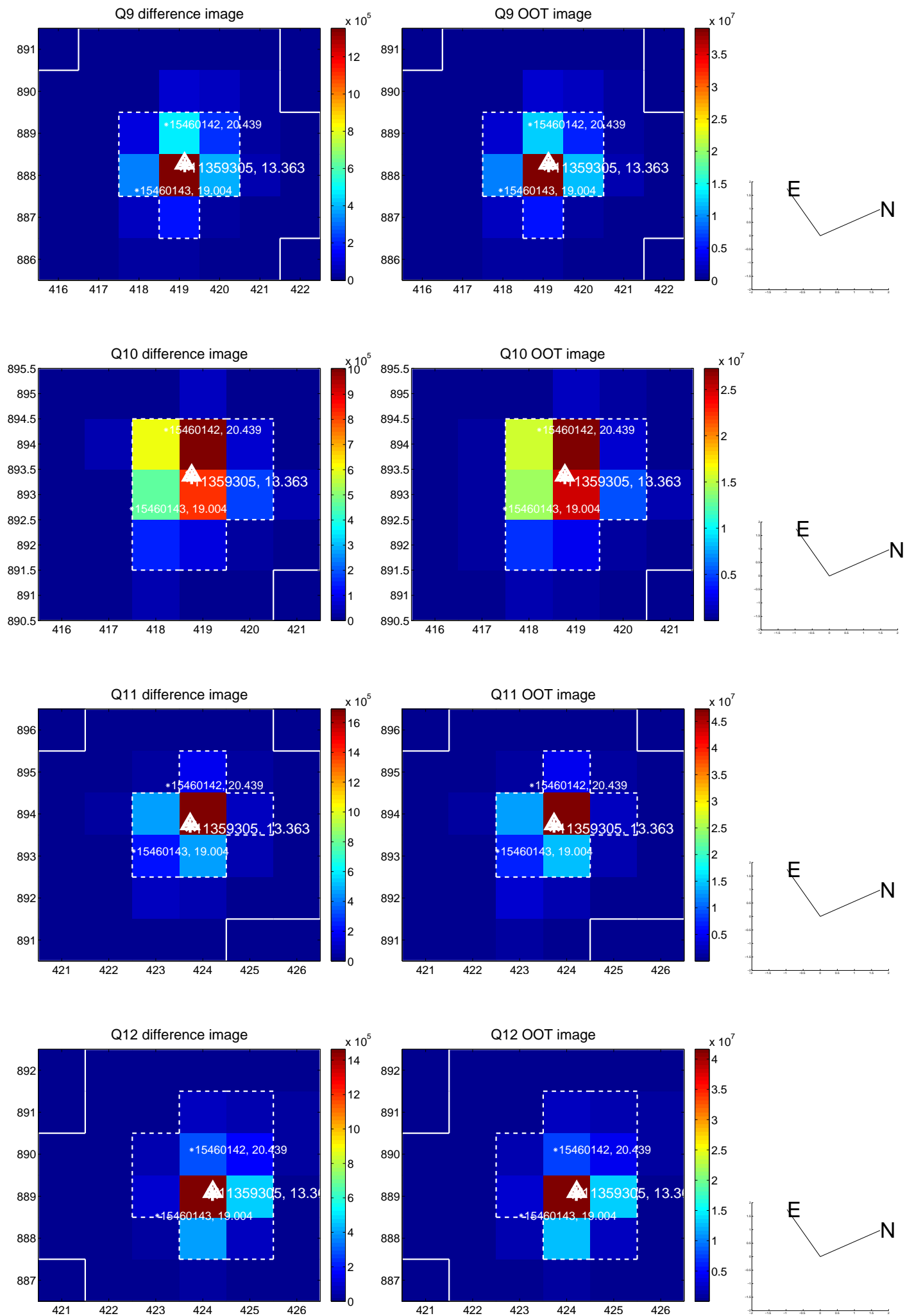
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



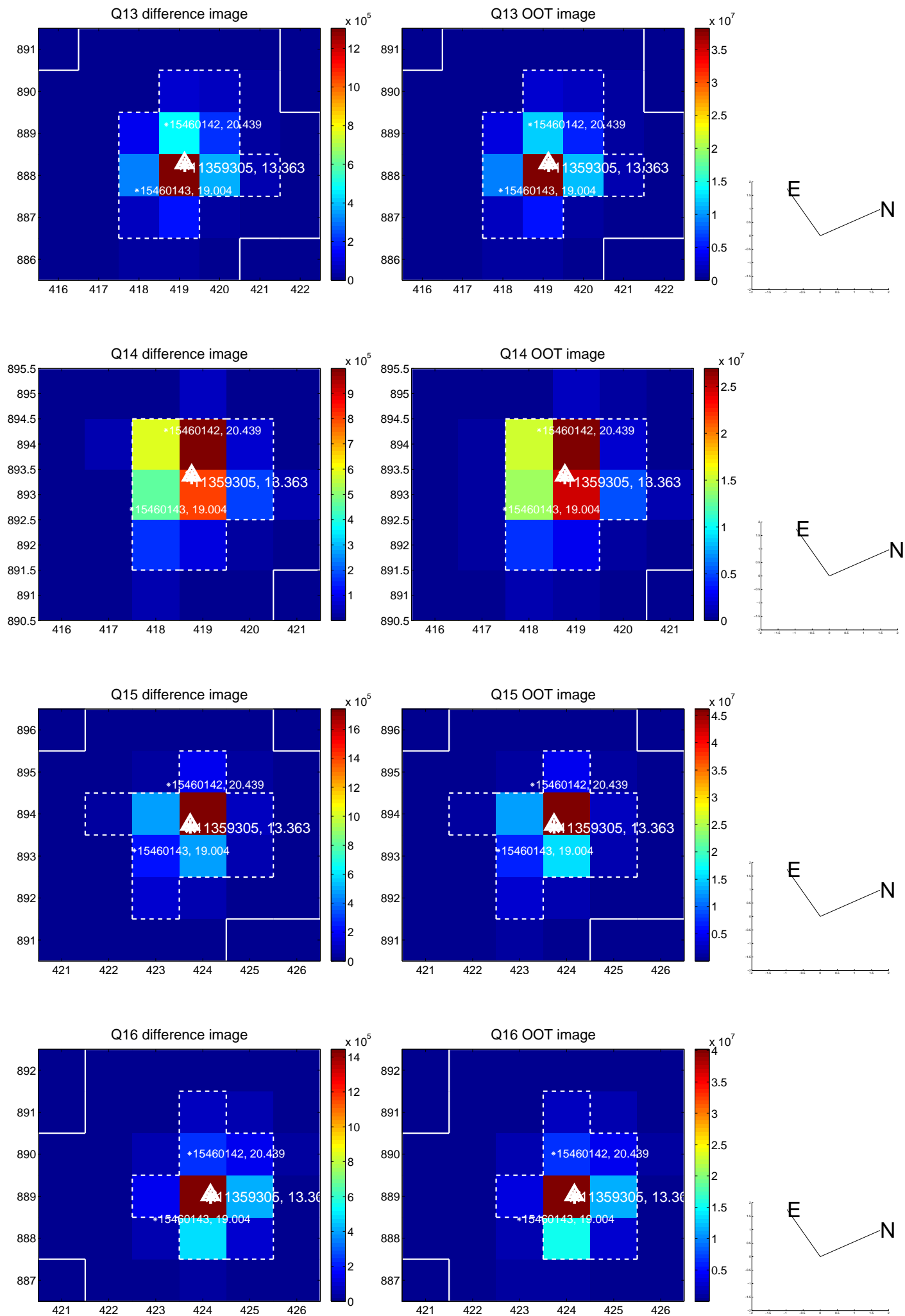
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



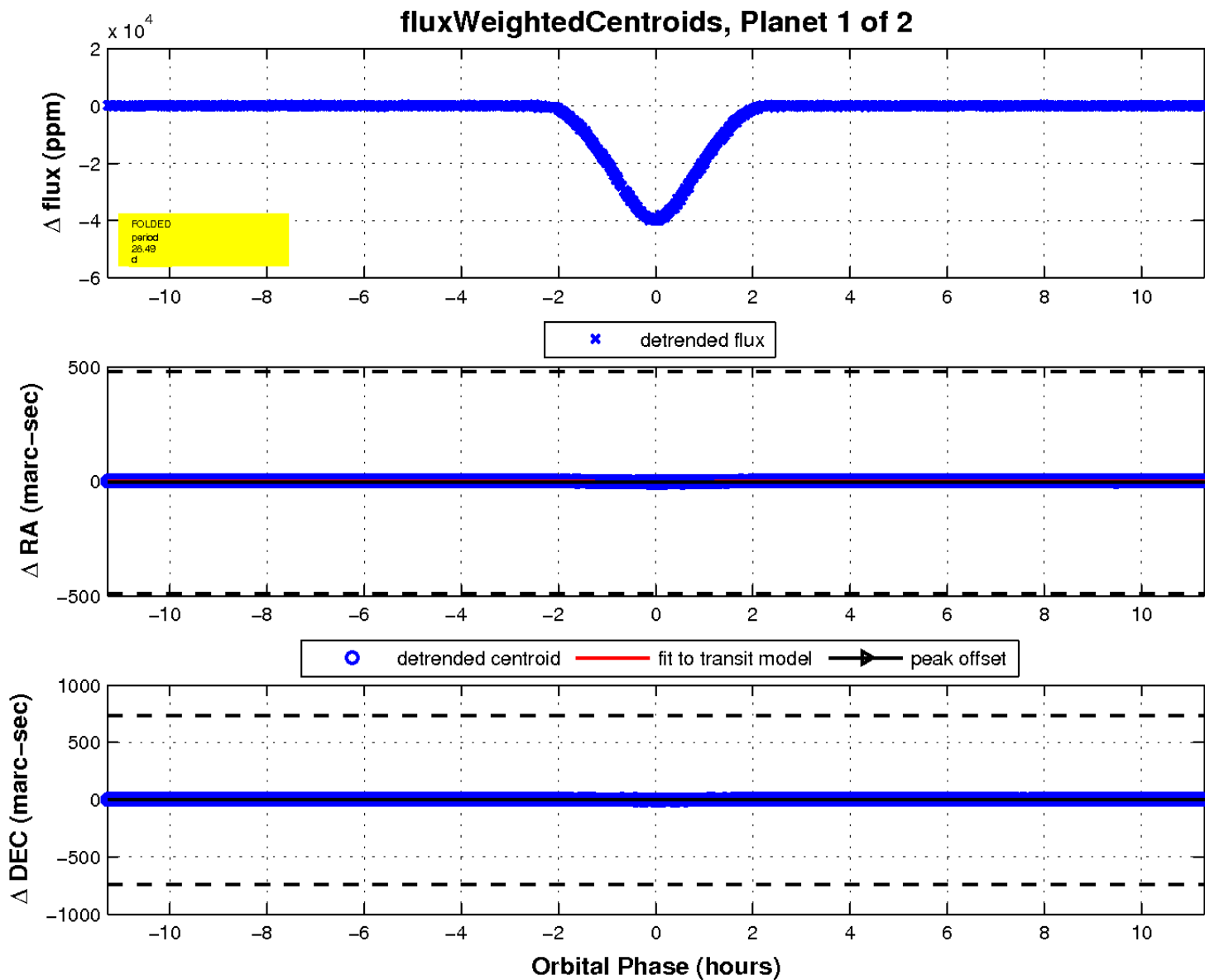
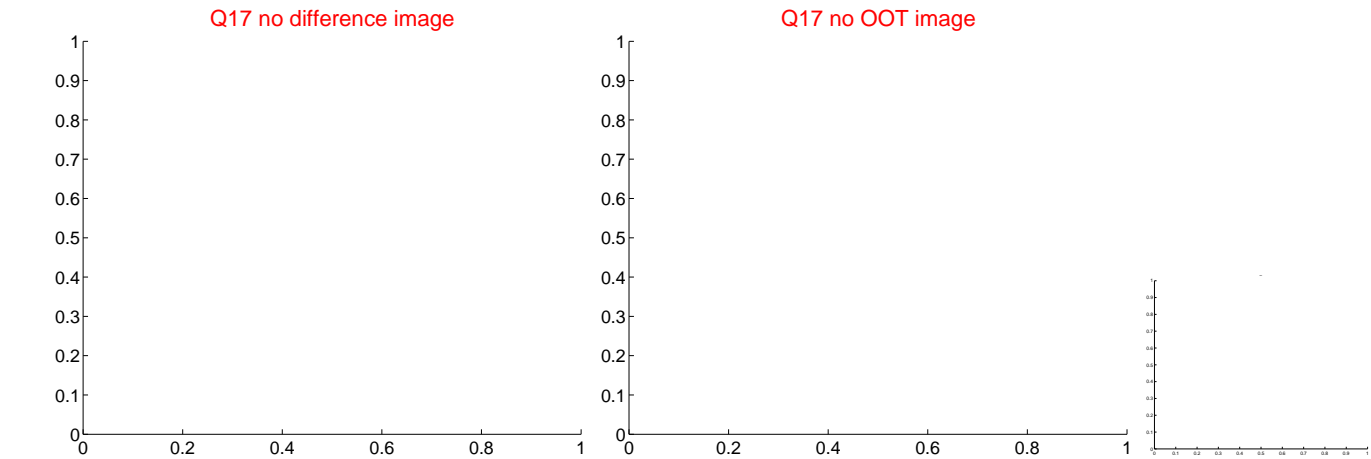
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

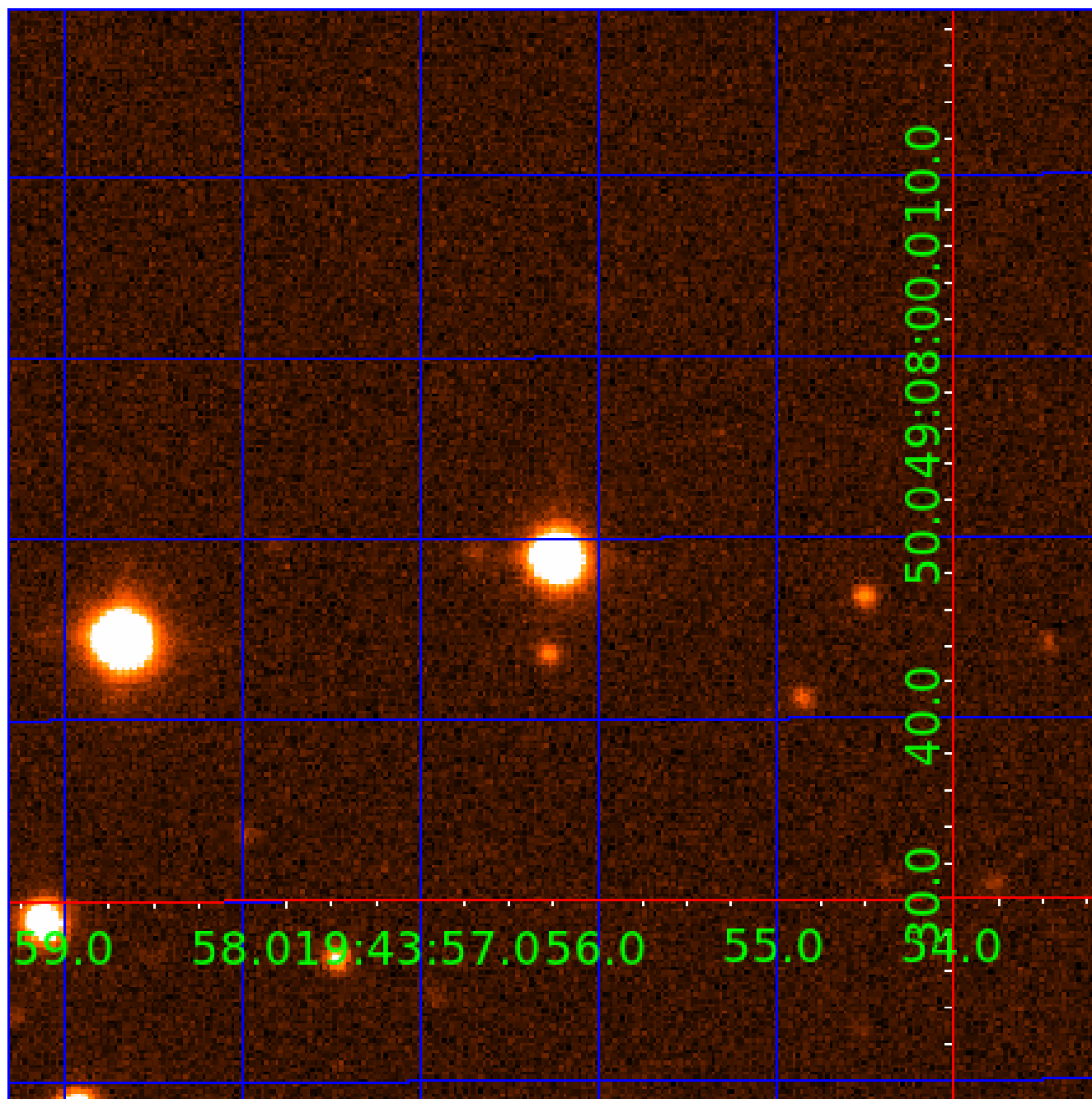


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011359305

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})
011359305-01	OBS	7441.01	28.487063	132.873375	37563.4	3.768	2837.0	1336.6	2.38	6351	79.57	203.42
011359305-02	OBS	No	28.487081	139.064342	12409.1	6.415	1177.0	1073.0	2.38	6351	46.81	203.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011359305-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011359305-02	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 011359305-02

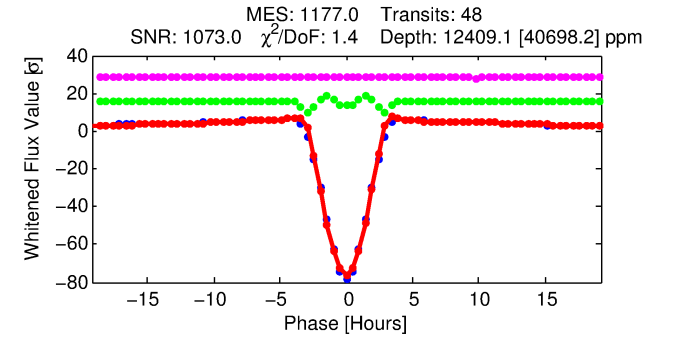
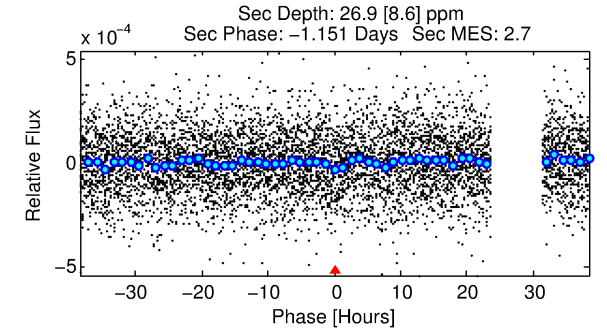
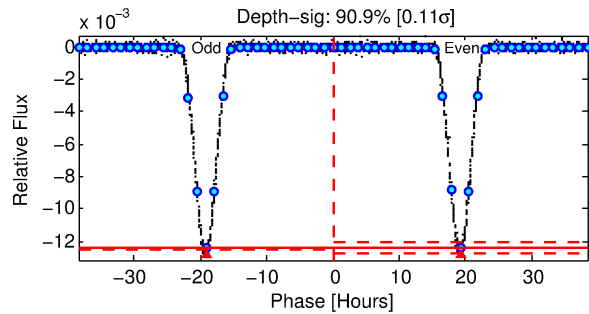
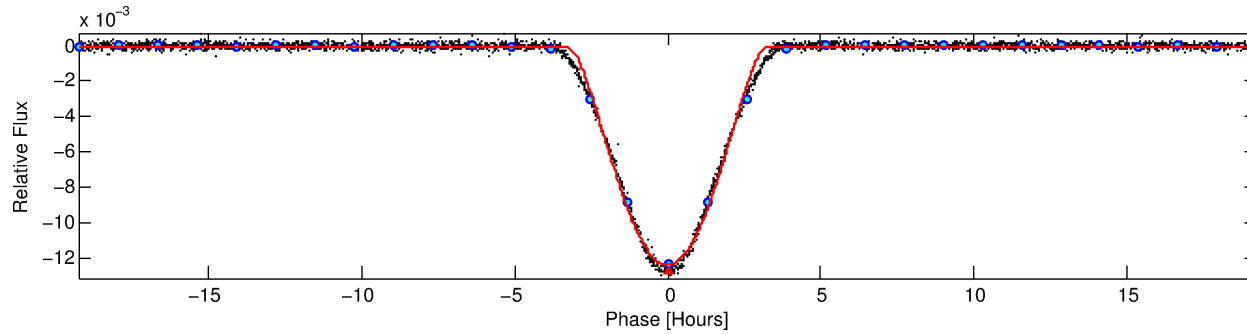
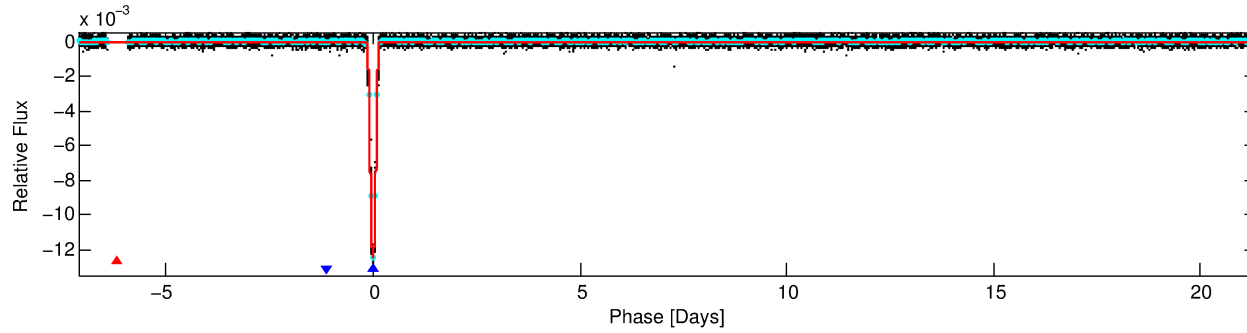
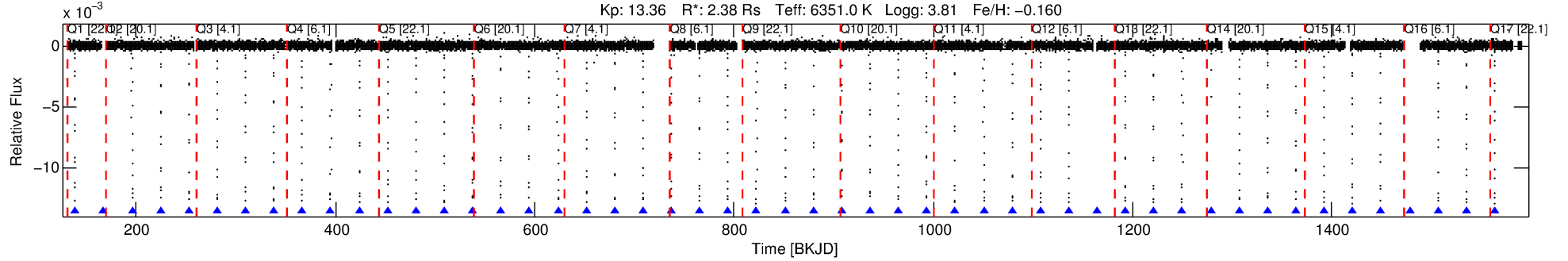
No Significant Match Found

DV One-Page Summary

KIC: 11359305 Candidate: 2 of 2 Period: 28.487 d

KOI: K07441 Corr: No Ephemeris Match

Kp: 13.36 R*: 2.38 Rs Teff: 6351.0 K Logg: 3.81 Fe/H: -0.160



DV Fit Results:

Period = 28.48708 [0.00001] d
Epoch = 139.0643 [0.0002] BKJD
Rp/R* = 0.1799 [0.0105]
a/R* = 21.27 [0.17]
b = 1.00 [0.38]
Seff = 203.42 [102.86]
Teq = 963 [122] K
Rp = 46.81 [16.31] Re
a = 0.2019 [0.0639] AU
Ag = 0.28 [0.17] [-4.38σ]
Teffp = 1079 [96] K [0.75σ]

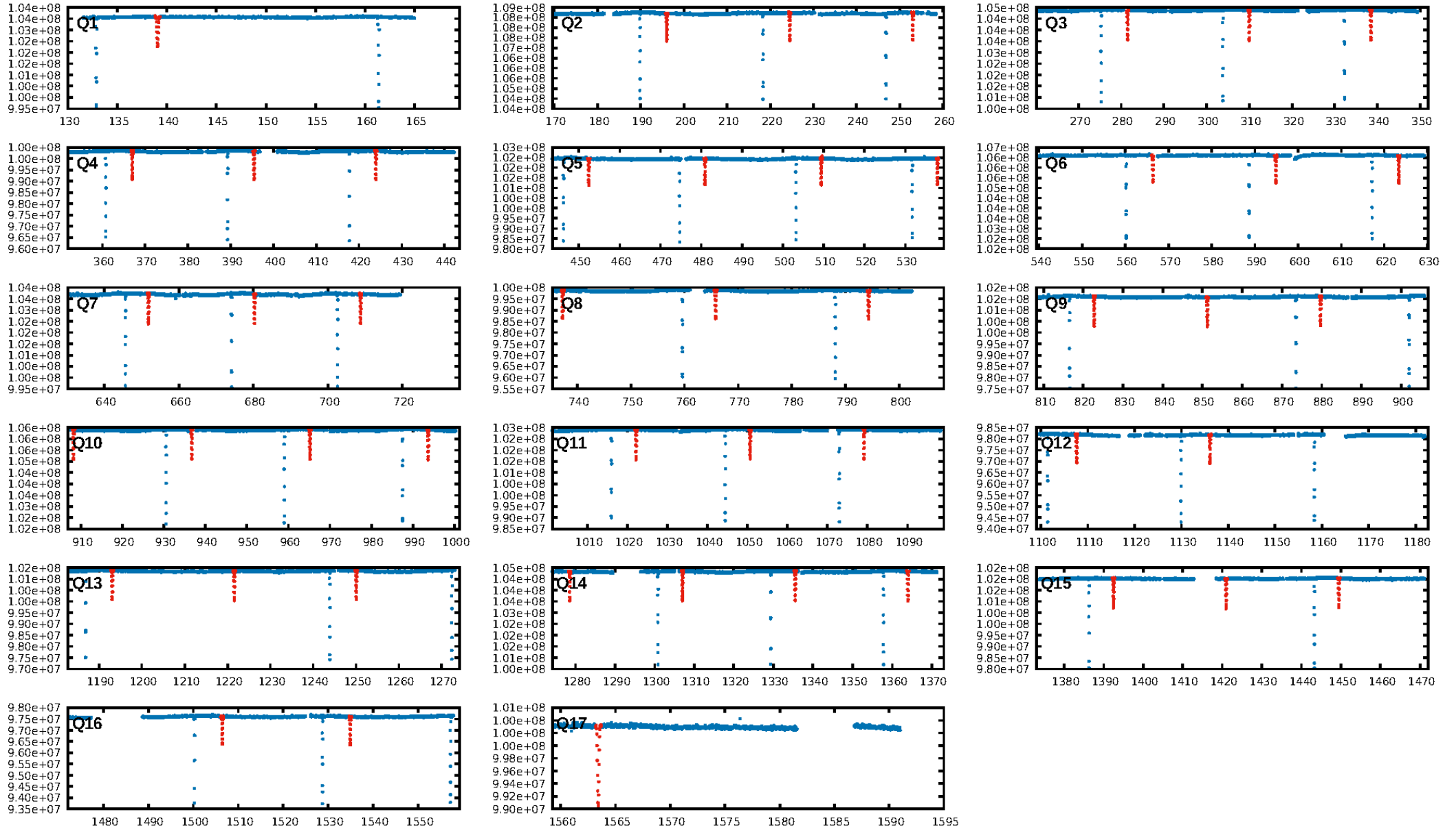
DV Diagnostic Results:

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 [46/46]
GhostDiagnostic-chr: 4.137
Centroid-sig: 0.0%
Centroid-so: 0.208 arcsec [21.64σ]
OotOffset-rm: 0.225 arcsec [3.29σ]
KicOffset-rm: 0.198 arcsec [2.92σ]
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]

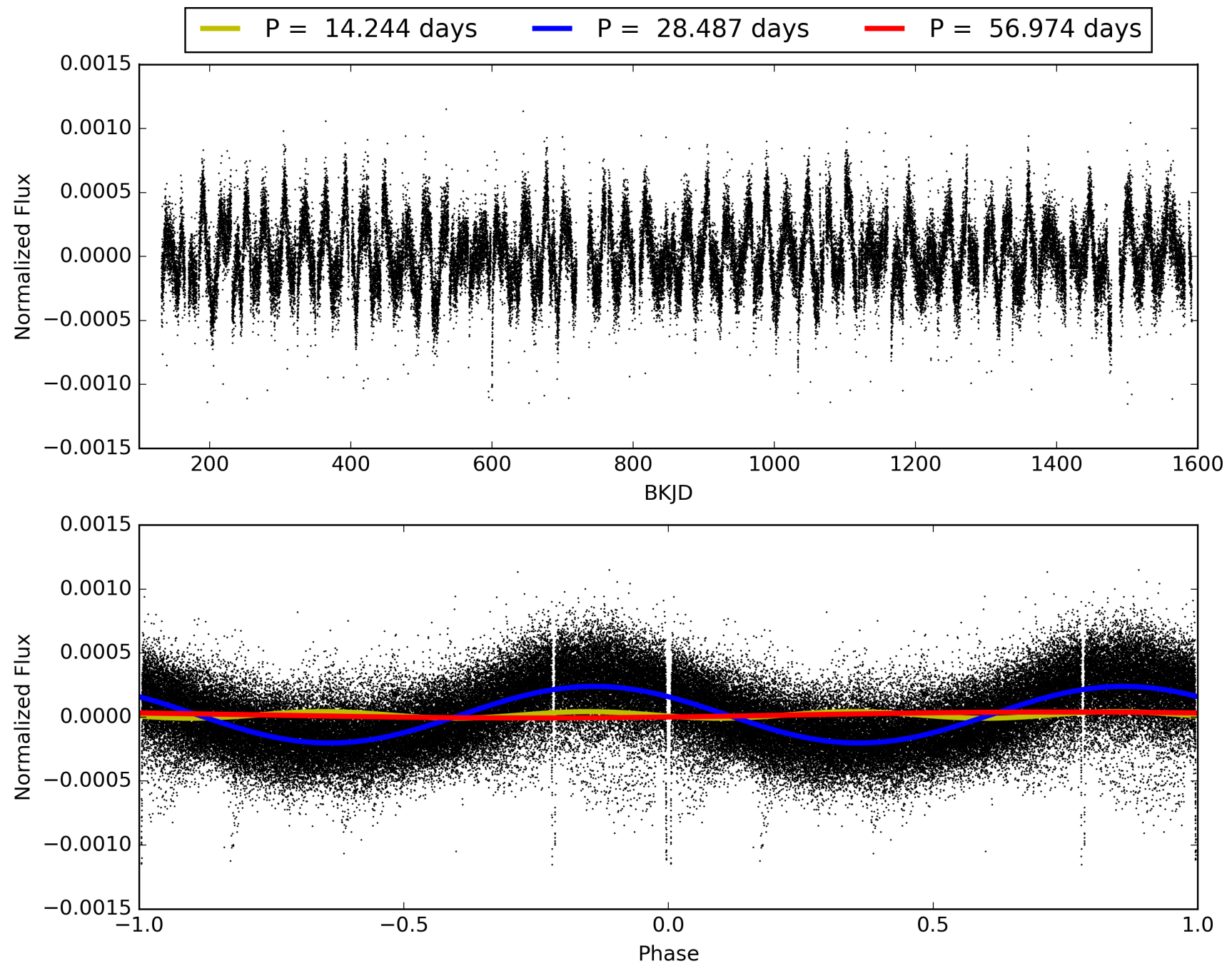
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:28:23 Z

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

TCE 011359305-02, PDC Light Curves

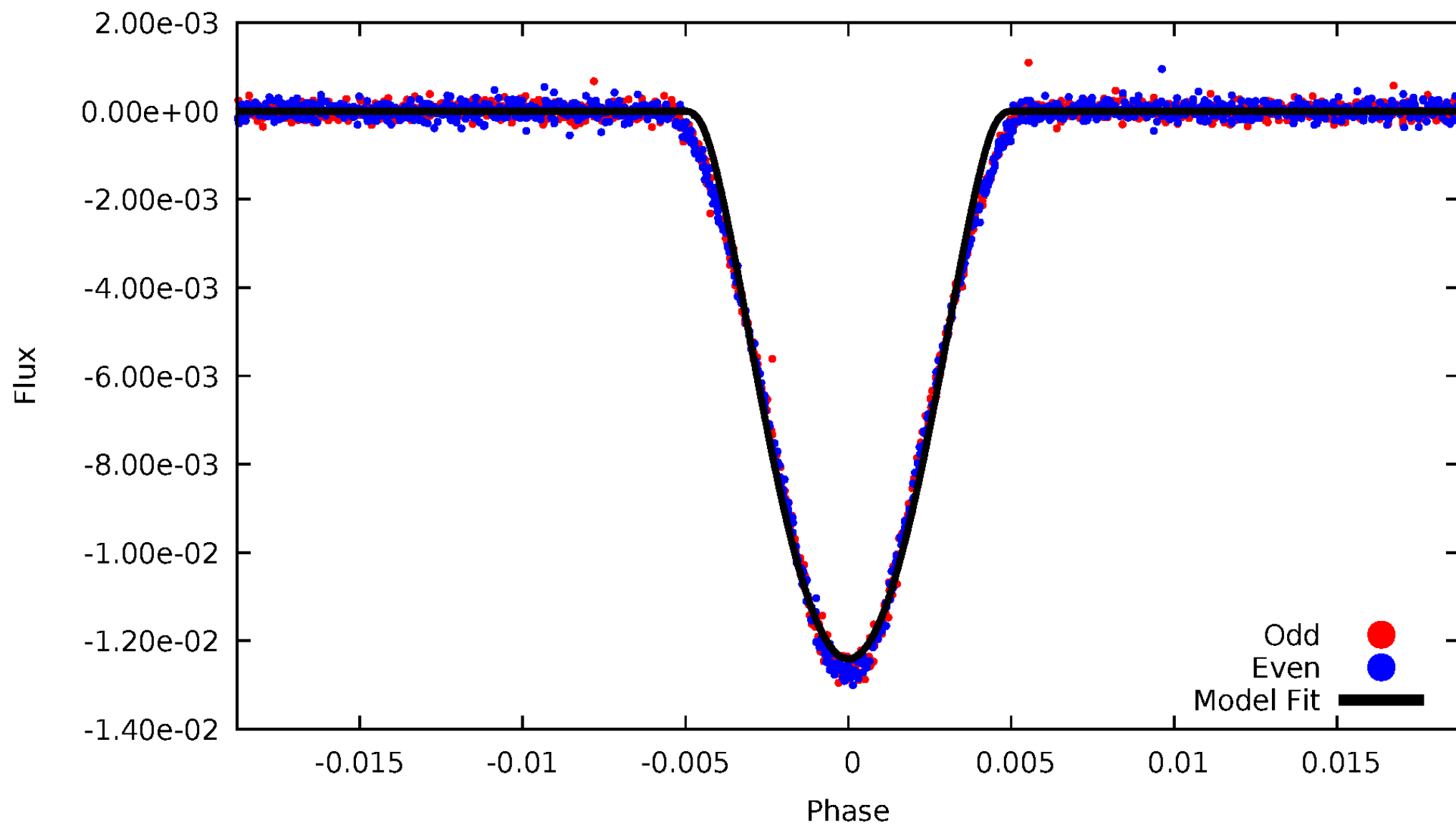


TCE 011359305-02



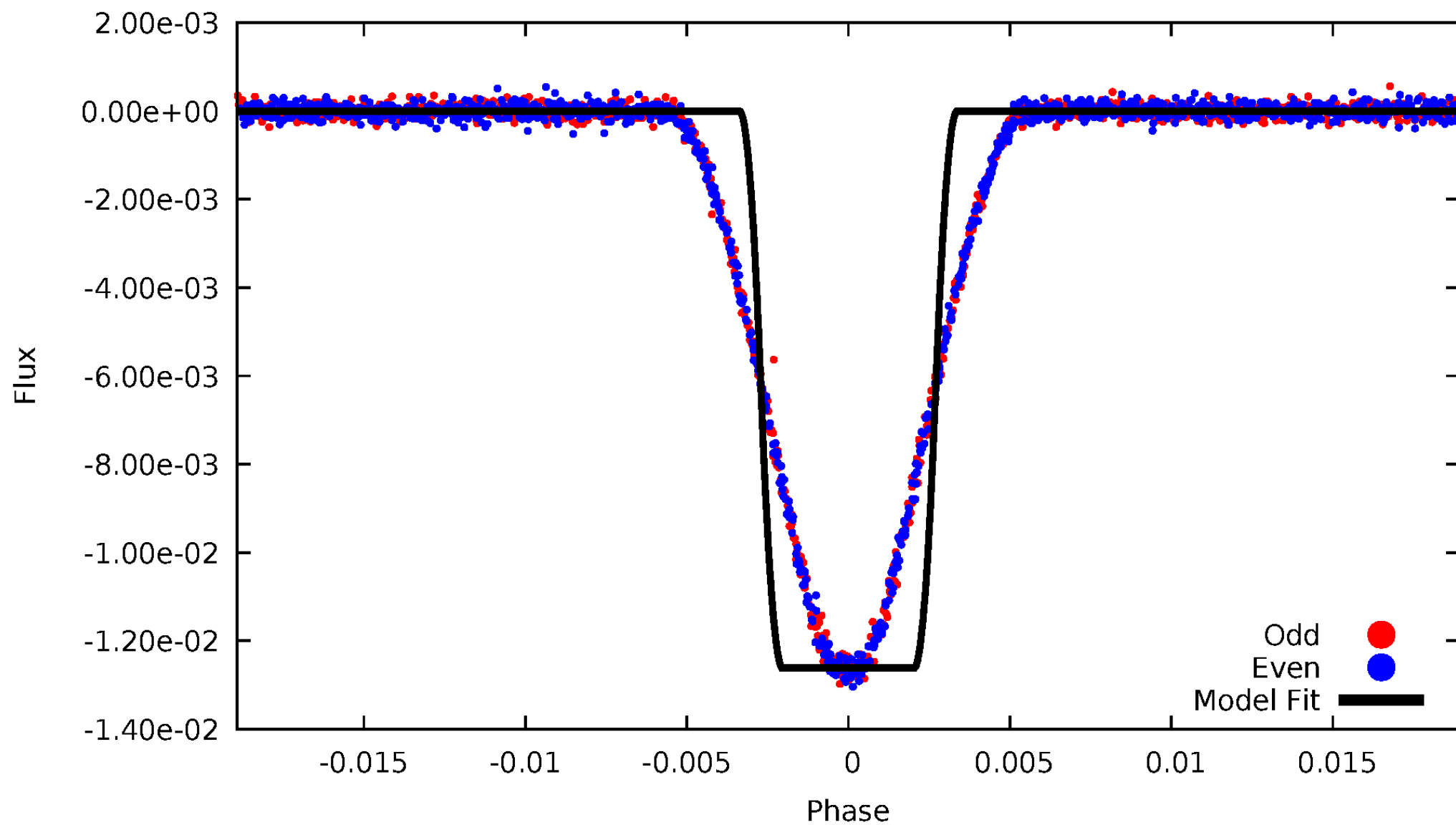
DV Odd/Even

TCE 011359305-02



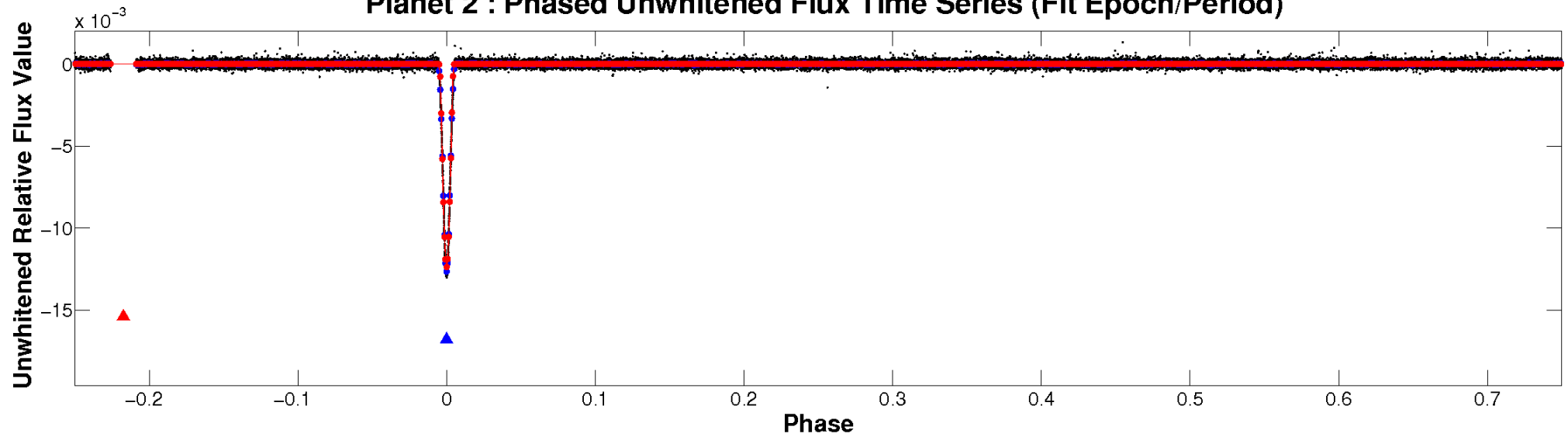
ALT Odd/Even

TCE 011359305-02

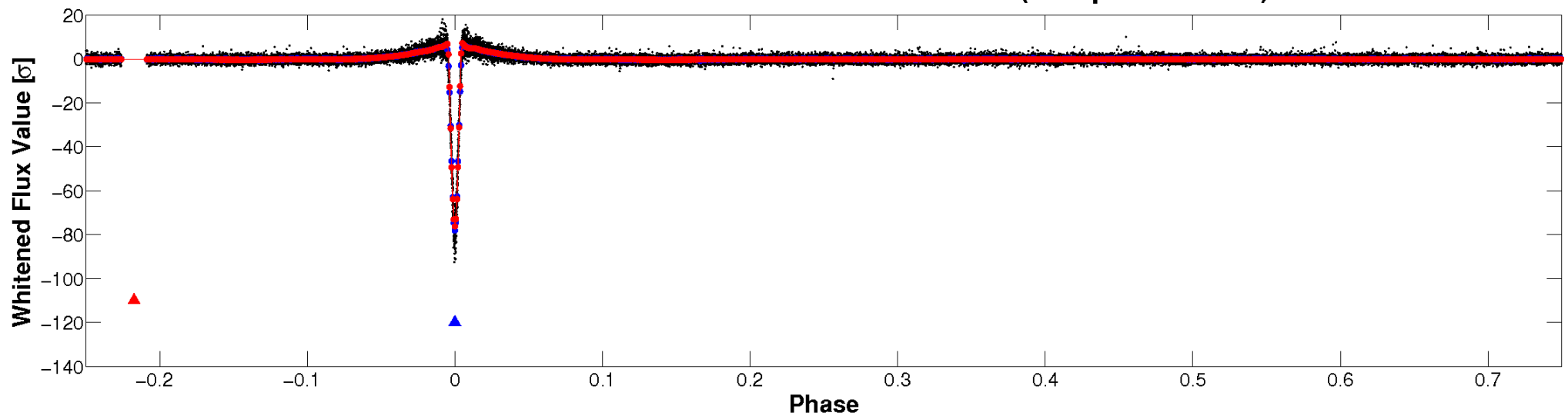


Non-Whitened Vs. Whitened Light Curve

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

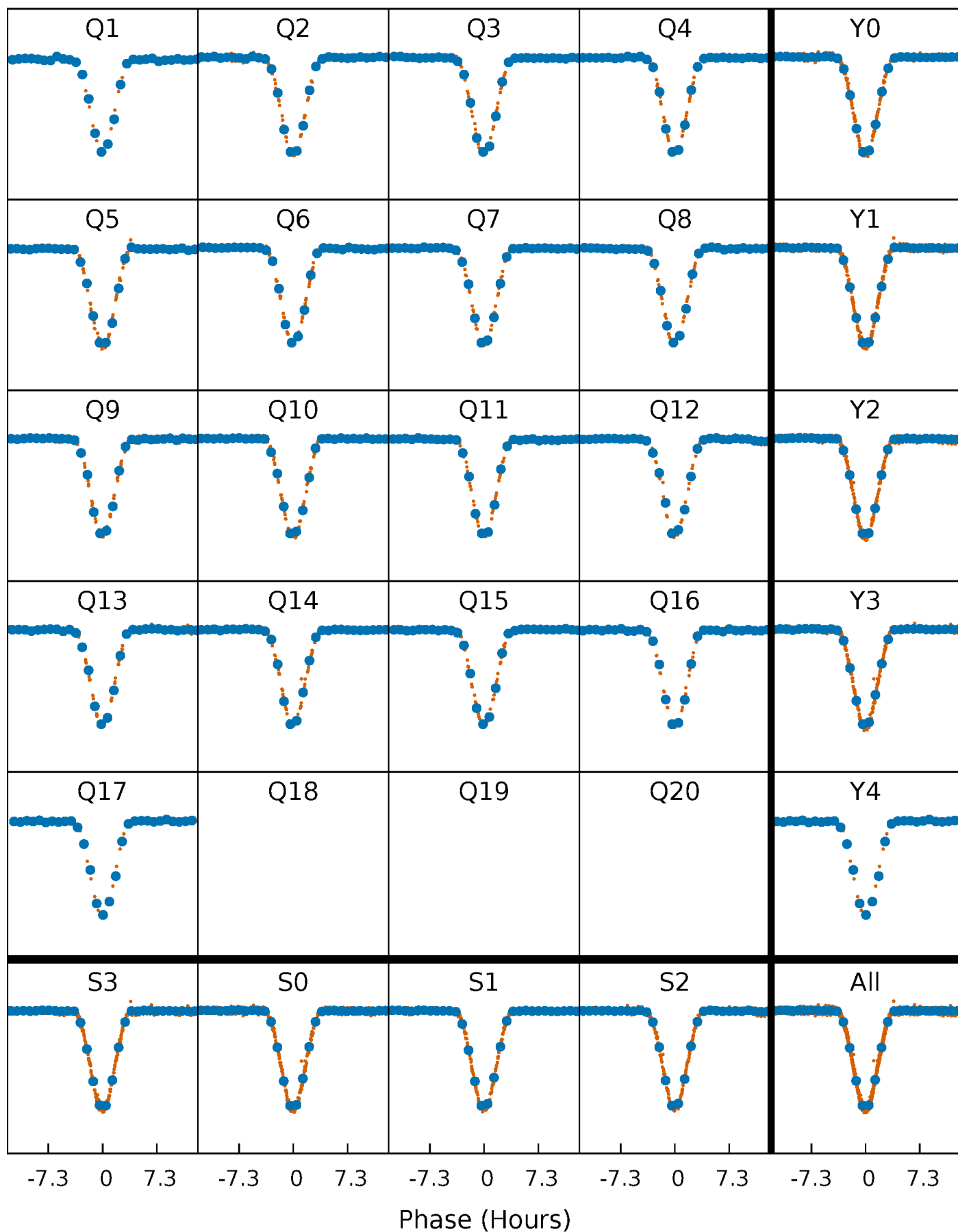


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



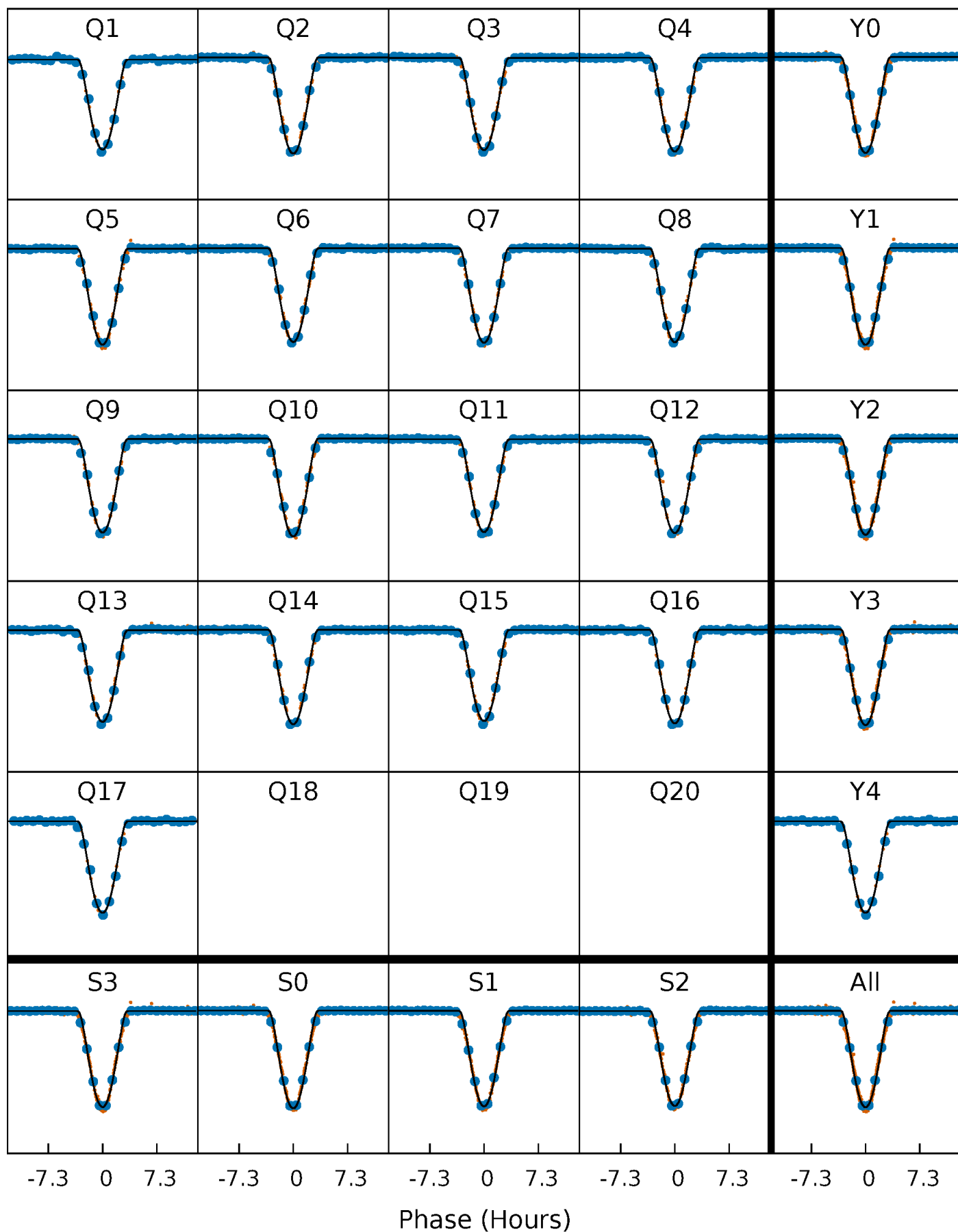
PDC Quarter-Phased Transit Curves

TCE 011359305-02 P= 28.487081 Days $T_0=139.064342$ (BKJD)



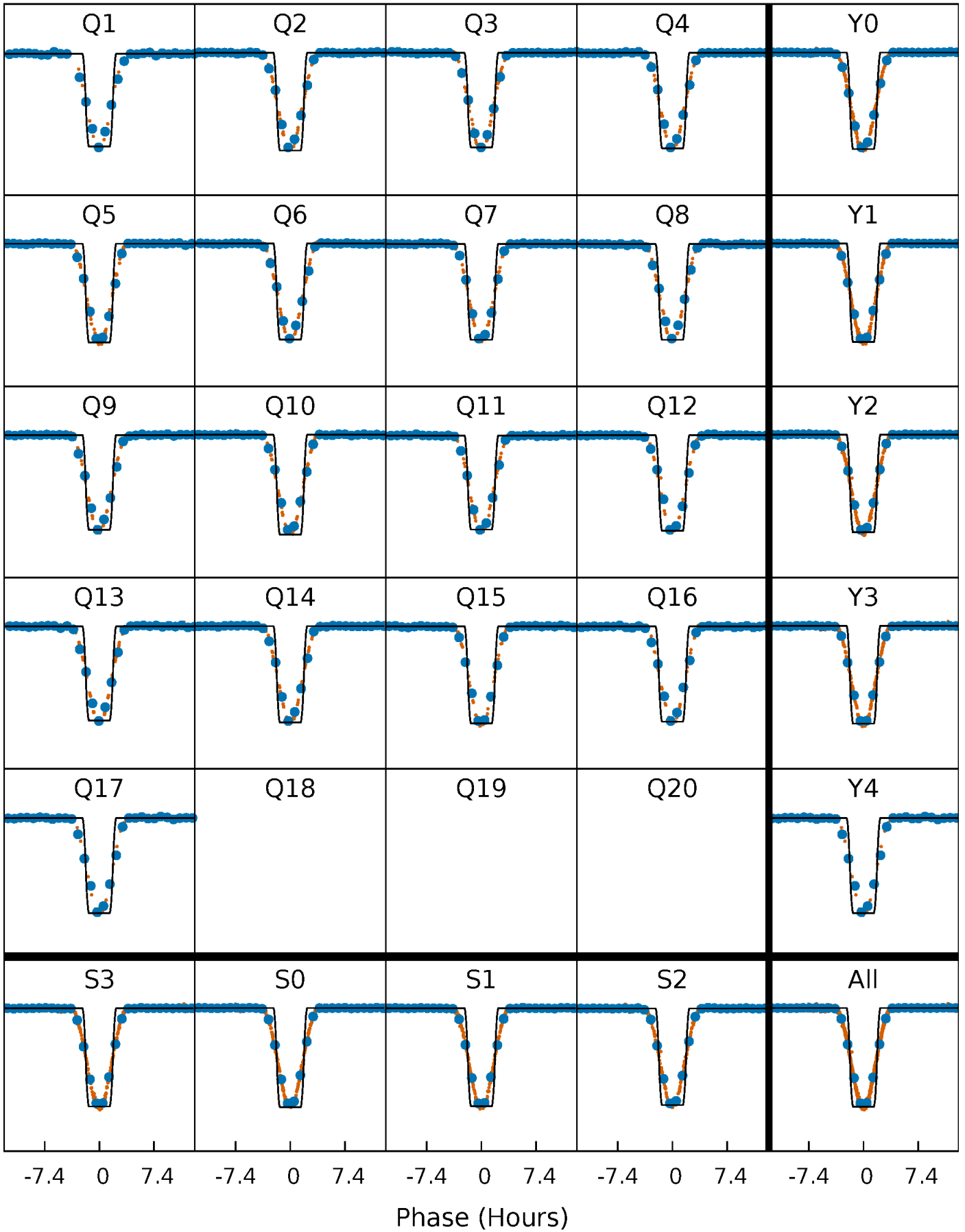
DV Quarter-Phased Transit Curves

TCE 011359305-02 P= 28.487081 Days $T_0=139.064342$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

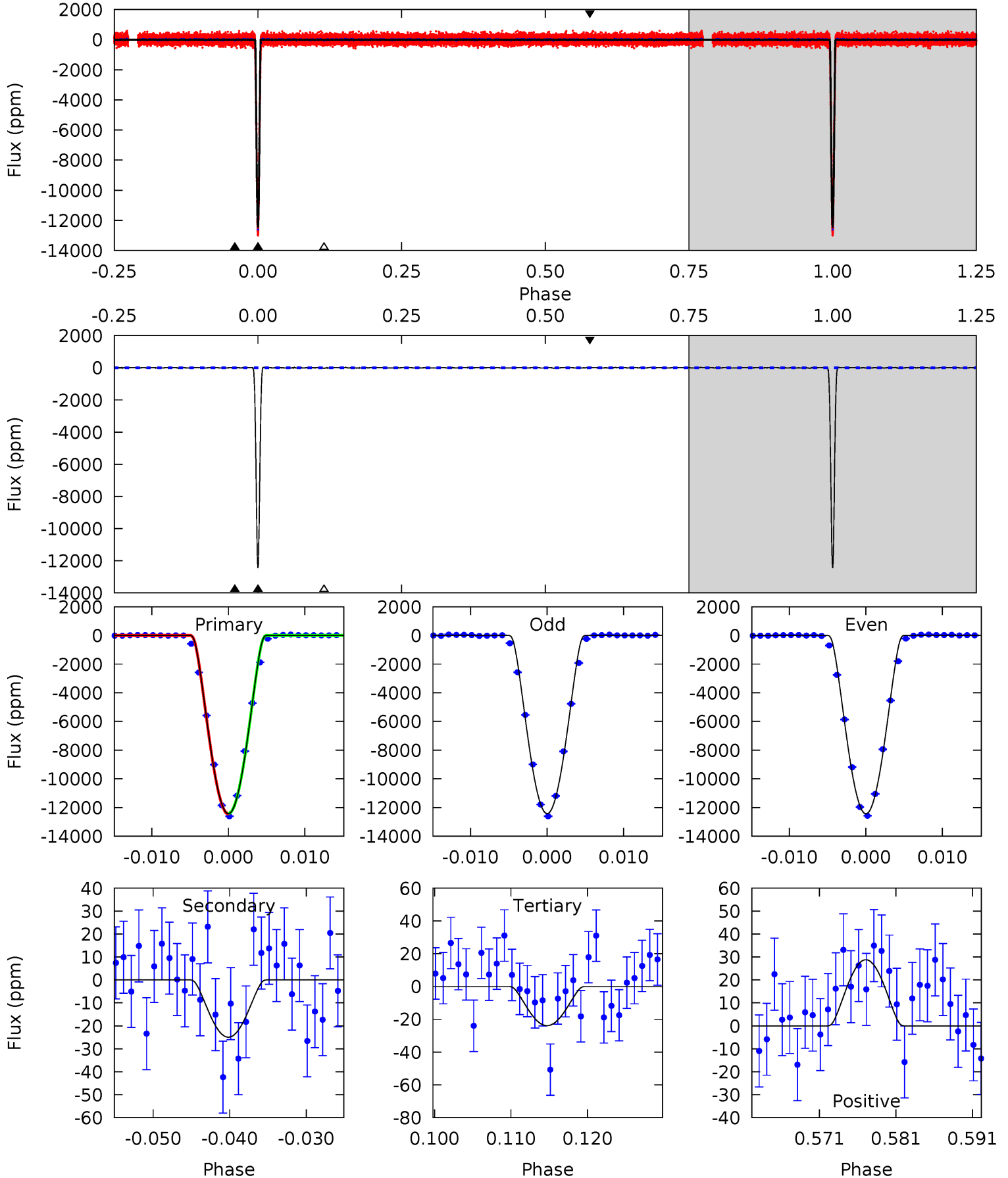
TCE 011359305-02 P= 28.487029 Days $T_0=139.065603$ (BKJD)



DV Model-Shift Uniqueness Test

011359305-02, P = 28.487081 Days, E = 110.577261 Days

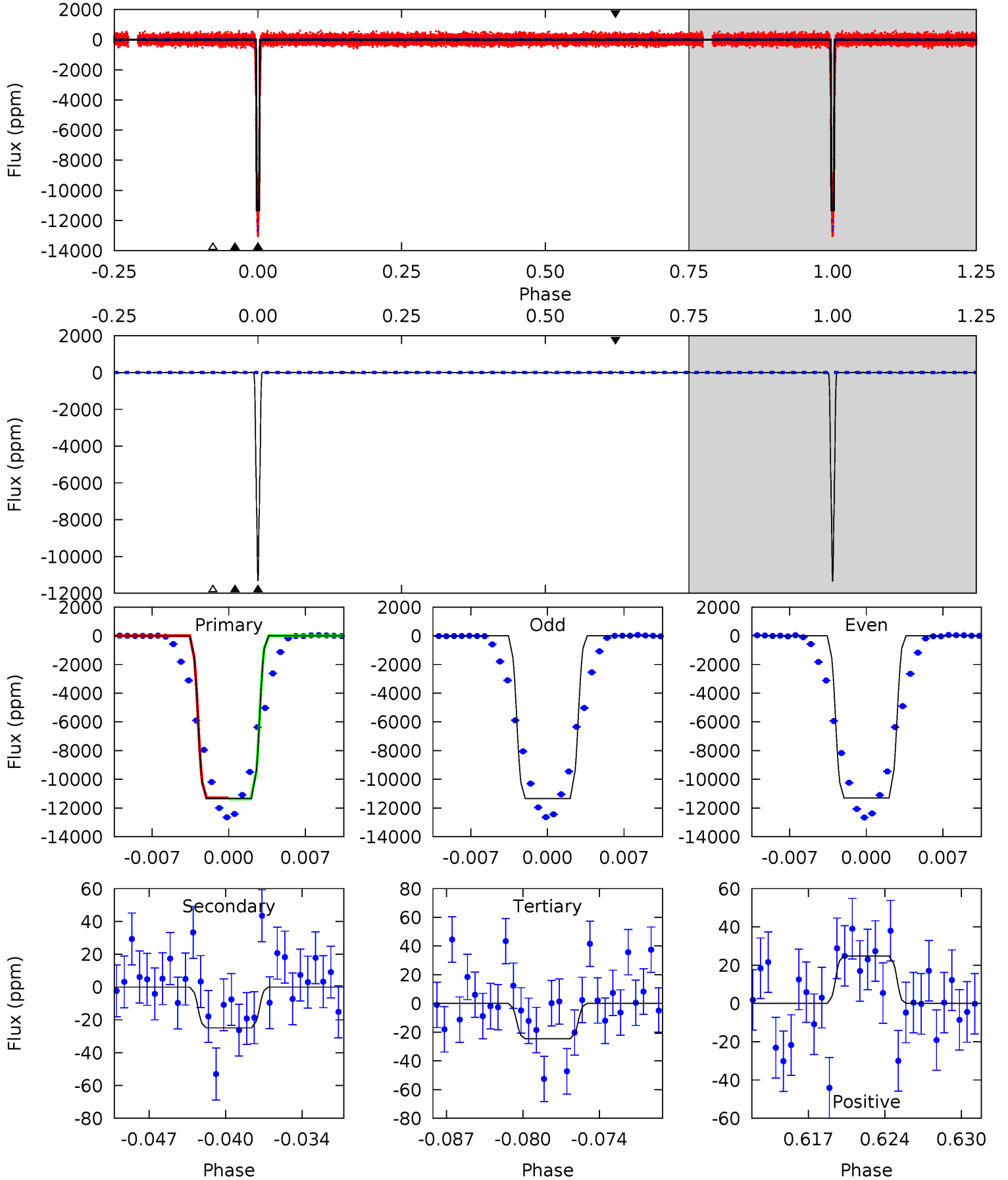
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2306	4.63	4.43	5.34	5.03	2.57	1.72	2302	2301	0.20	-0.71	1.07	1.00	0.00	2.80



Alt Model-Shift Uniqueness Test

011359305-02, $P = 28.487029$ Days, $E = 110.578574$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1545	3.40	3.36	3.39	5.10	2.71	1.15	1542	1542	0.04	0.01	2.66	1.00	0.00	4.88



Stellar Parameters For KIC 011359305

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6351^{+154}_{-173}	$3.814^{+0.285}_{-0.095}$	$-0.160^{+0.300}_{-0.250}$	$2.385^{+0.441}_{-0.819}$	$1.352^{+0.252}_{-0.252}$	$0.140^{+0.255}_{-0.051}$
	+2%/-3%	+7%/-2%	+188%/-156%	+18%/-34%	+19%/-19%	+182%/-36%
Source	PHO1	FLK73	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 011359305-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 5	$45.50^{+7.02}_{-8.15}$	1316^{+85}_{-105}	-1592^{+3412}_{-300}	$0.281^{+0.123}_{-0.083}$
Alt.	-25 ± 7	$28.29^{+4.98}_{-5.52}$	1315^{+84}_{-117}	2129^{+137}_{-181}	$0.708^{+0.421}_{-0.251}$

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

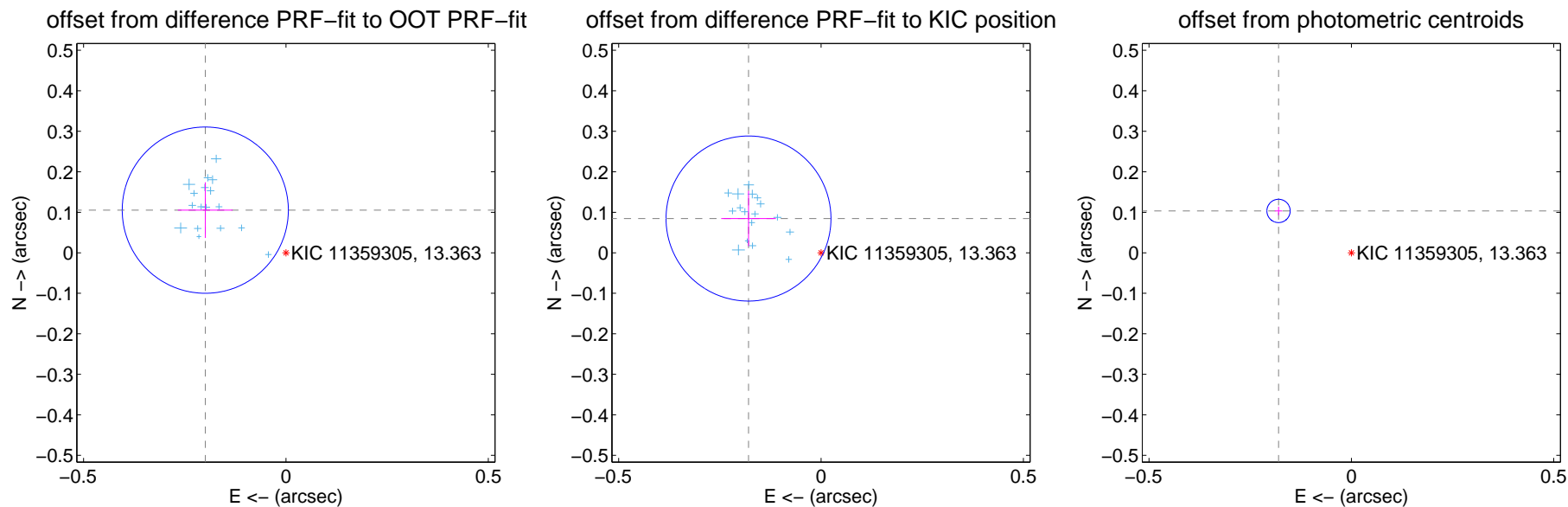
DV Centroid Data

Supplemental centroid analysis for 011359305-02. Kepler magnitude: 13.36. Transit SNR 1072.99

There are 17 quarters with good PRF difference image offsets

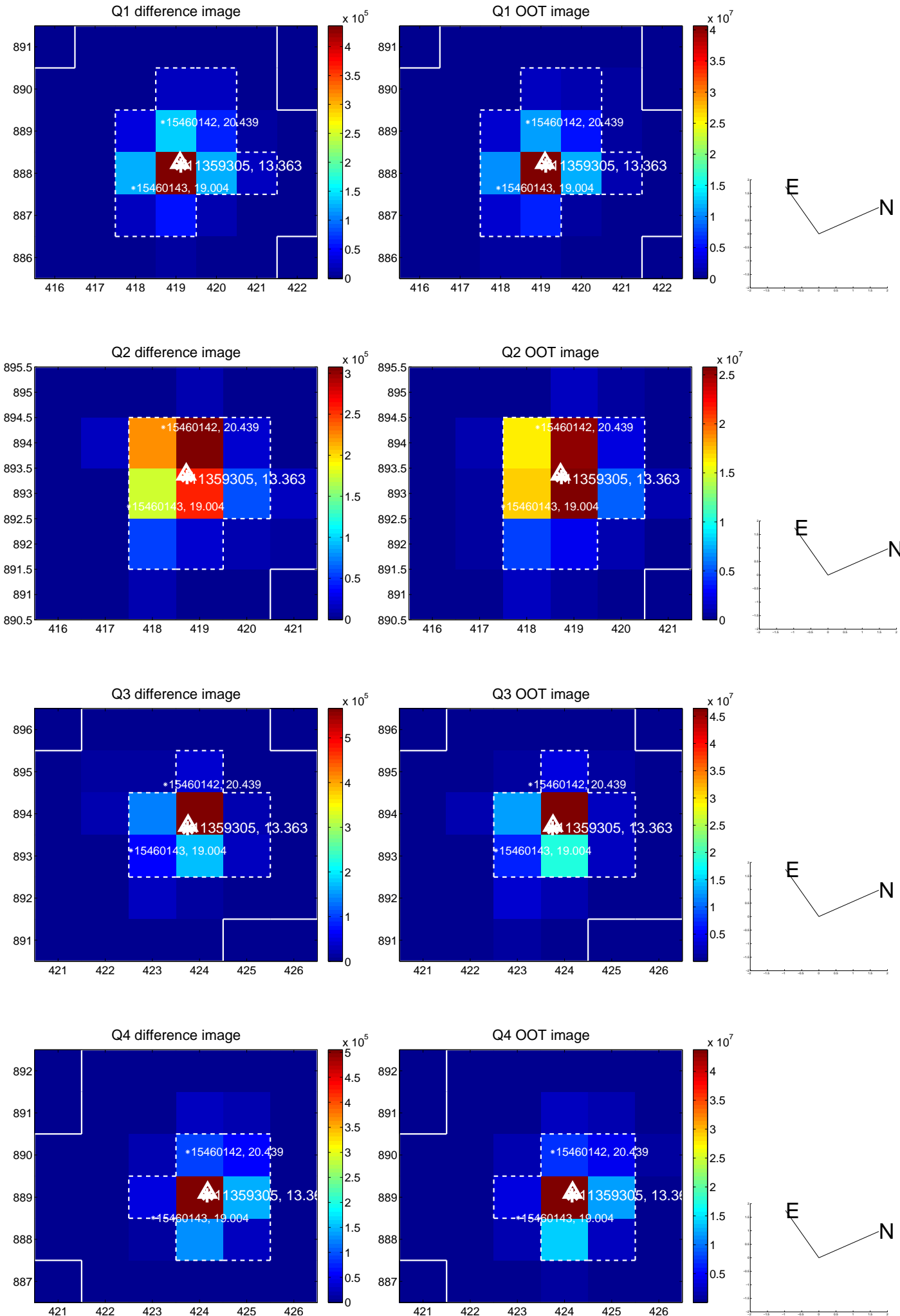
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.225 \pm 0.068	3.29	0.199 \pm 0.068	0.105 \pm 0.069
PRF-fit source offset from KIC position	0.198 \pm 0.068	2.92	0.179 \pm 0.067	0.085 \pm 0.068
photometric centroid source offset	0.21 \pm 0.01	21.64	0.18 \pm 0.01	0.10 \pm 0.01

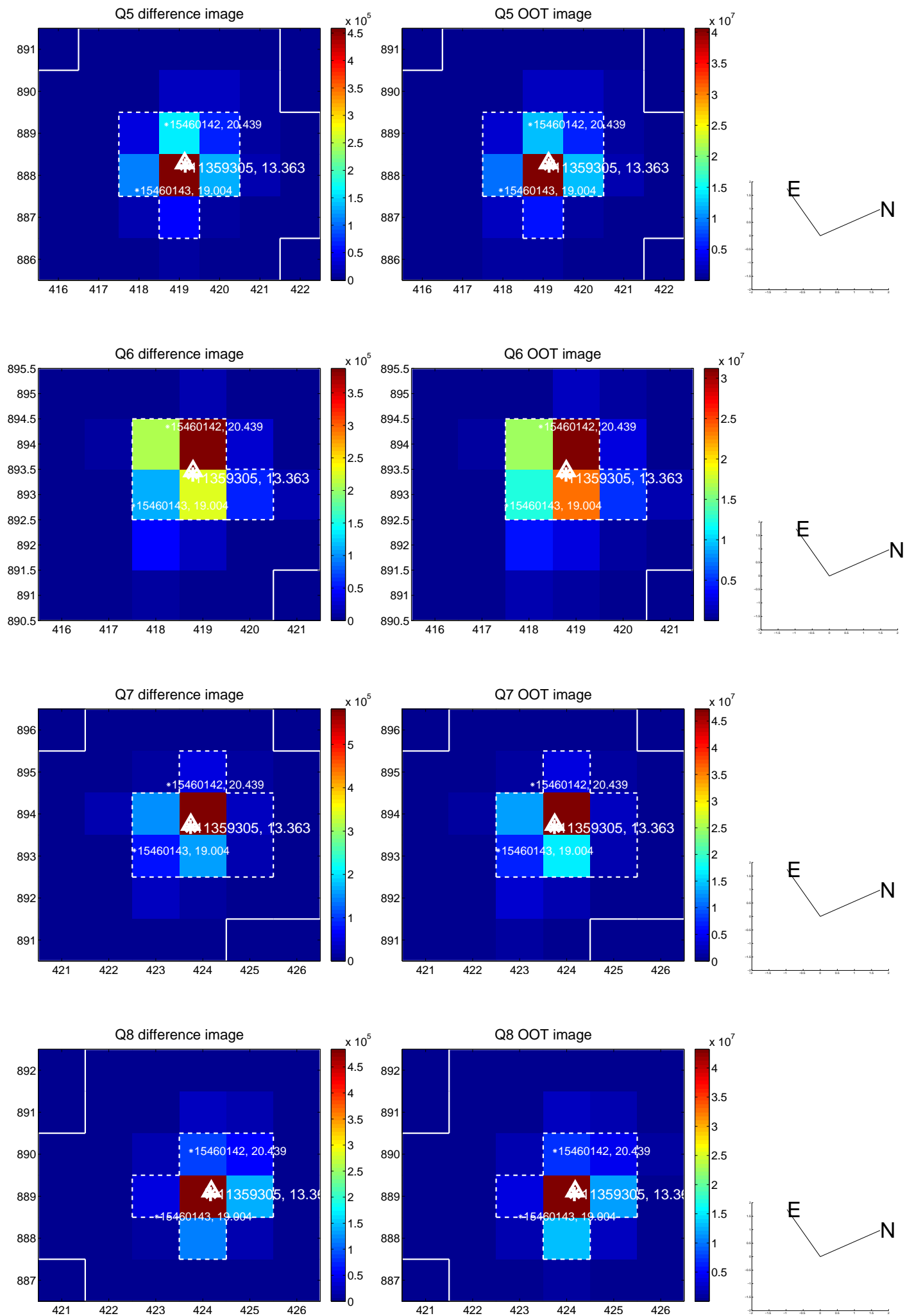


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

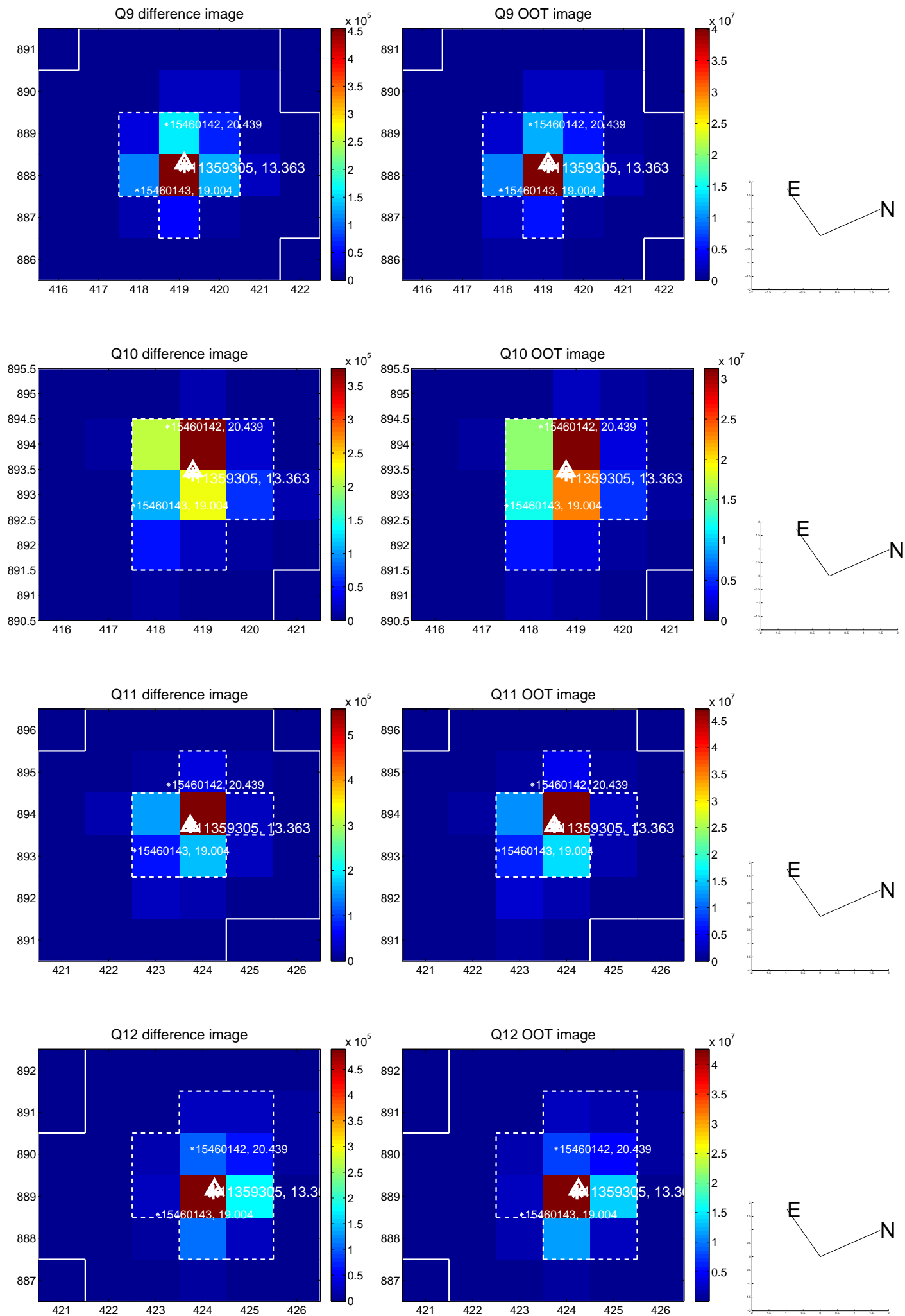
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



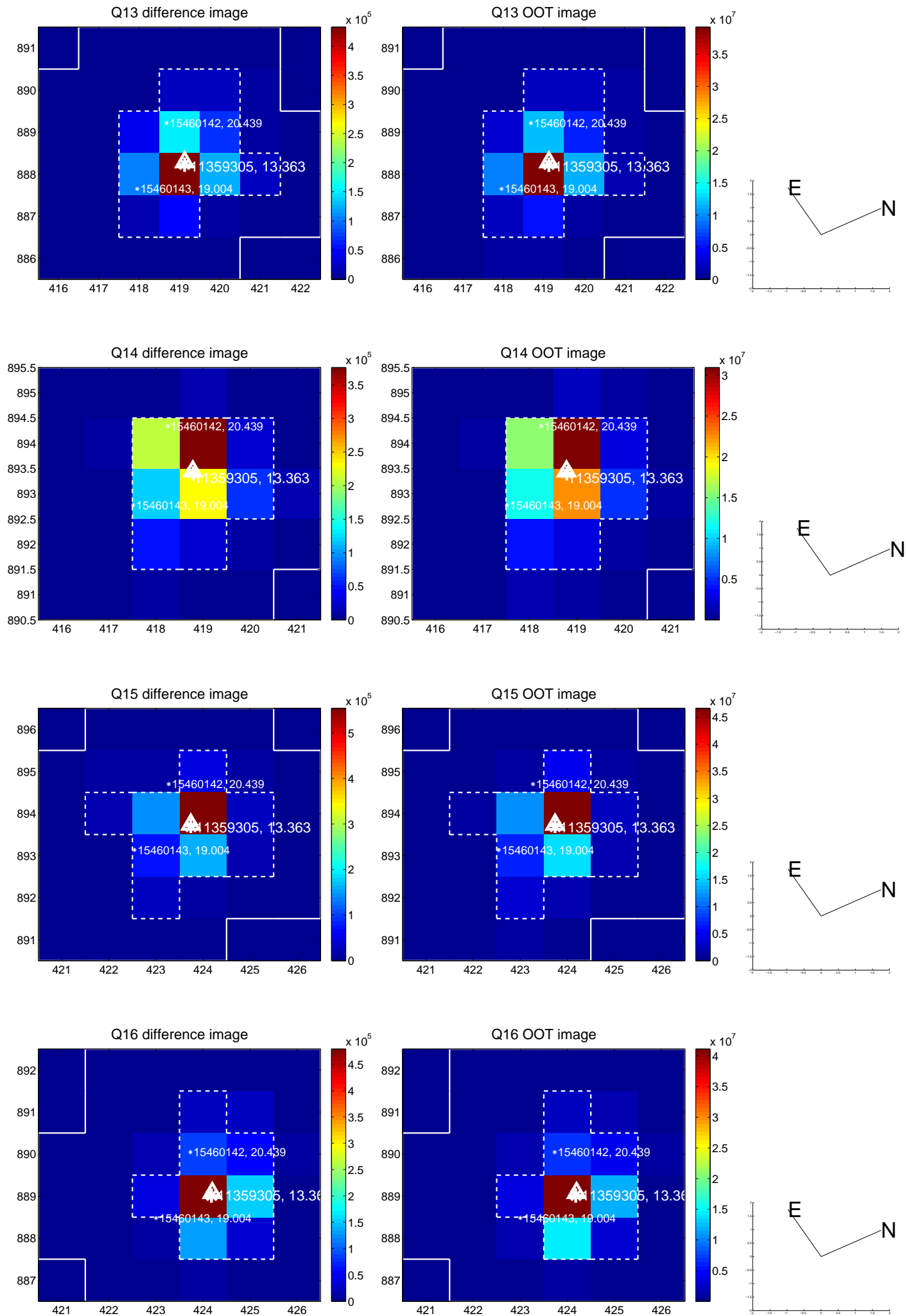
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



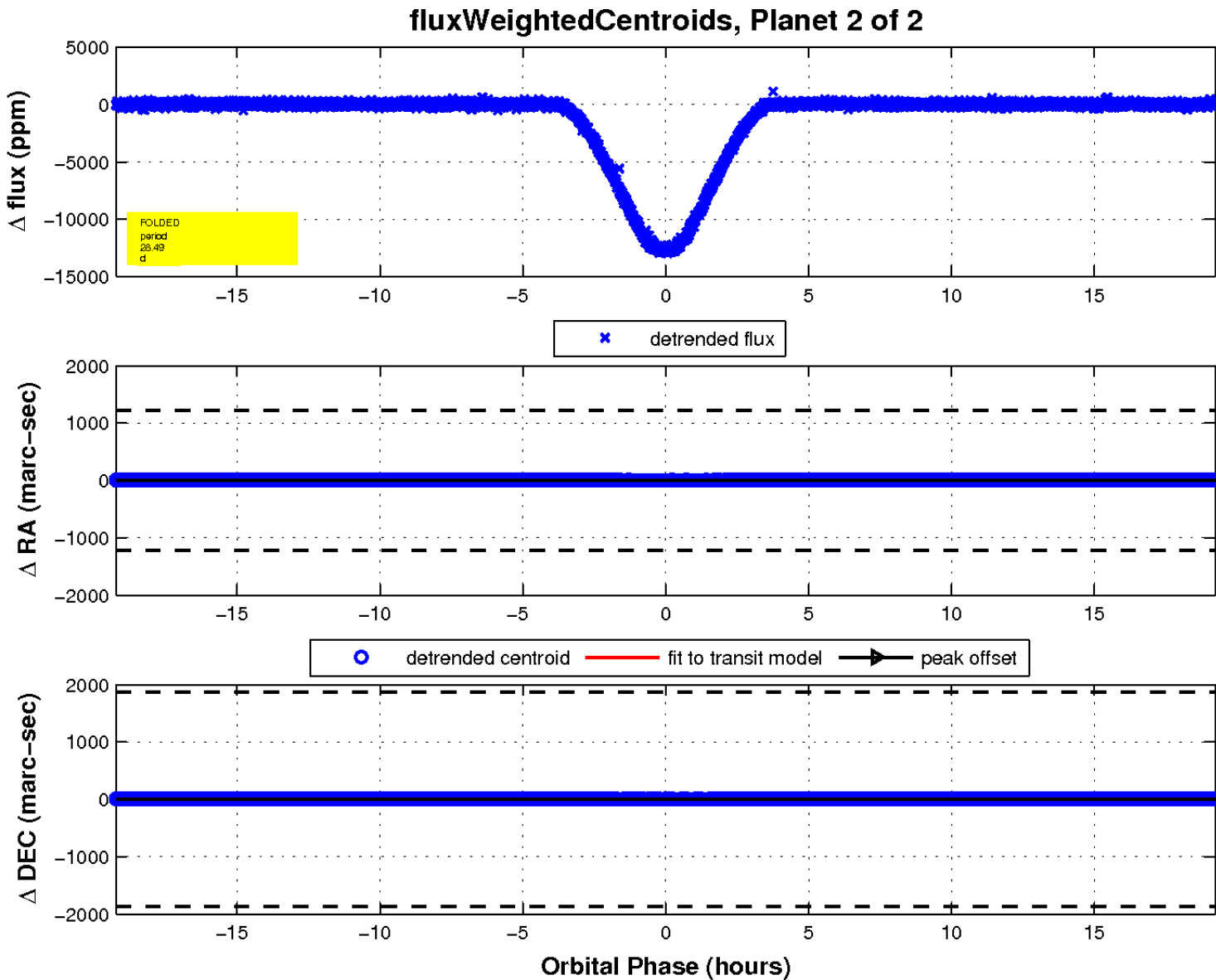
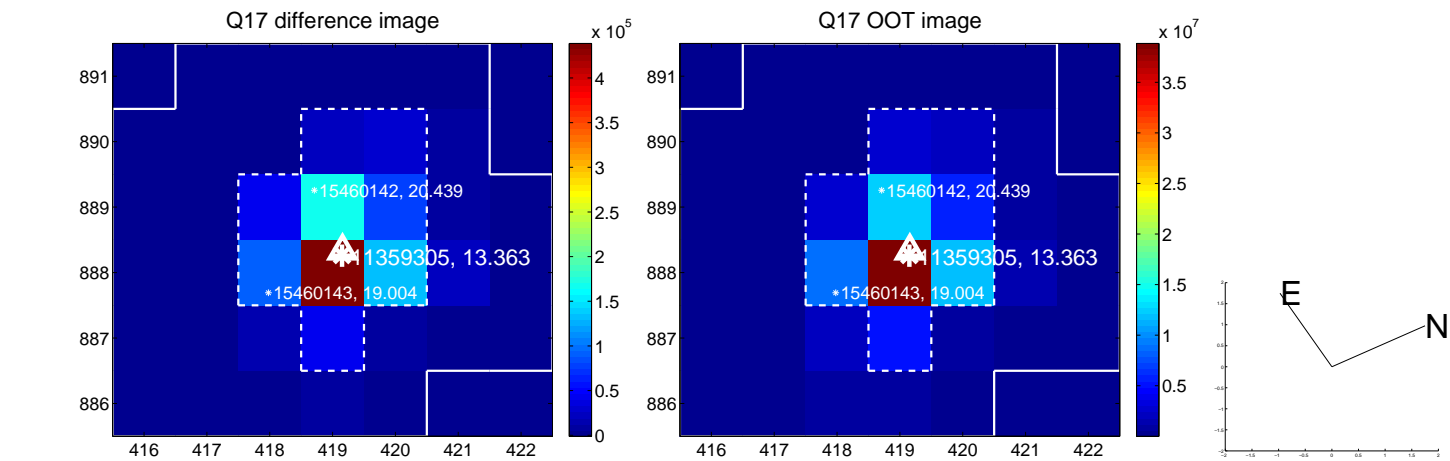
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

