

KIC 003427776

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})
003427776-01	OBS	6332.01	4.016683	134.240490	37644.2	2.293	1307.7	1127.1	0.79	5448	21.34	252.68
003427776-02	OBS	No	4.016688	132.231251	12304.6	2.231	442.3	382.2	0.79	5448	15.26	252.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003427776-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003427776-02	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.

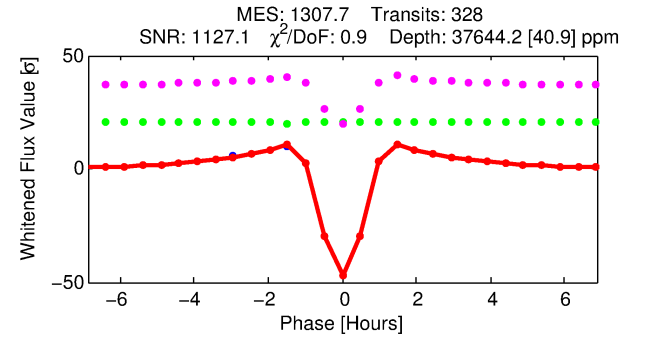
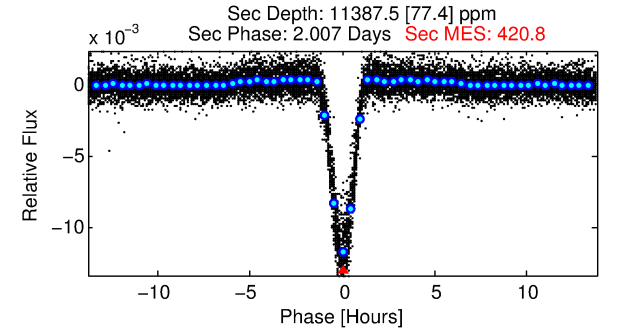
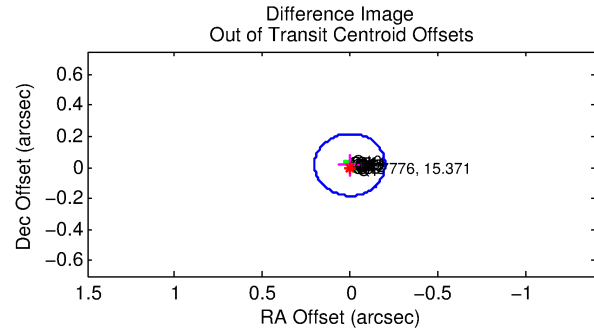
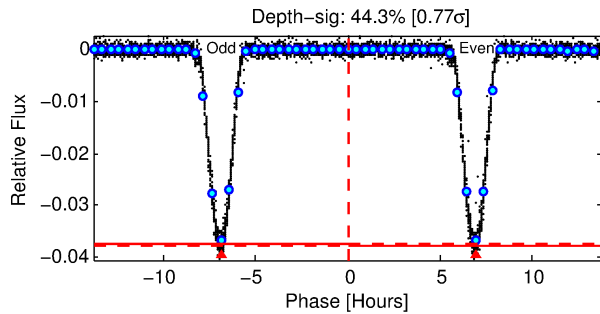
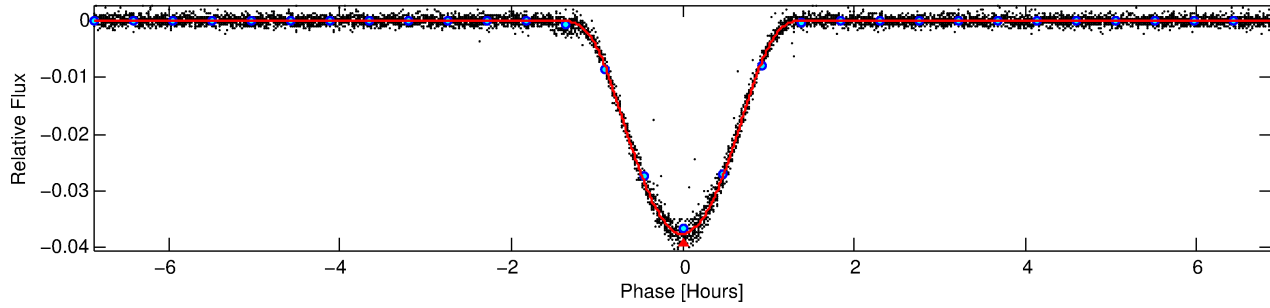
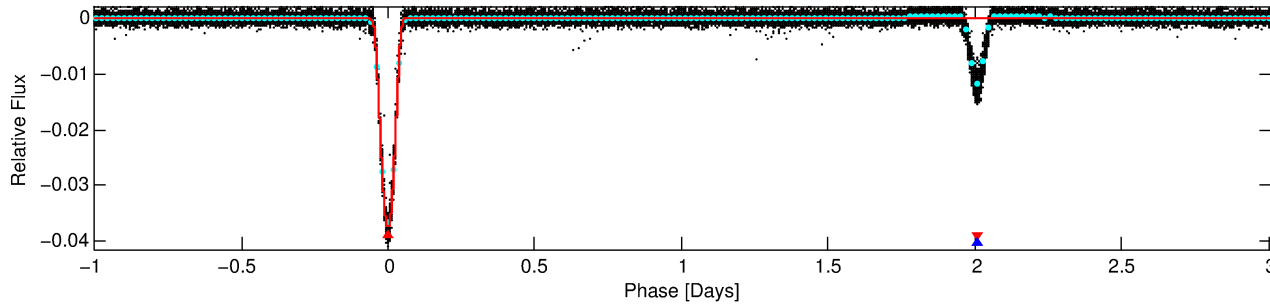
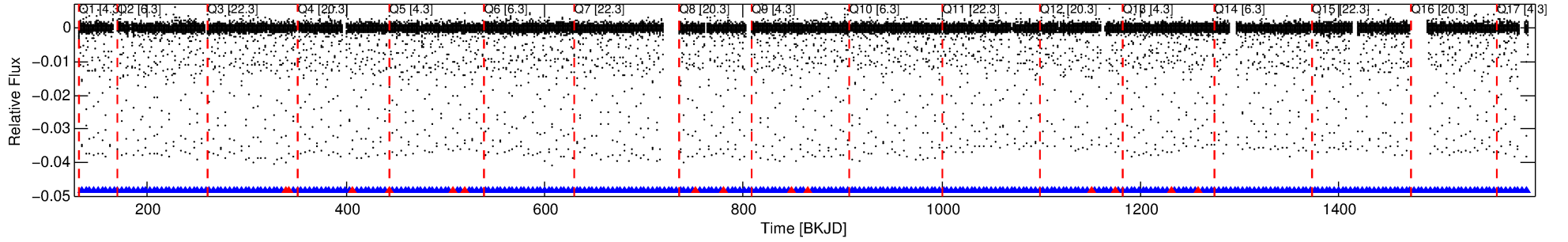
Ephemeris Match Information For 003427776-01

No Significant Match Found

DV One-Page Summary

KIC: 3427776 Candidate: 1 of 2 Period: 4.017 d
KOI: K06332.01 Corr: 0.993

Kp: 15.37 R*: 0.79 Rs Teff: 5448.0 K Logg: 4.50 Fe/H: -0.500



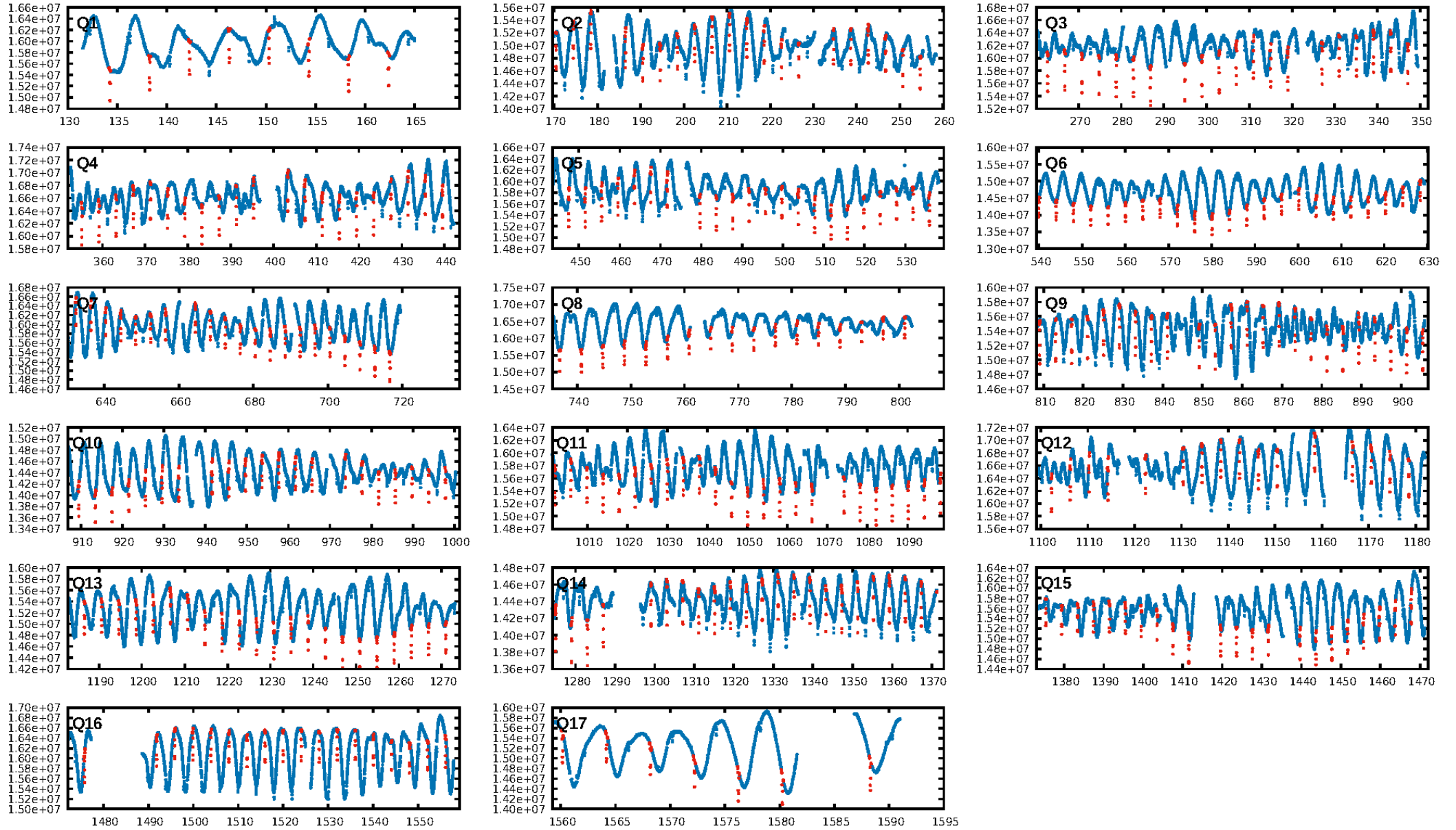
DV Fit Results:

Period = 4.01668 [0.00000] d
Epoch = 134.2405 [0.0000] BKJD
Rp/R* = 0.2463 [0.0058]
a/R* = 11.58 [0.05]
b = 0.90 [0.01]
Seff = 252.68 [60.12]
Teq = 1017 [60] K
Rp = 21.34 [3.40] Re
a = 0.0444 [0.0060] AU
Ag = 27.08 [5.54] [4.71σ]
Teffp = 3586 [125] K [18.53σ]

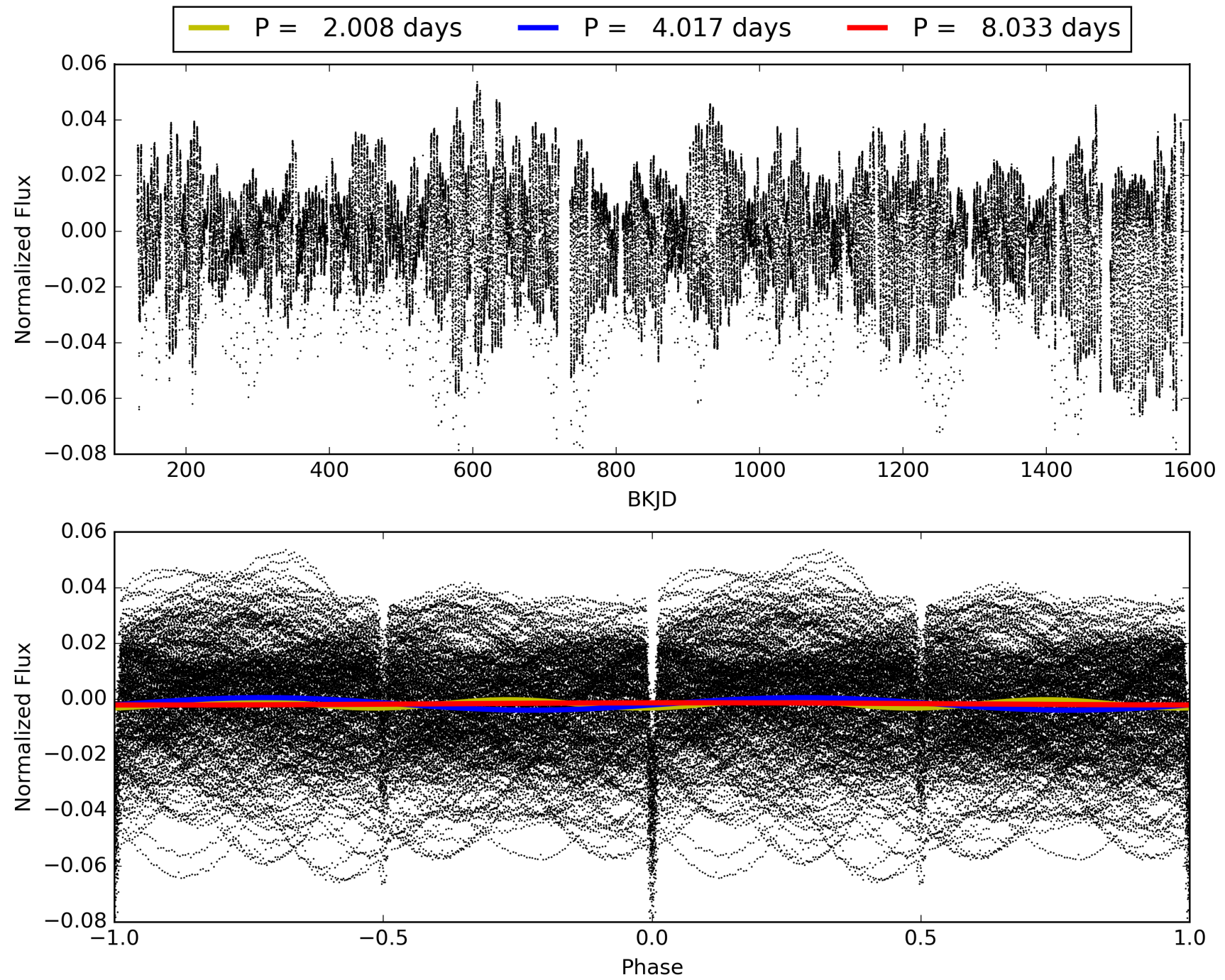
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [299/313]
GhostDiagnostic-chr: 1.819
Centroid-sig: 0.1%
Centroid-so: 0.468 arcsec [52.36σ]
OotOffset-rm: 0.018 arcsec [0.27σ]
KicOffset-rm: 0.131 arcsec [1.87σ]
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 003427776-01, PDC Light Curves

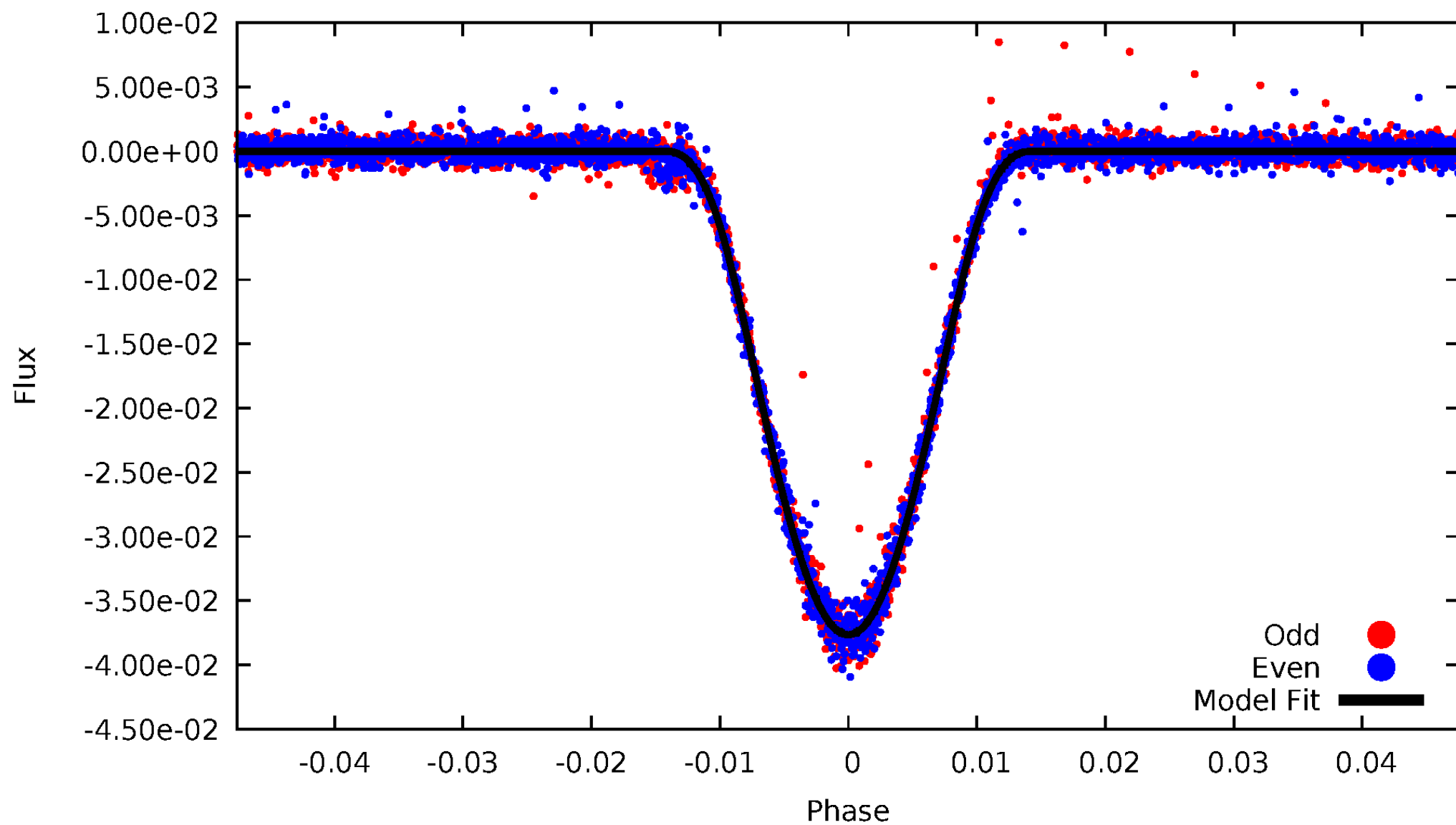


TCE 003427776-01



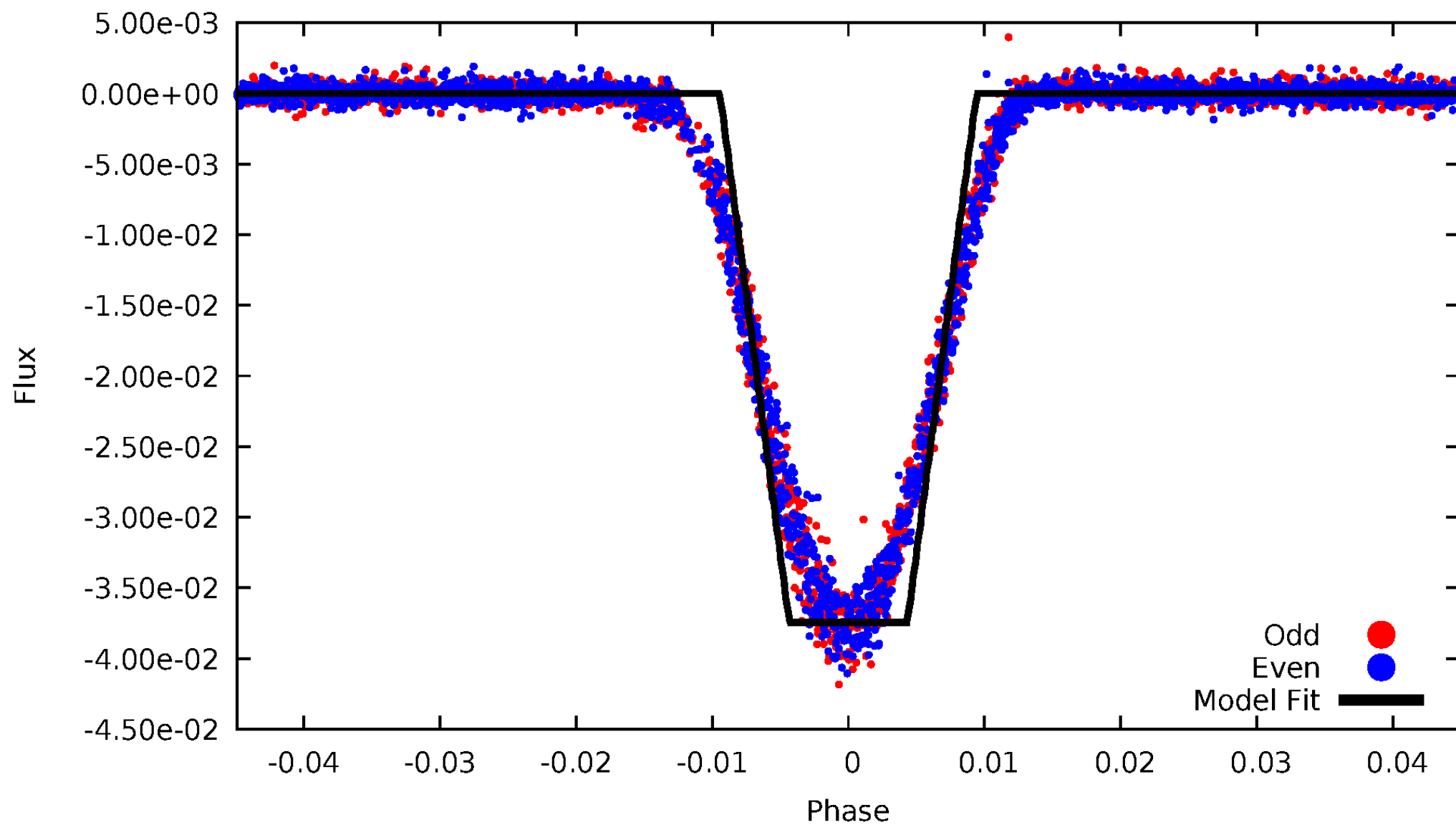
DV Odd/Even

TCE 00342776-01



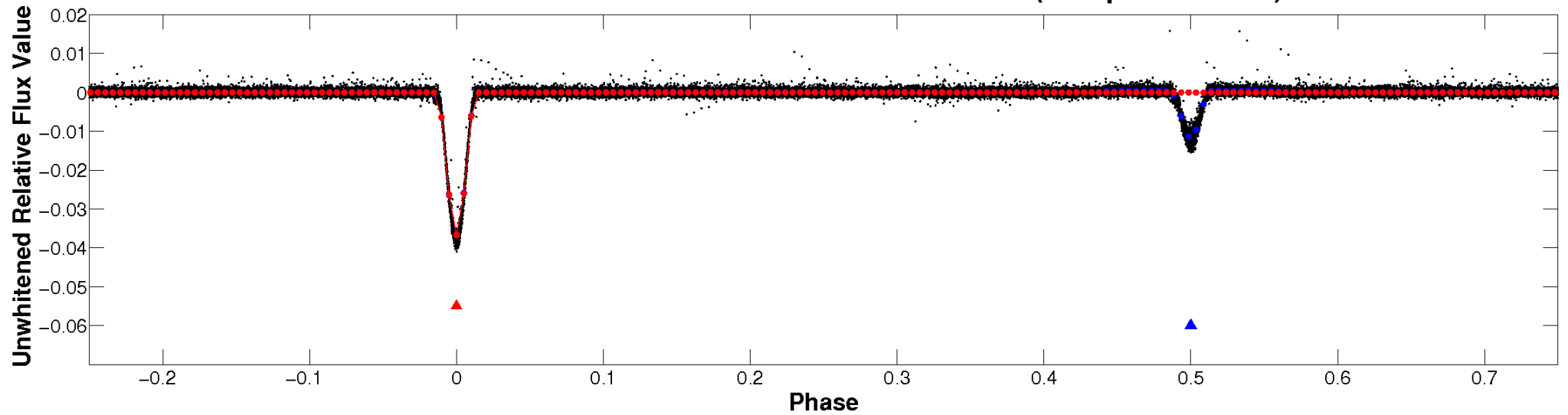
ALT Odd/Even

TCE 003427776-01

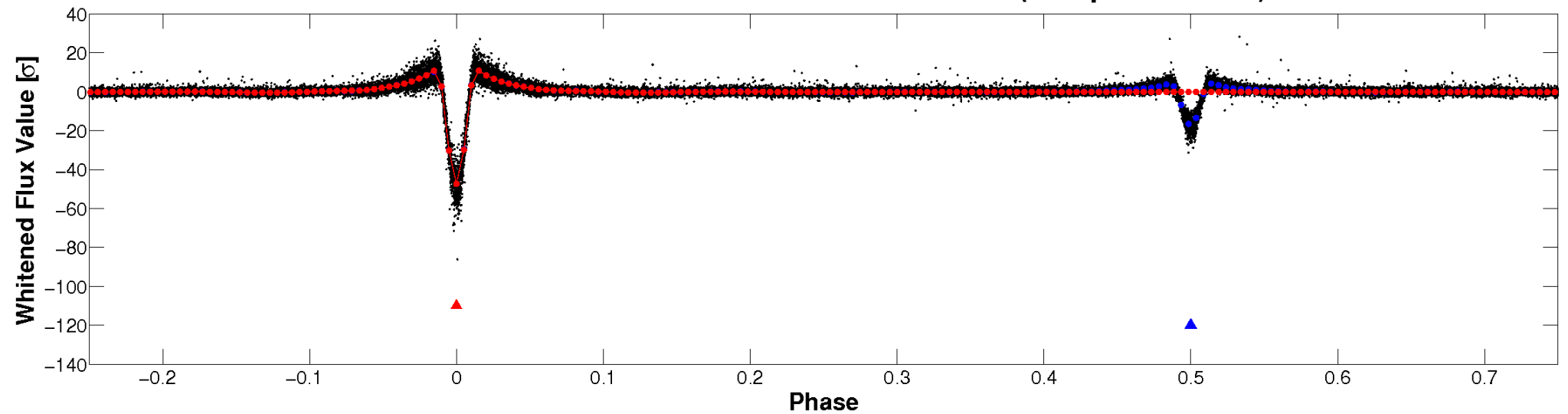


Non-Whitened Vs. Whitened Light Curve

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

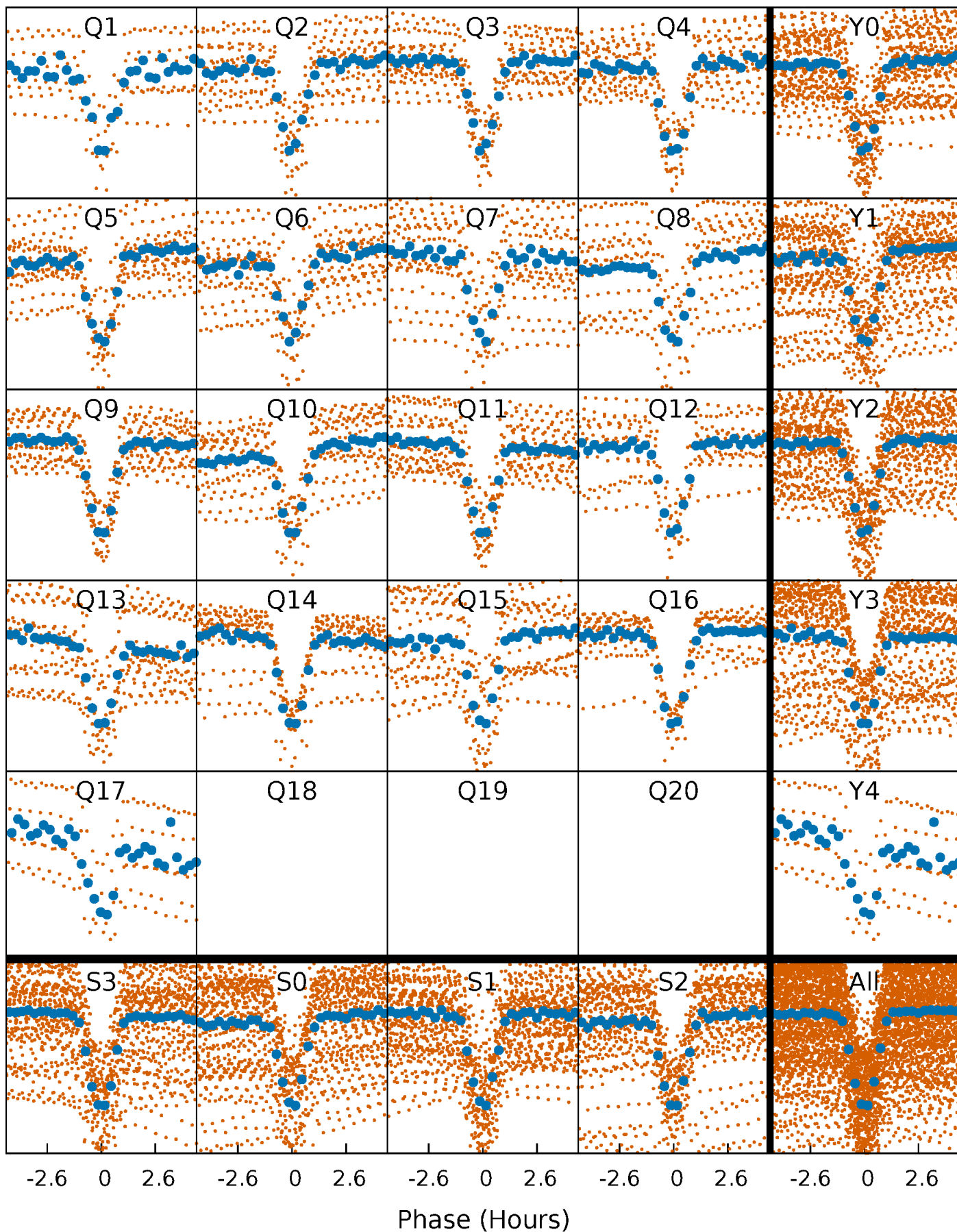


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



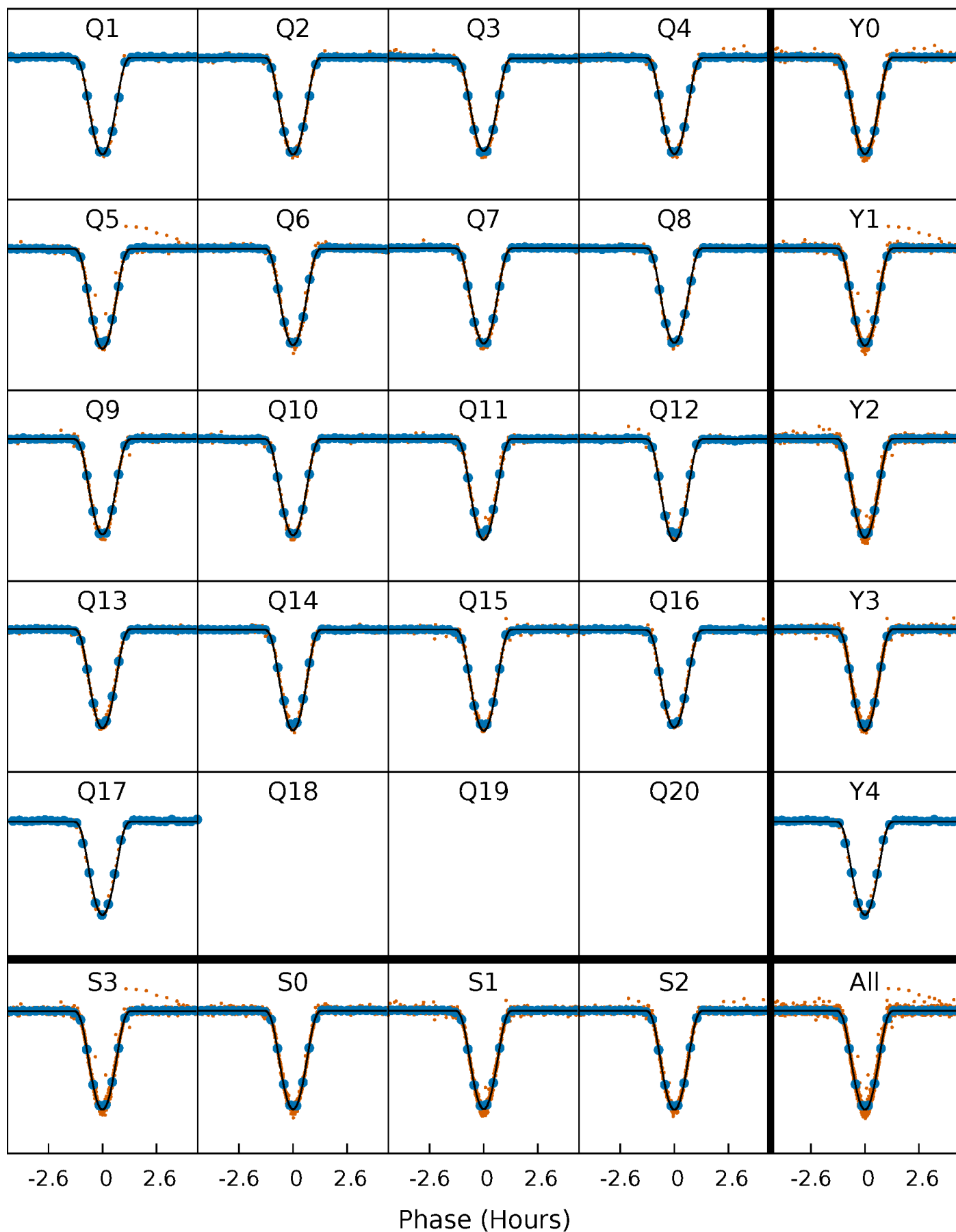
PDC Quarter-Phased Transit Curves

TCE 003427776-01 P= 4.016683 Days $T_0=134.240490$ (BKJD)



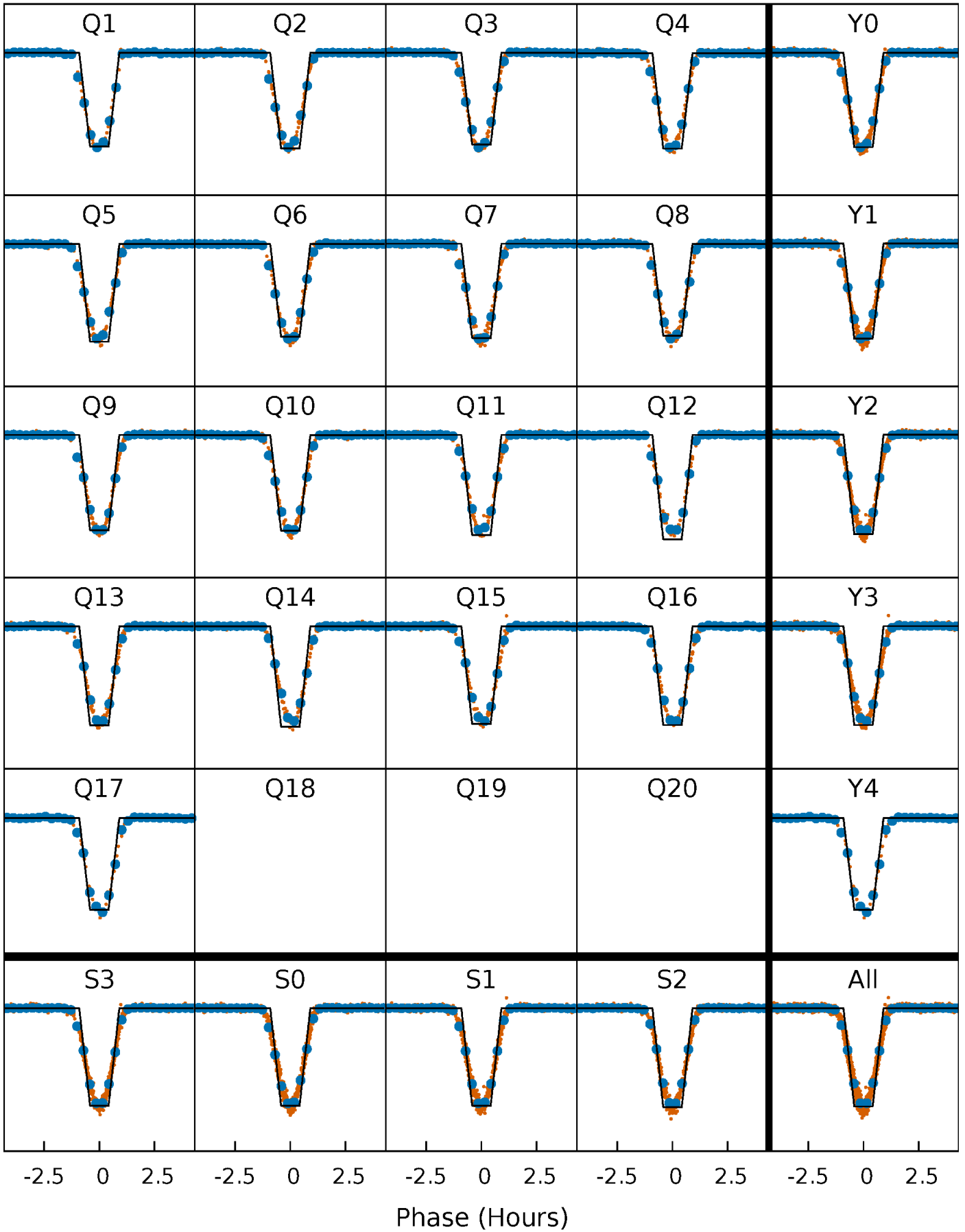
DV Quarter-Phased Transit Curves

TCE 003427776-01 P= 4.016683 Days $T_0=134.240490$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

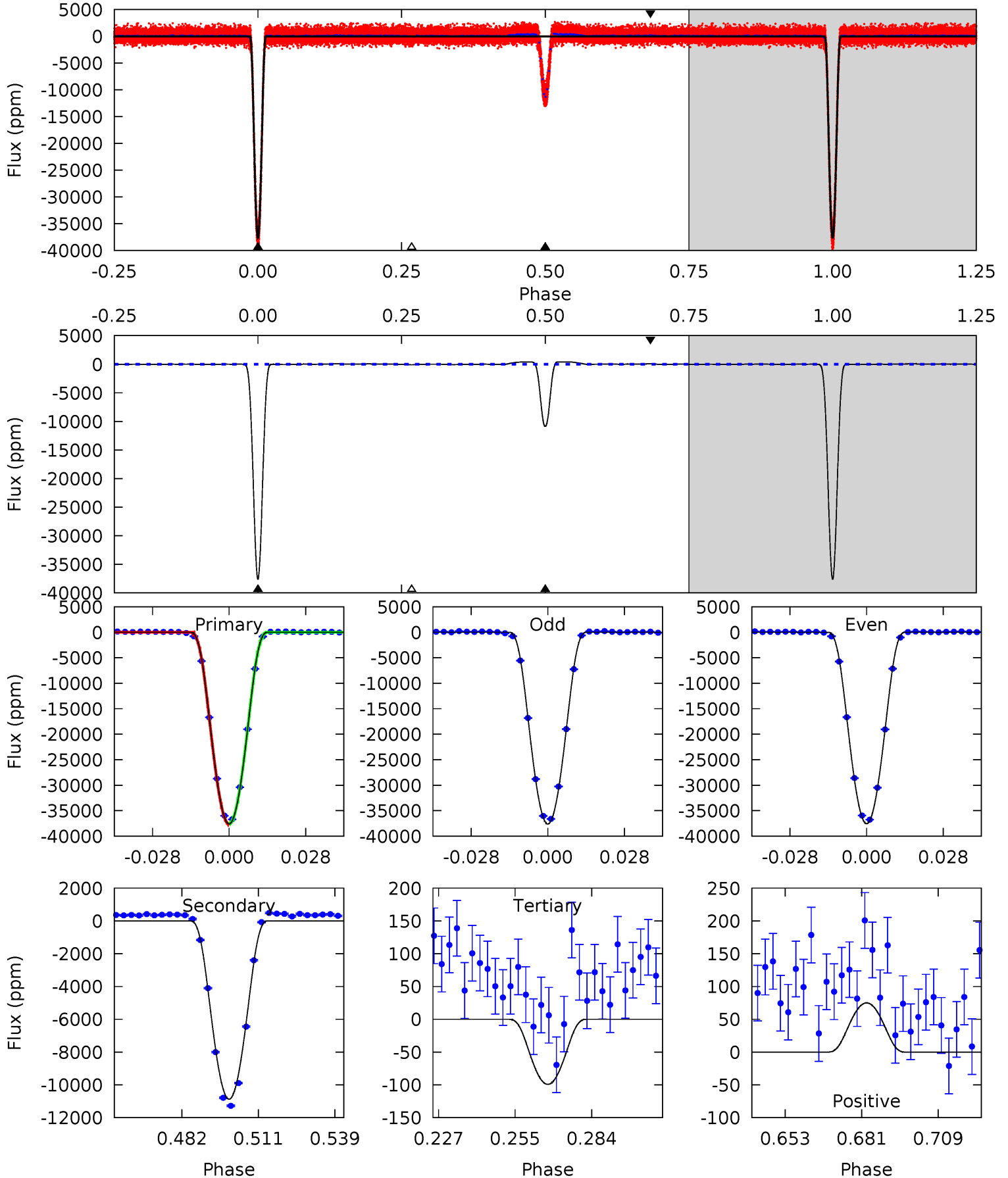
TCE 003427776-01 P= 4.016666 Days $T_0=134.243375$ (BKJD)



DV Model-Shift Uniqueness Test

003427776-01, P = 4.016683 Days, E = 130.223807 Days

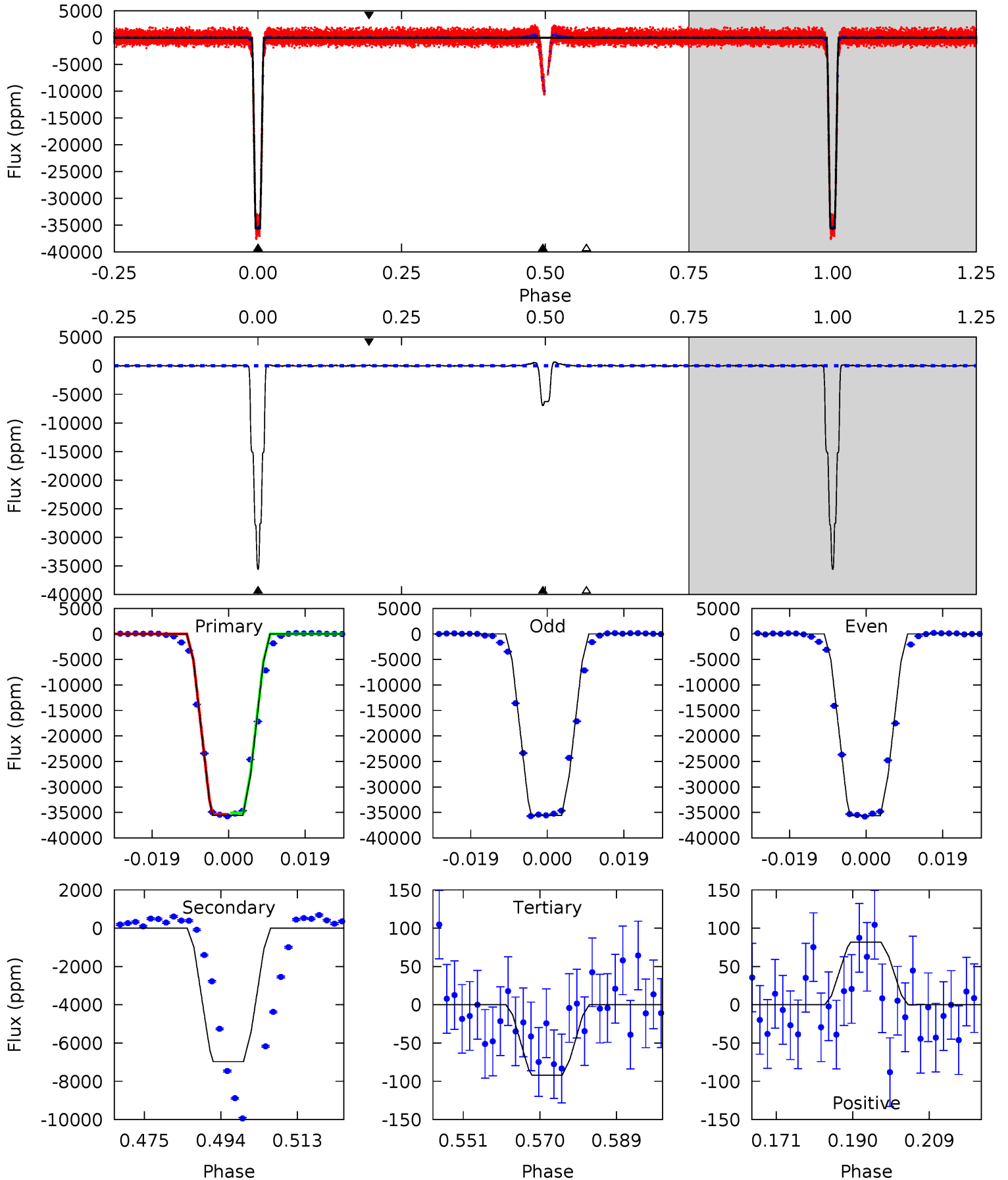
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2625	759.5	6.93	5.24	4.82	2.19	6.68	2618	2620	752.5	754.2	1.76	1.00	0.01	3.25



Alt Model-Shift Uniqueness Test

003427776-01, P = 4.016666 Days, E = 130.226709 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1524	298.9	3.94	3.51	4.90	2.35	3.20	1520	1521	294.9	295.3	1.01	1.00	0.02	0



Stellar Parameters For KIC 003427776

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5448^{+178}_{-162}	$4.497^{+0.110}_{-0.110}$	$-0.500^{+0.350}_{-0.300}$	$0.794^{+0.125}_{-0.102}$	$0.721^{+0.112}_{-0.037}$	$2.032^{+0.980}_{-0.662}$
	+3%/-3%	+2%/-2%	+70%/-60%	+16%/-13%	+16%/-5%	+48%/-33%
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 003427776-01 / KOI 6332.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10875 ± 14	$21.57^{+2.14}_{-1.66}$	1422^{+77}_{-64}	3884^{+93}_{-97}	26^{+4}_{-4}
Alt.	-6972 ± 23	$16.90^{+1.70}_{-1.42}$	1421^{+72}_{-64}	3908^{+111}_{-97}	27^{+5}_{-4}

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

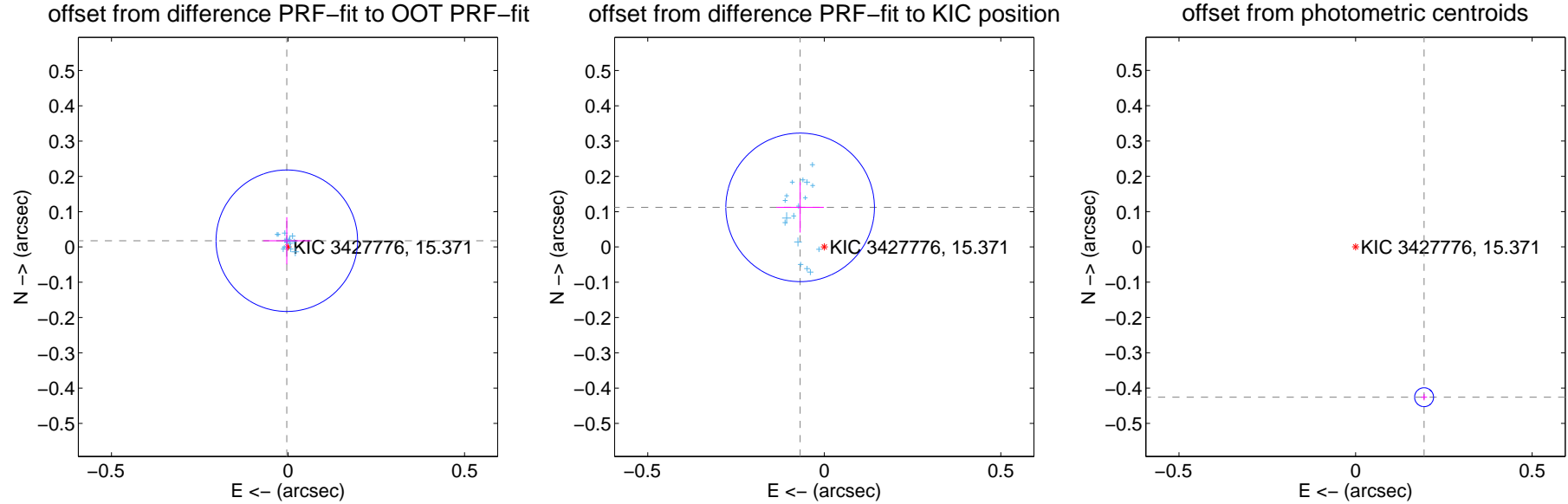
DV Centroid Data

Supplemental centroid analysis for 003427776-01. Kepler magnitude: 15.37. Transit SNR 1127.09

There are 17 quarters with good PRF difference image offsets

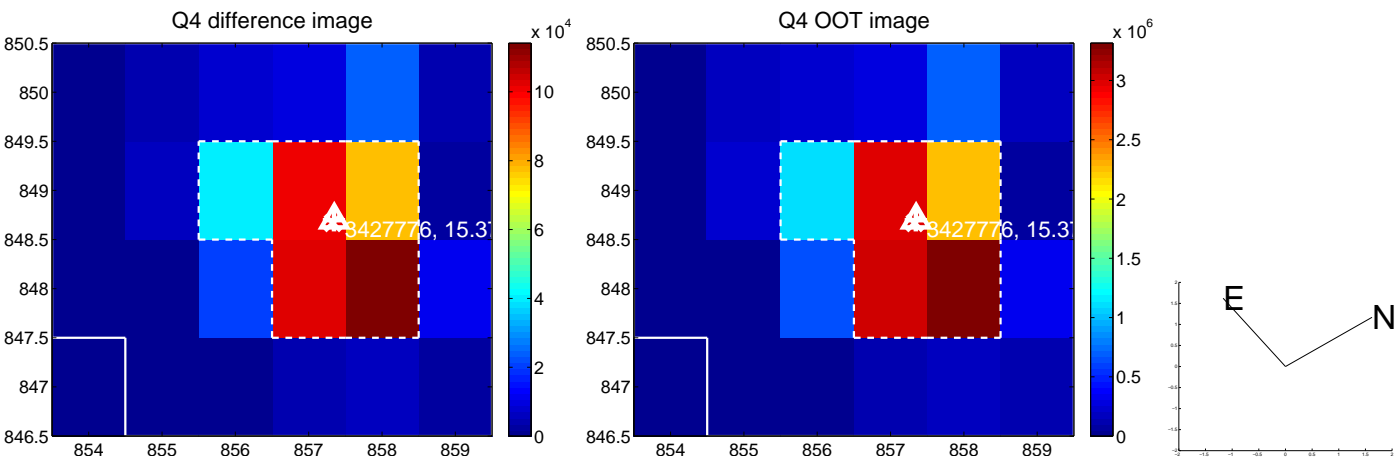
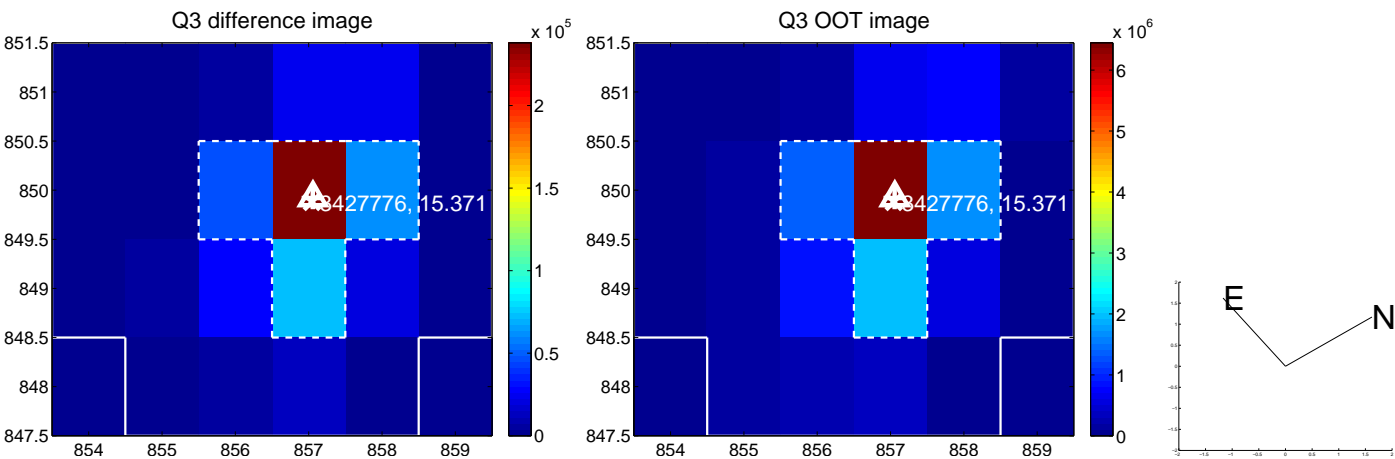
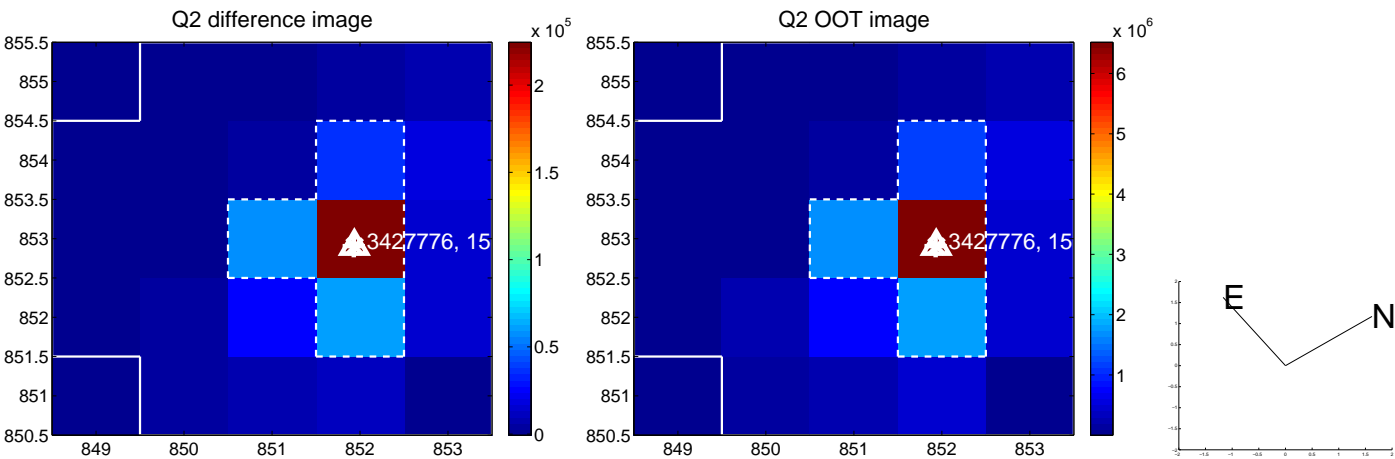
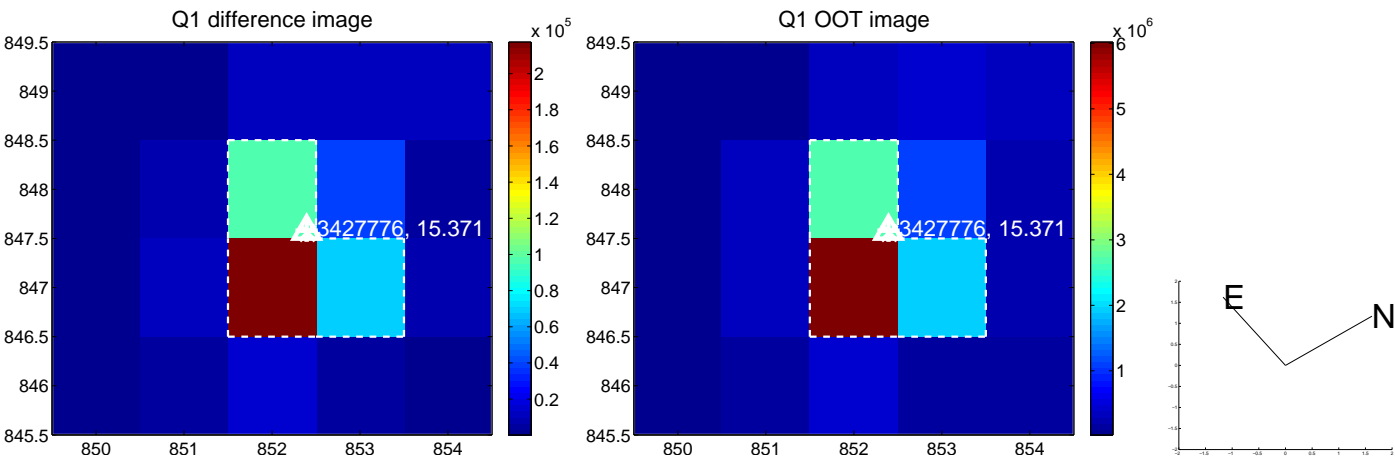
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.018 ± 0.067	0.27	0.003 ± 0.067	0.018 ± 0.067
PRF-fit source offset from KIC position	0.131 ± 0.070	1.87	0.068 ± 0.067	0.112 ± 0.071
photometric centroid source offset	0.47 ± 0.01	52.36	-0.19 ± 0.01	-0.43 ± 0.01

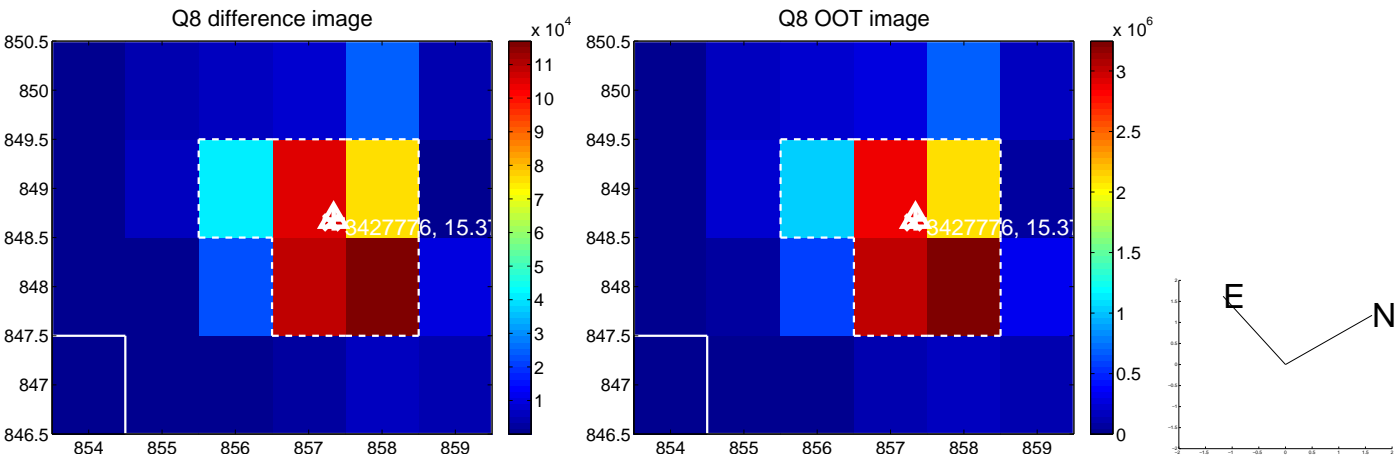
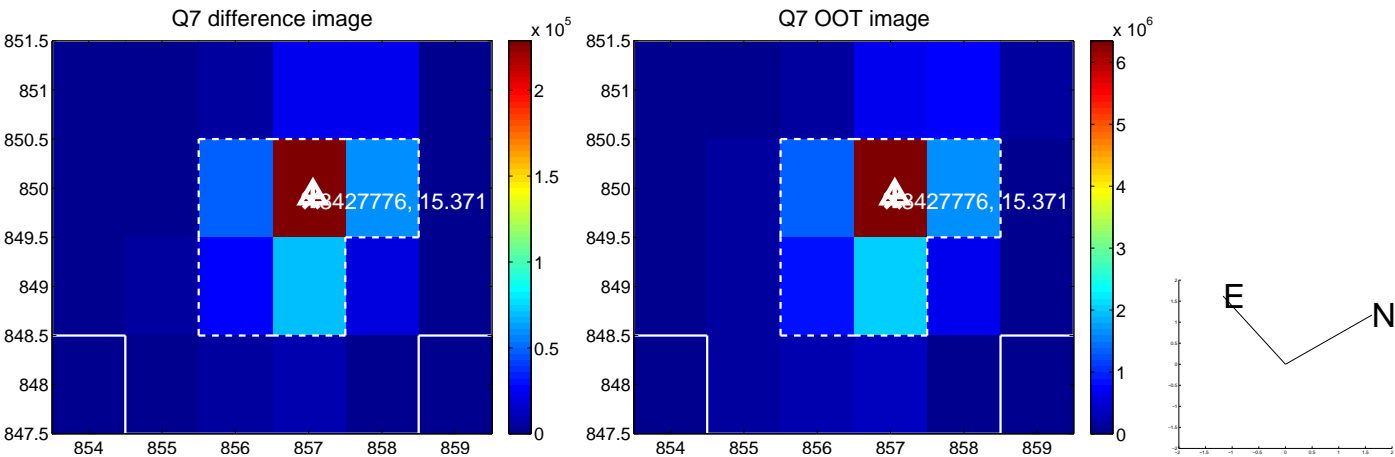
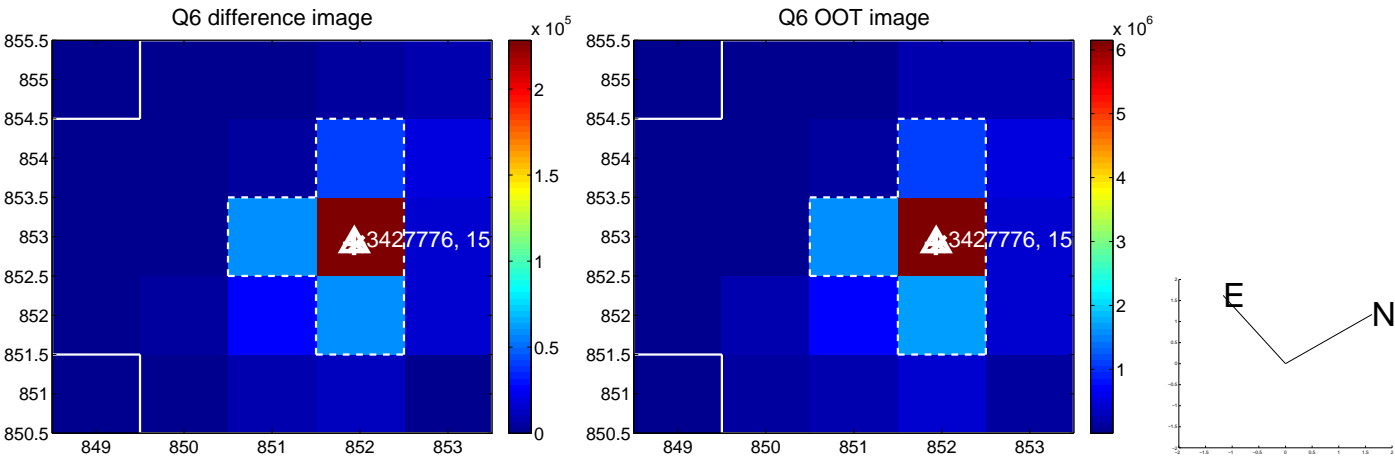
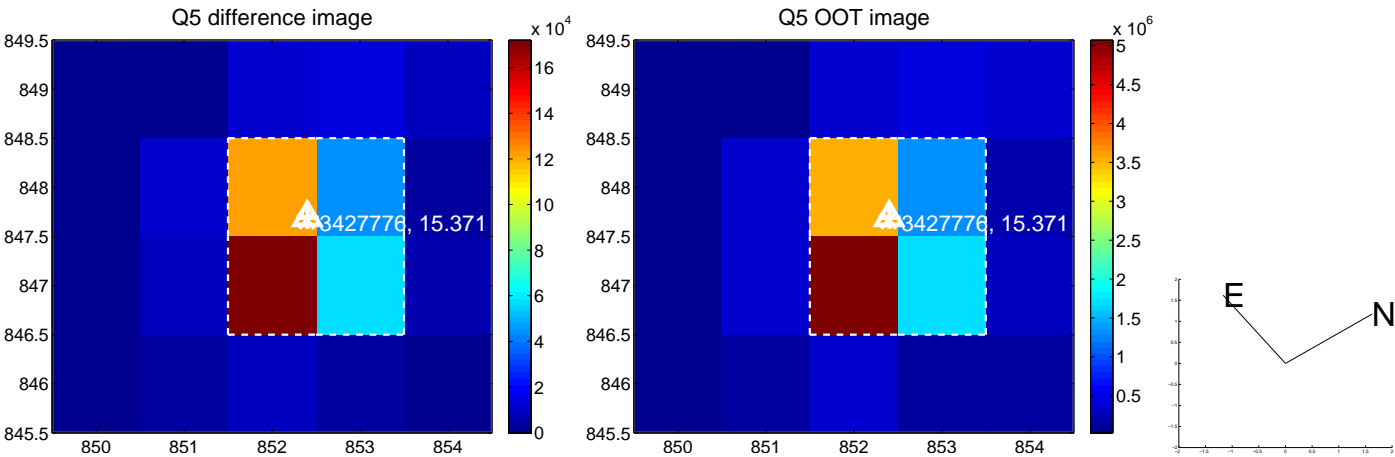


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

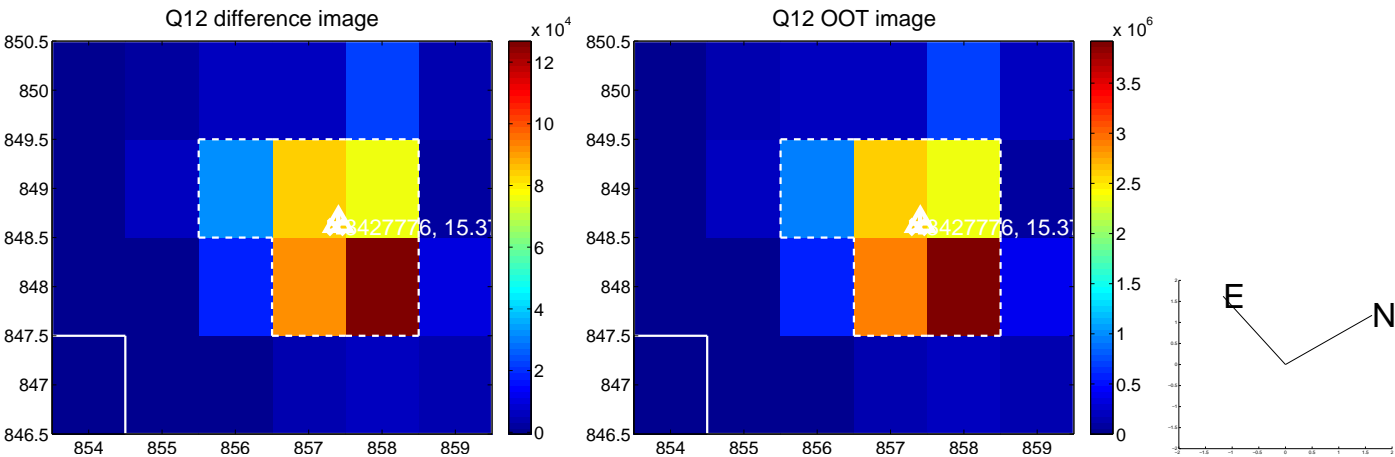
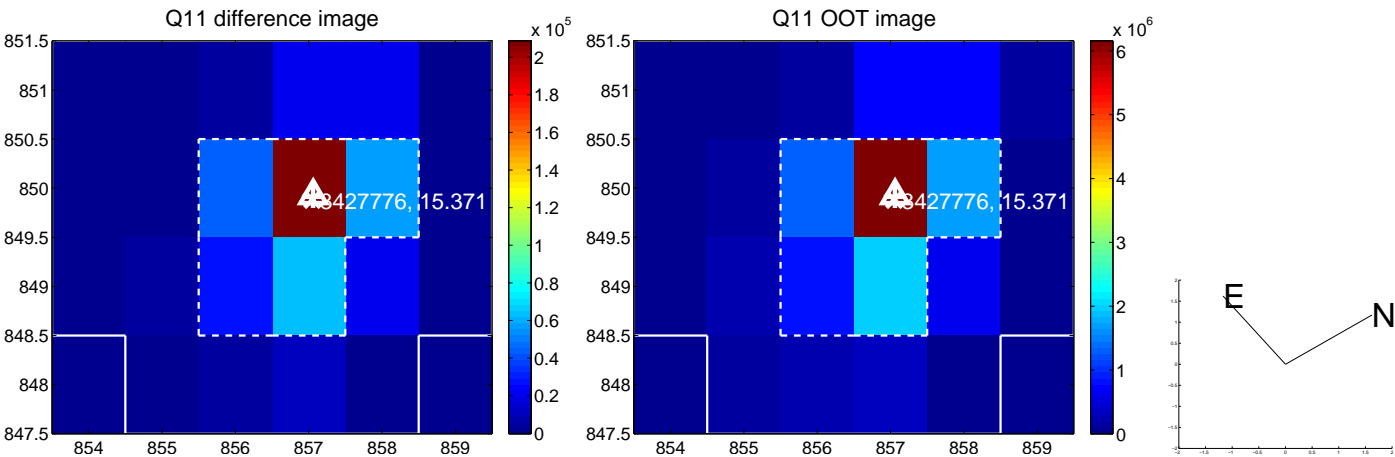
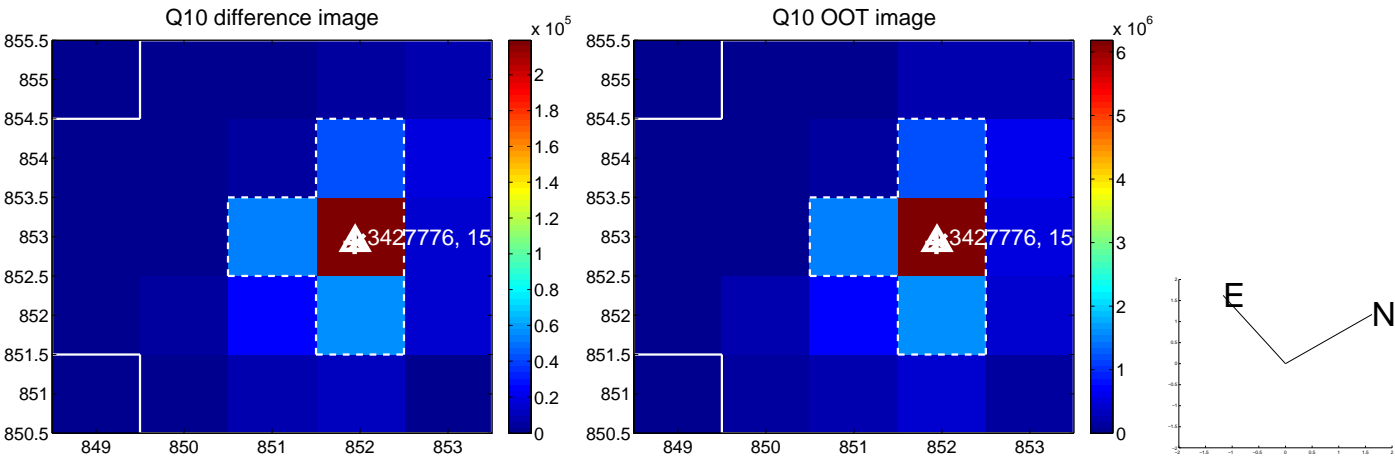
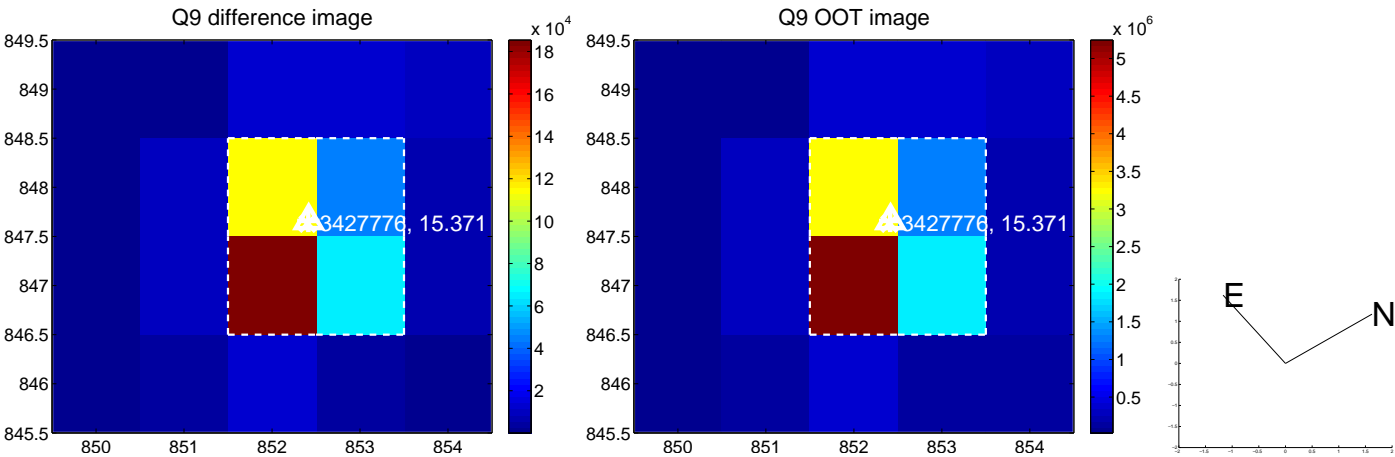
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



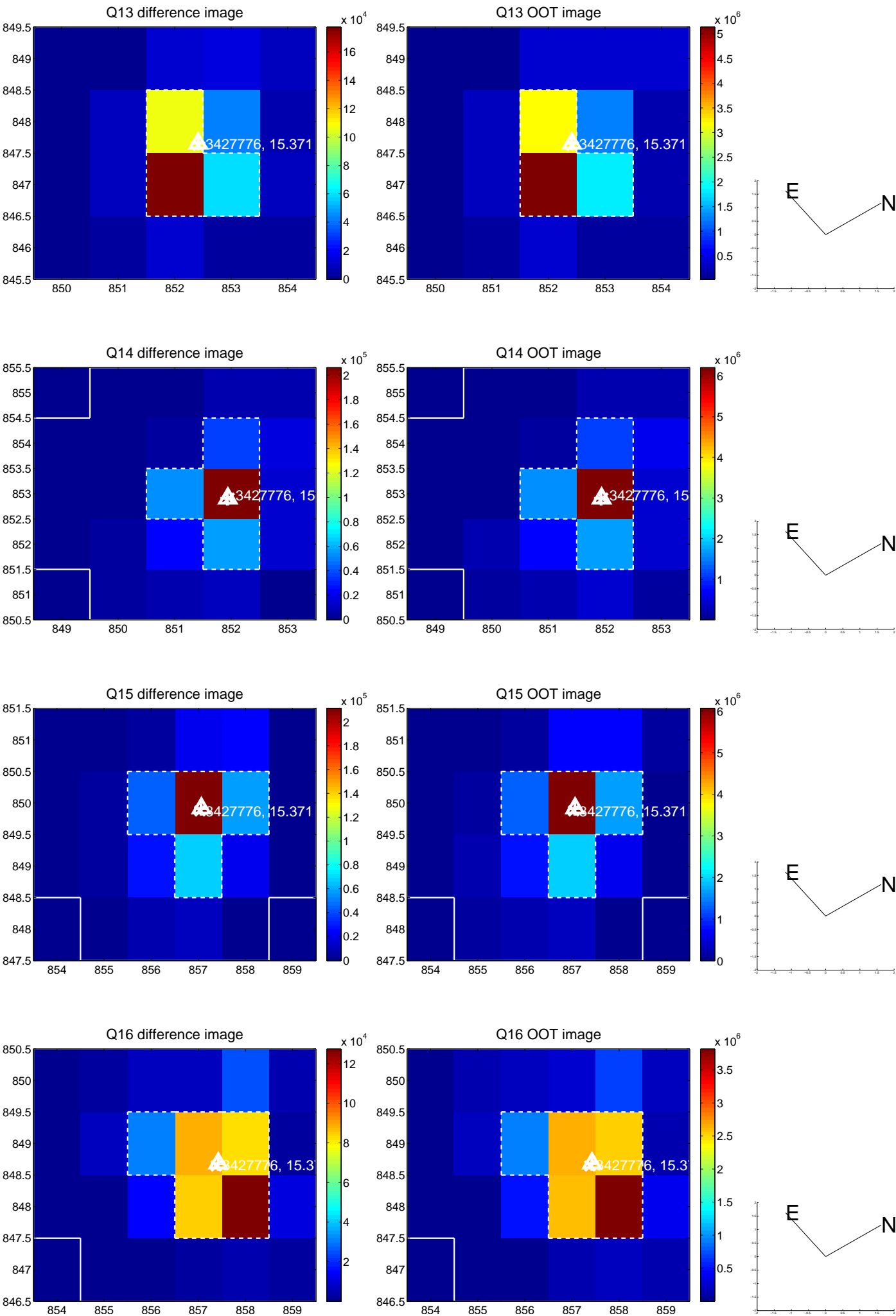
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



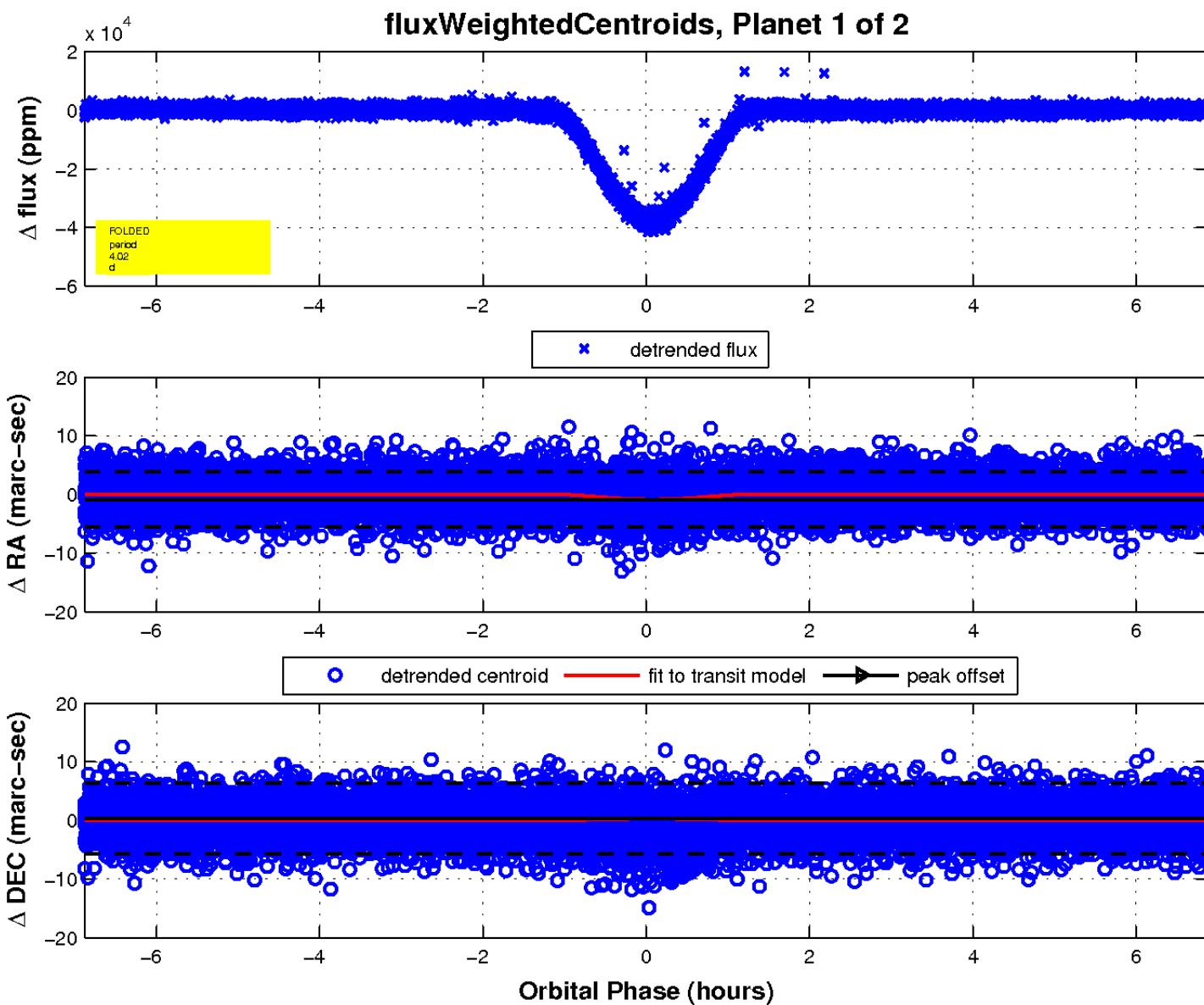
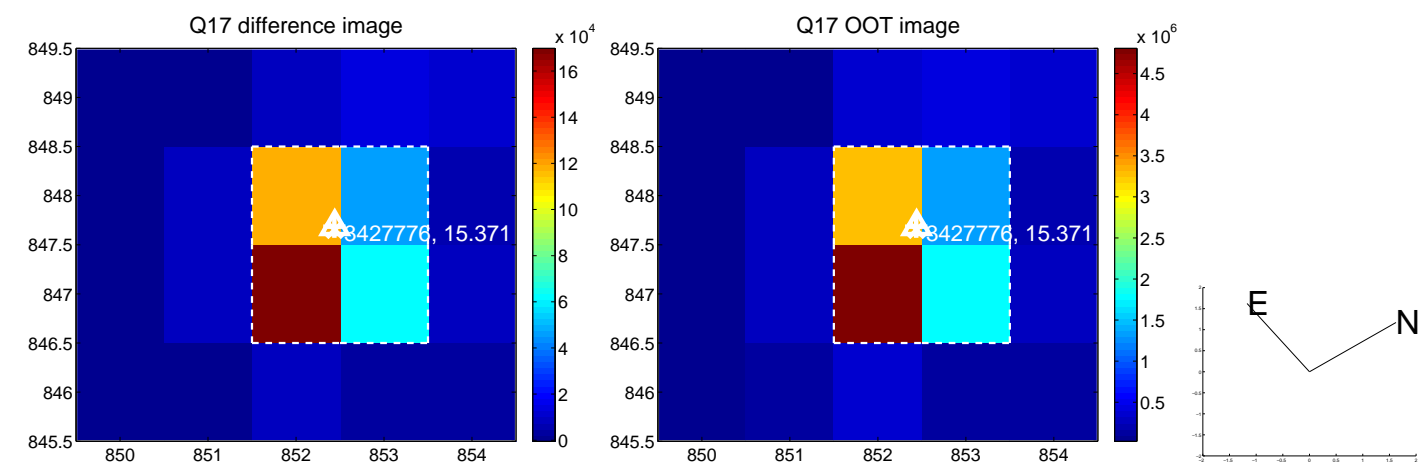
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



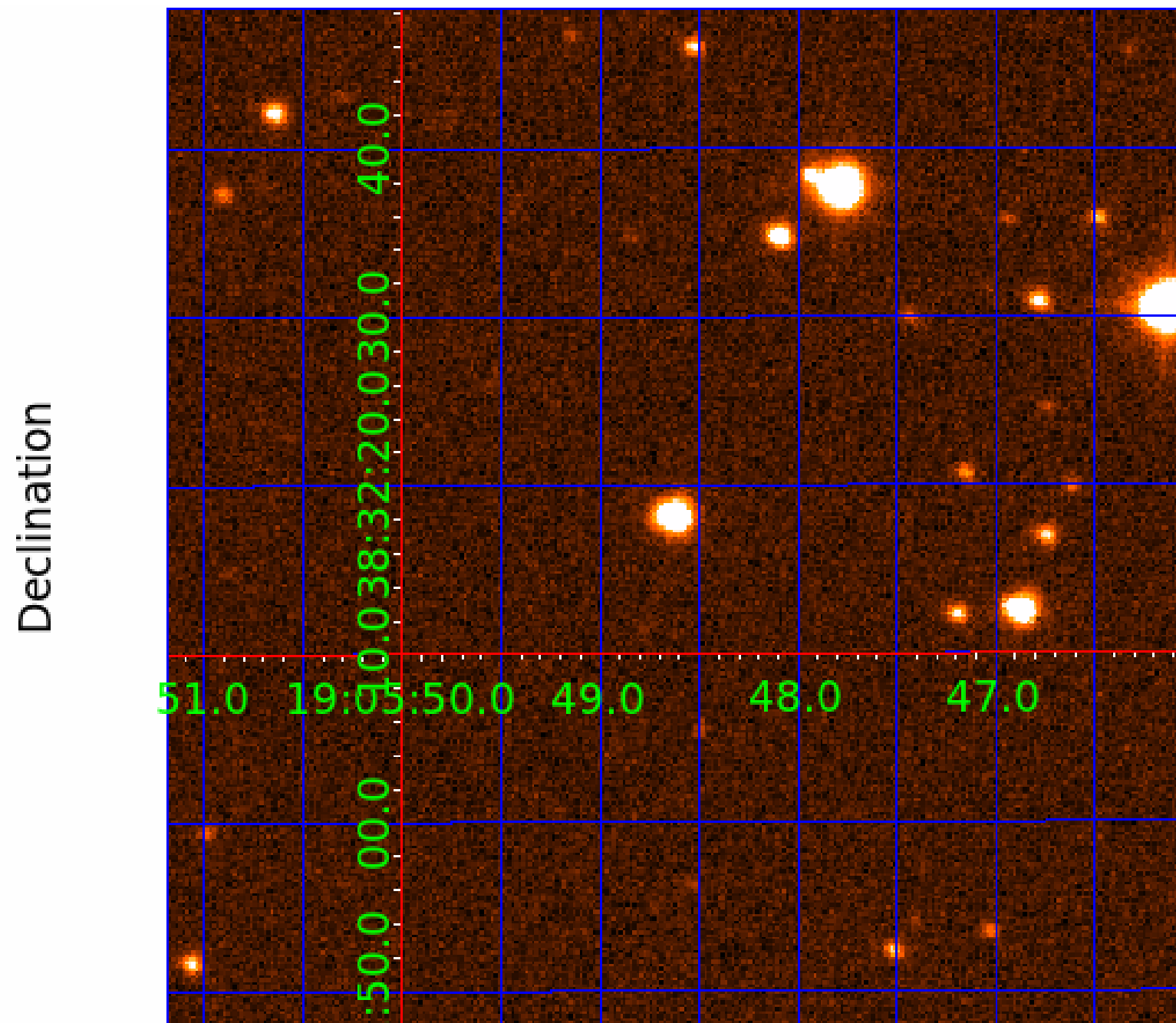
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003427776

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})
003427776-01	OBS	6332.01	4.016683	134.240490	37644.2	2.293	1307.7	1127.1	0.79	5448	21.34	252.68
003427776-02	OBS	No	4.016688	132.231251	12304.6	2.231	442.3	382.2	0.79	5448	15.26	252.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003427776-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003427776-02	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.

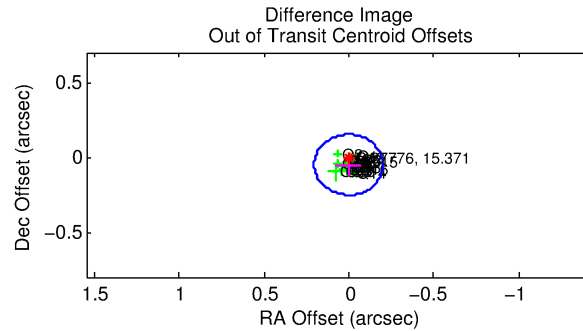
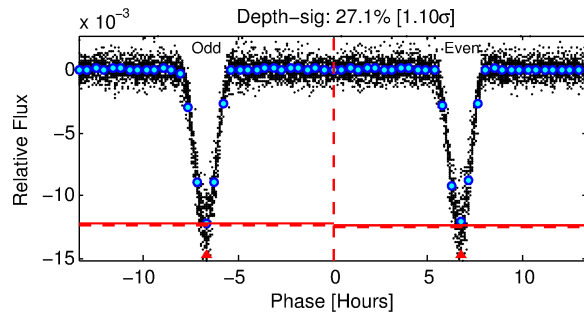
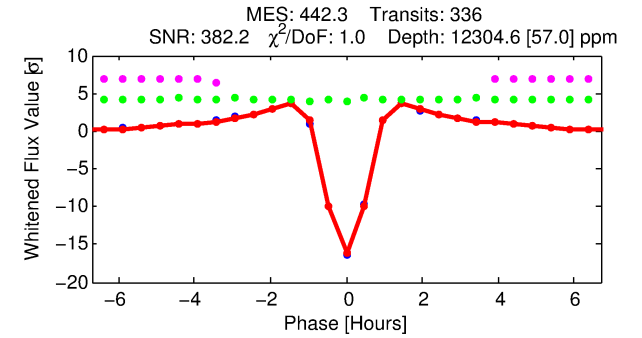
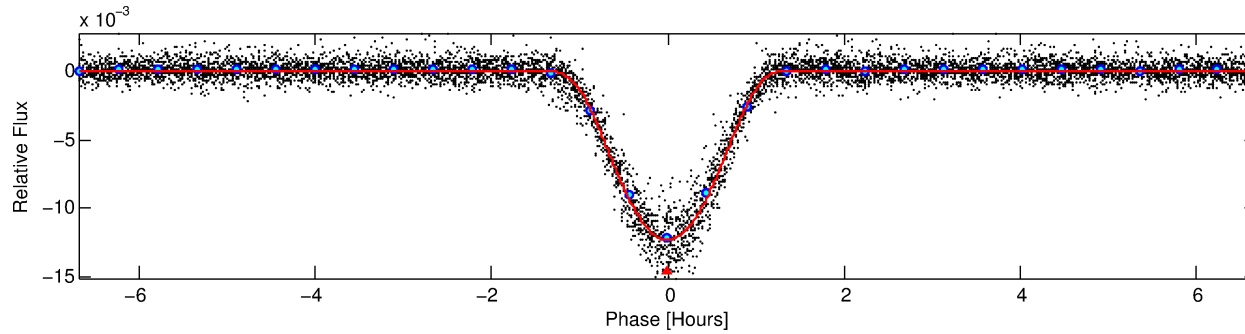
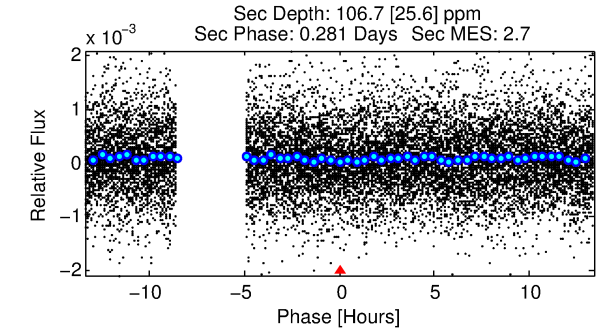
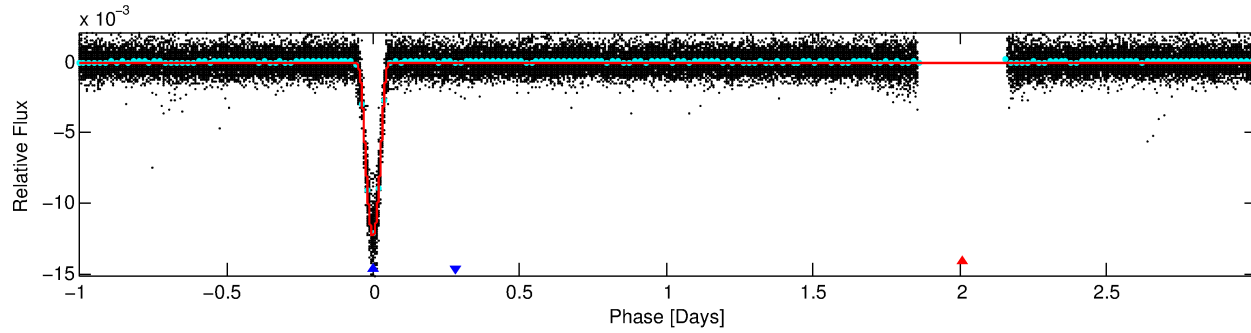
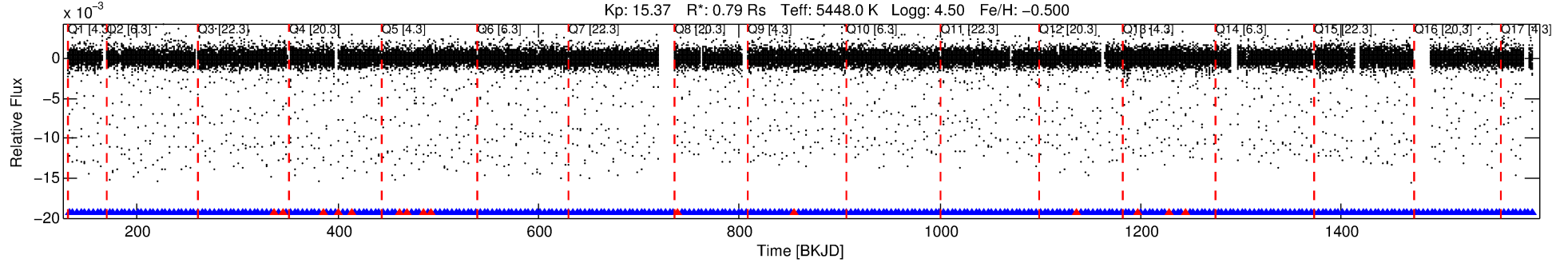
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003427776-02

No Significant Match Found

DV One-Page Summary

KIC: 3427776 Candidate: 2 of 2 Period: 4.017 d
KOI: K06332 Corr: No Ephemeris Match



DV Fit Results:

Period = 4.01669 [0.00000] d
Epoch = 132.2313 [0.0001] BKJD
Rp/R* = 0.1762 [0.0242]
a/R* = 8.85 [0.18]
b = 0.99 [0.04]
Seff = 252.68 [60.12]
Teq = 1017 [60] K
Rp = 15.26 [3.19] Re
a = 0.0444 [0.0060] AU
Ag = 0.50 [0.21] [-2.44 σ]
Teffp = 1319 [128] K [2.14 σ]

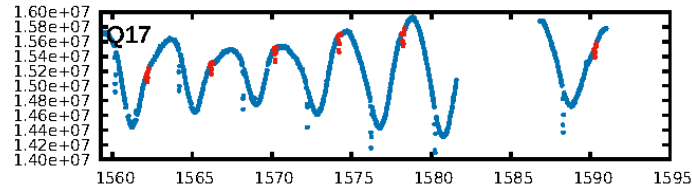
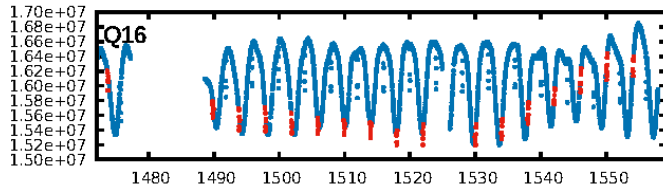
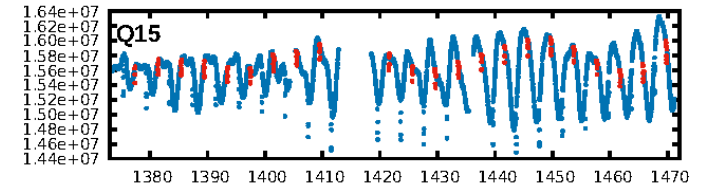
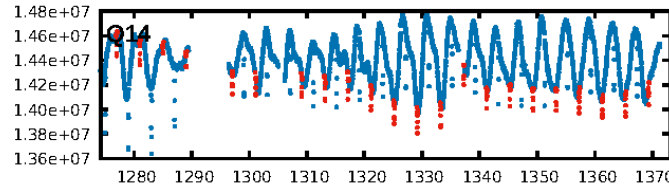
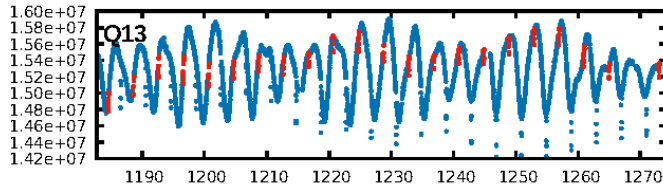
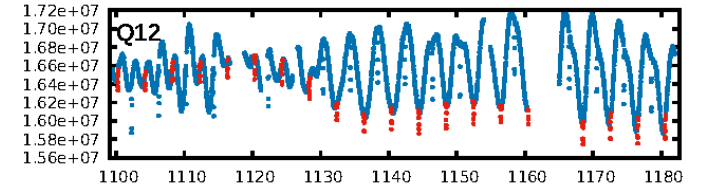
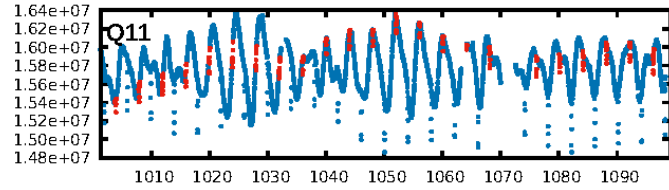
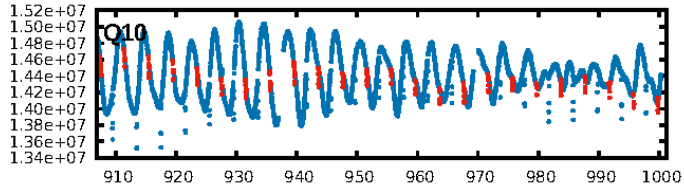
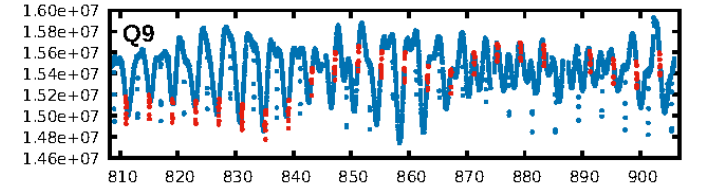
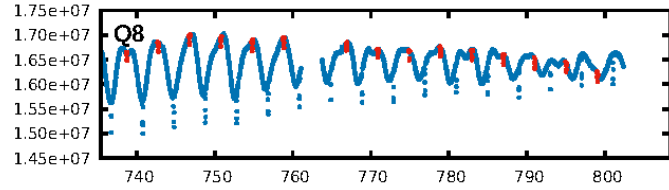
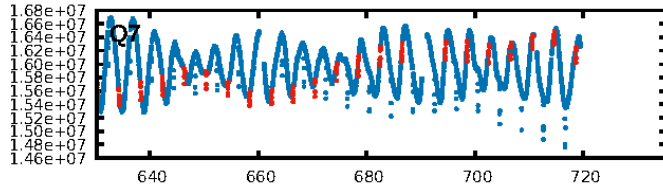
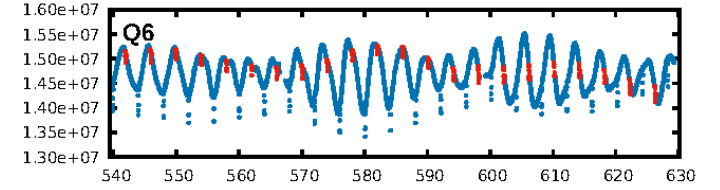
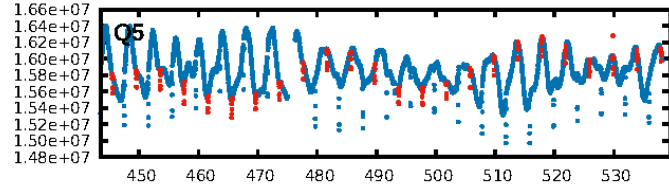
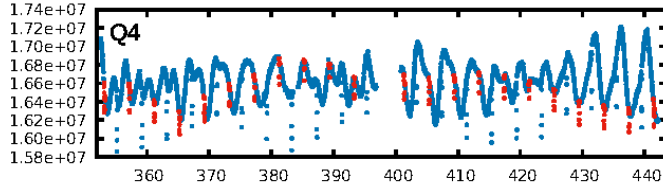
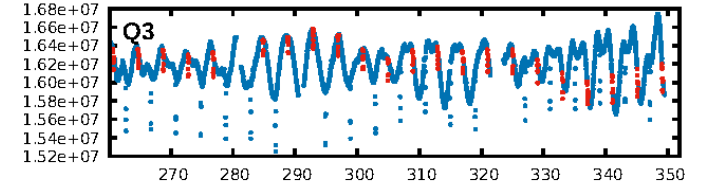
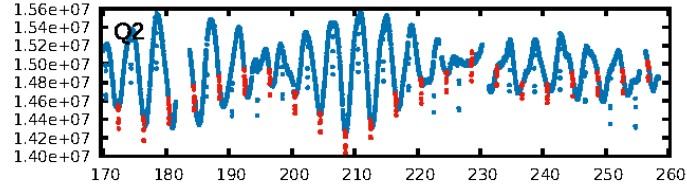
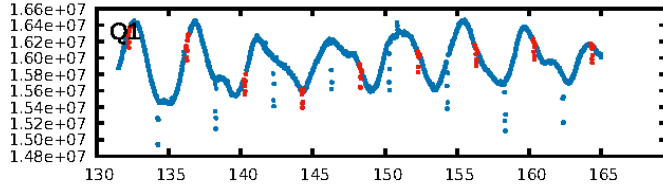
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.95 [306/321]
GhostDiagnostic-chr: 1.862
Centroid-sig: 0.0%
Centroid-so: 0.474 arcsec [17.38 σ]
OotOffset-rm: 0.051 arcsec [0.75 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.089 arcsec [1.29 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

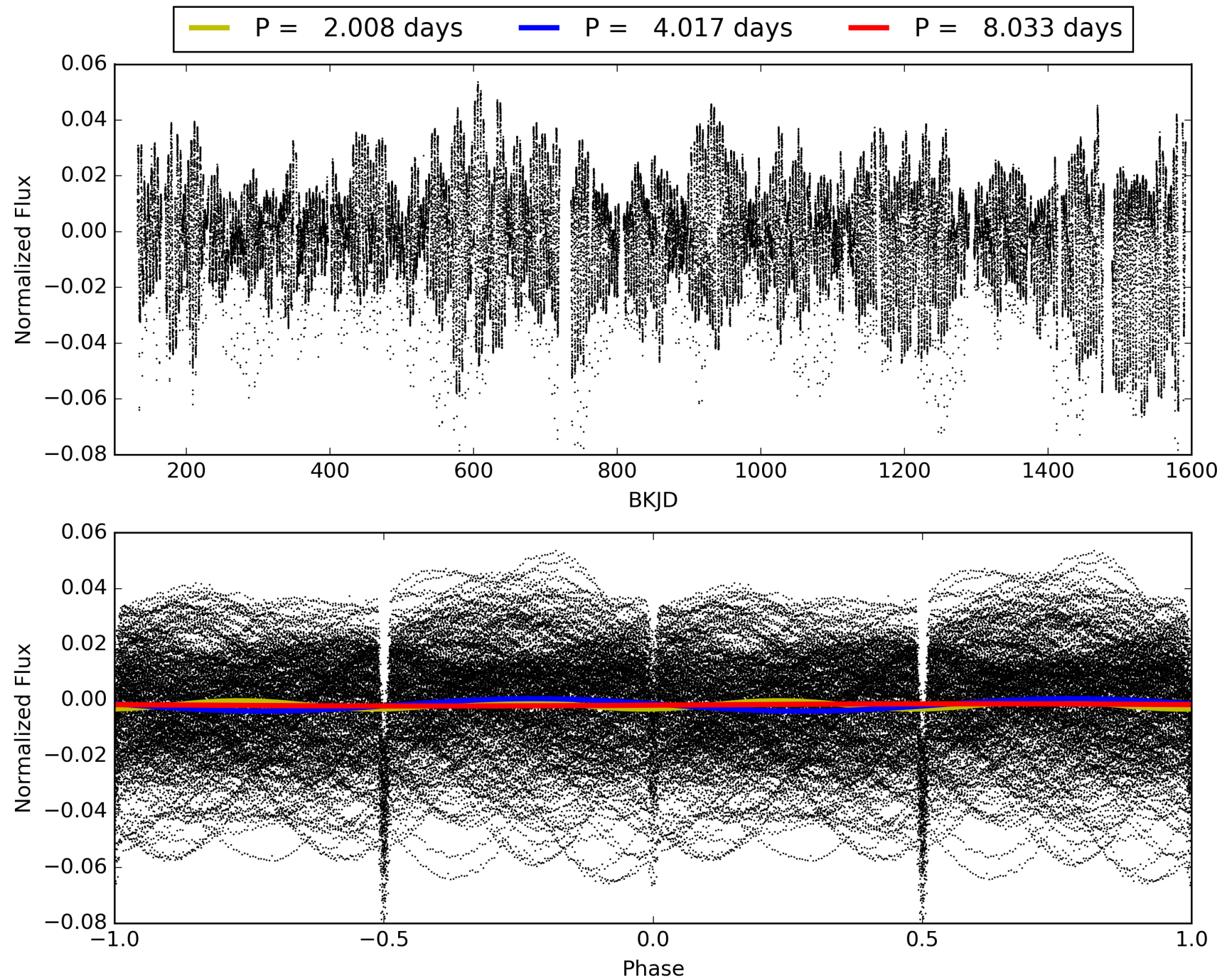
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003427776-02, PDC Light Curves

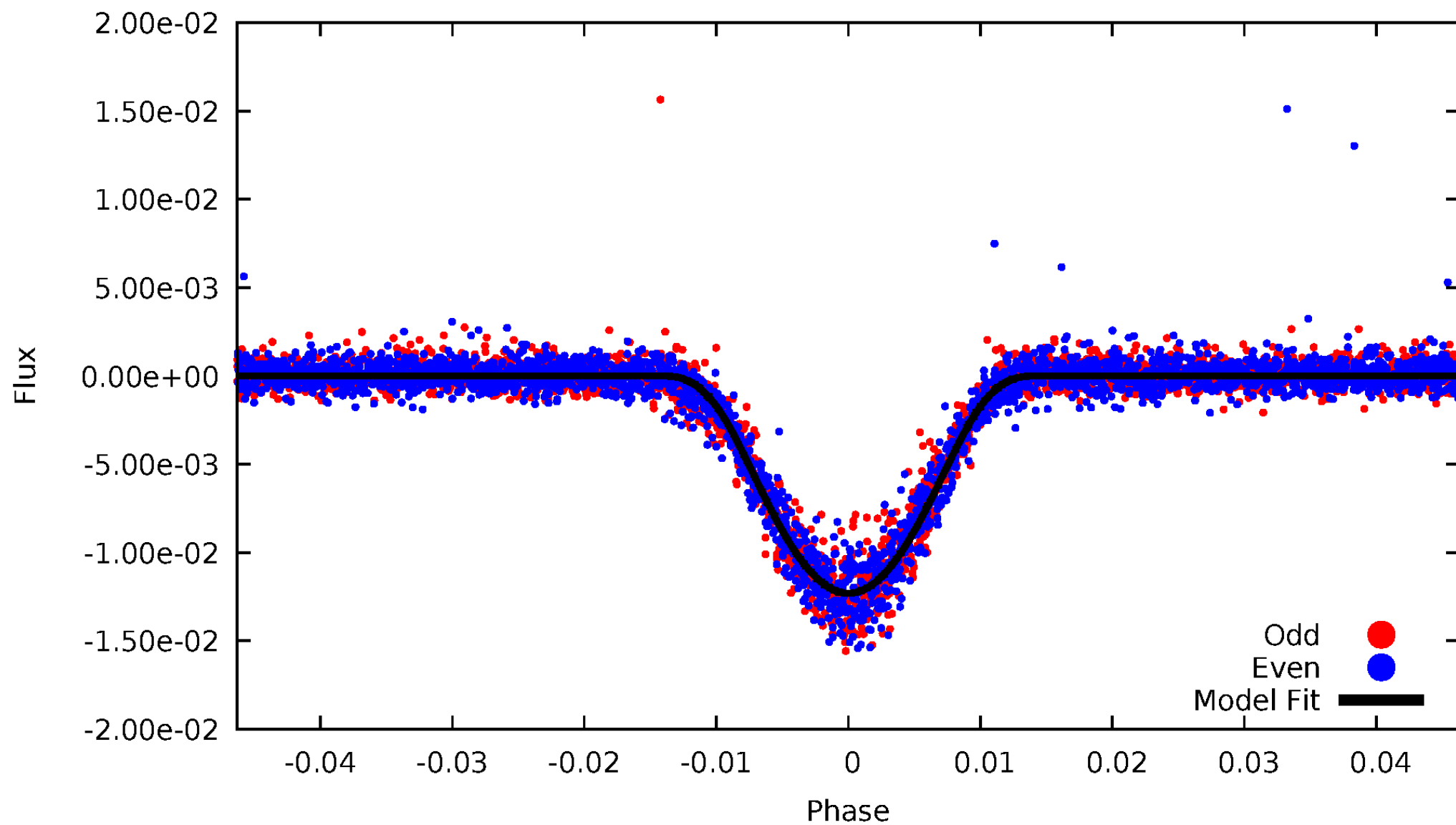


TCE 003427776-02



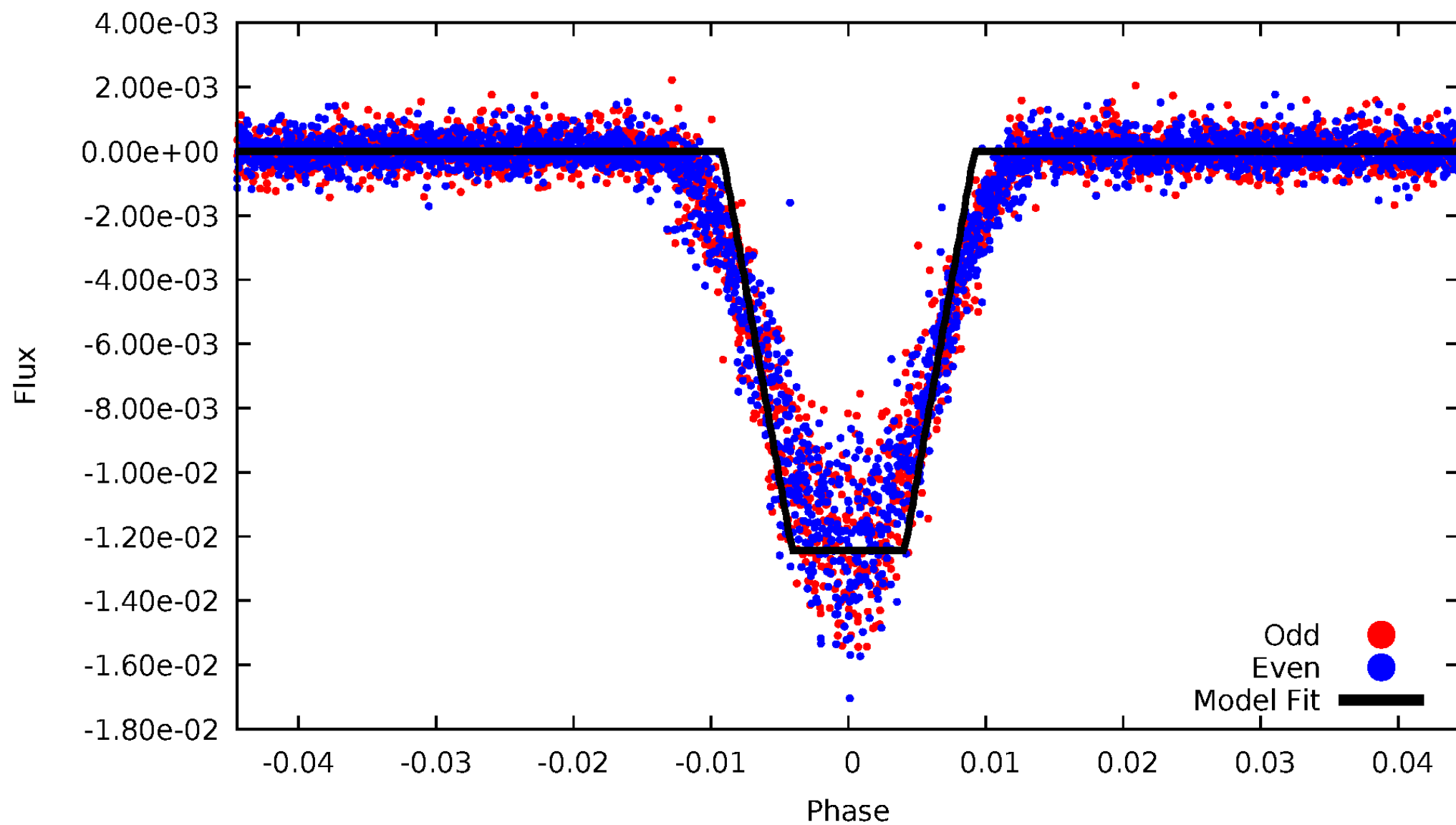
DV Odd/Even

TCE 00342776-02



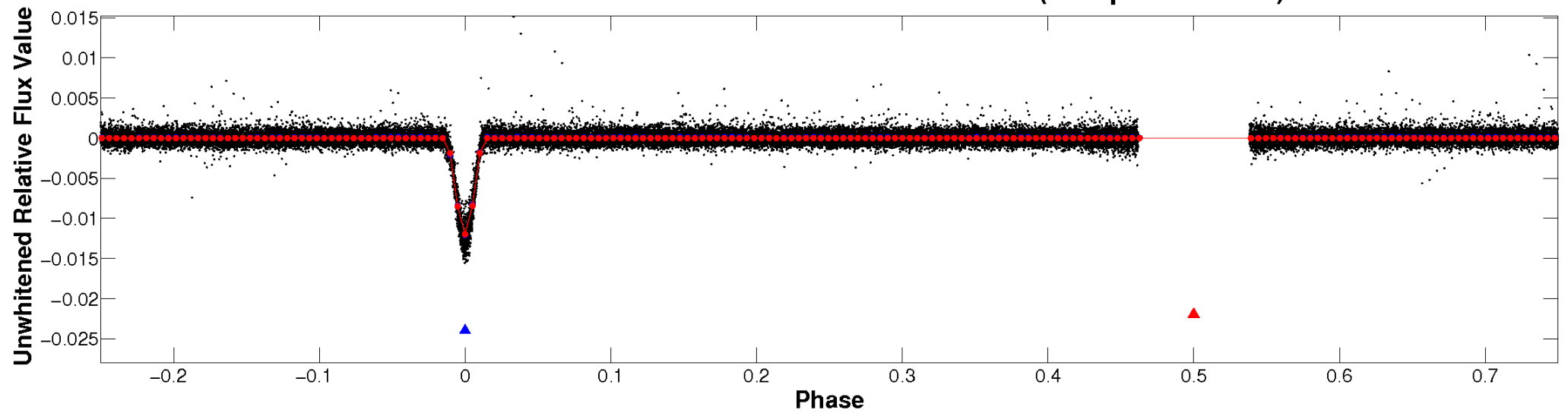
ALT Odd/Even

TCE 00342776-02

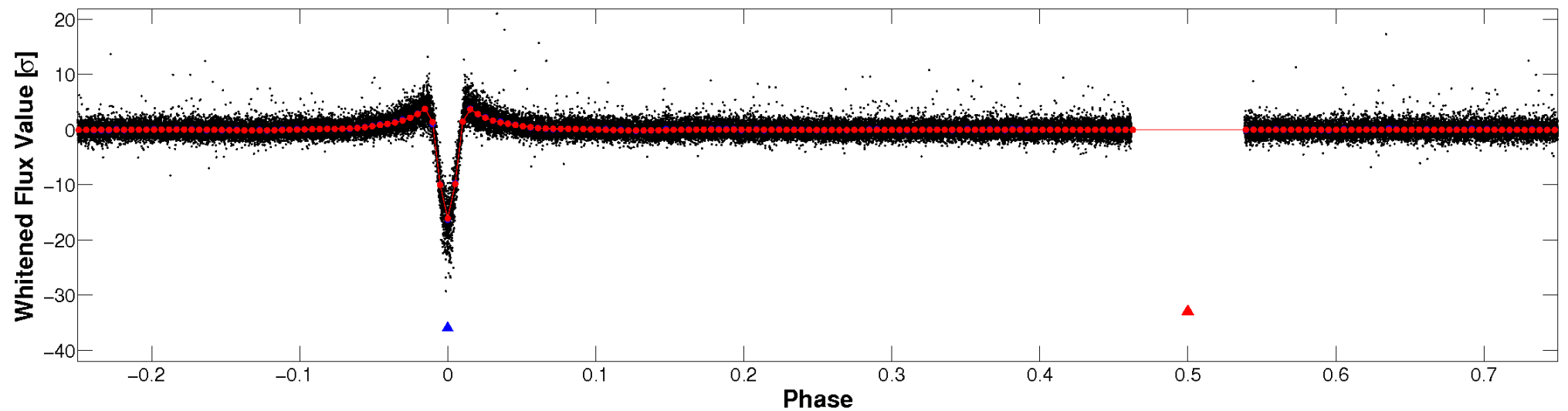


Non-Whitened Vs. Whitened Light Curve

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

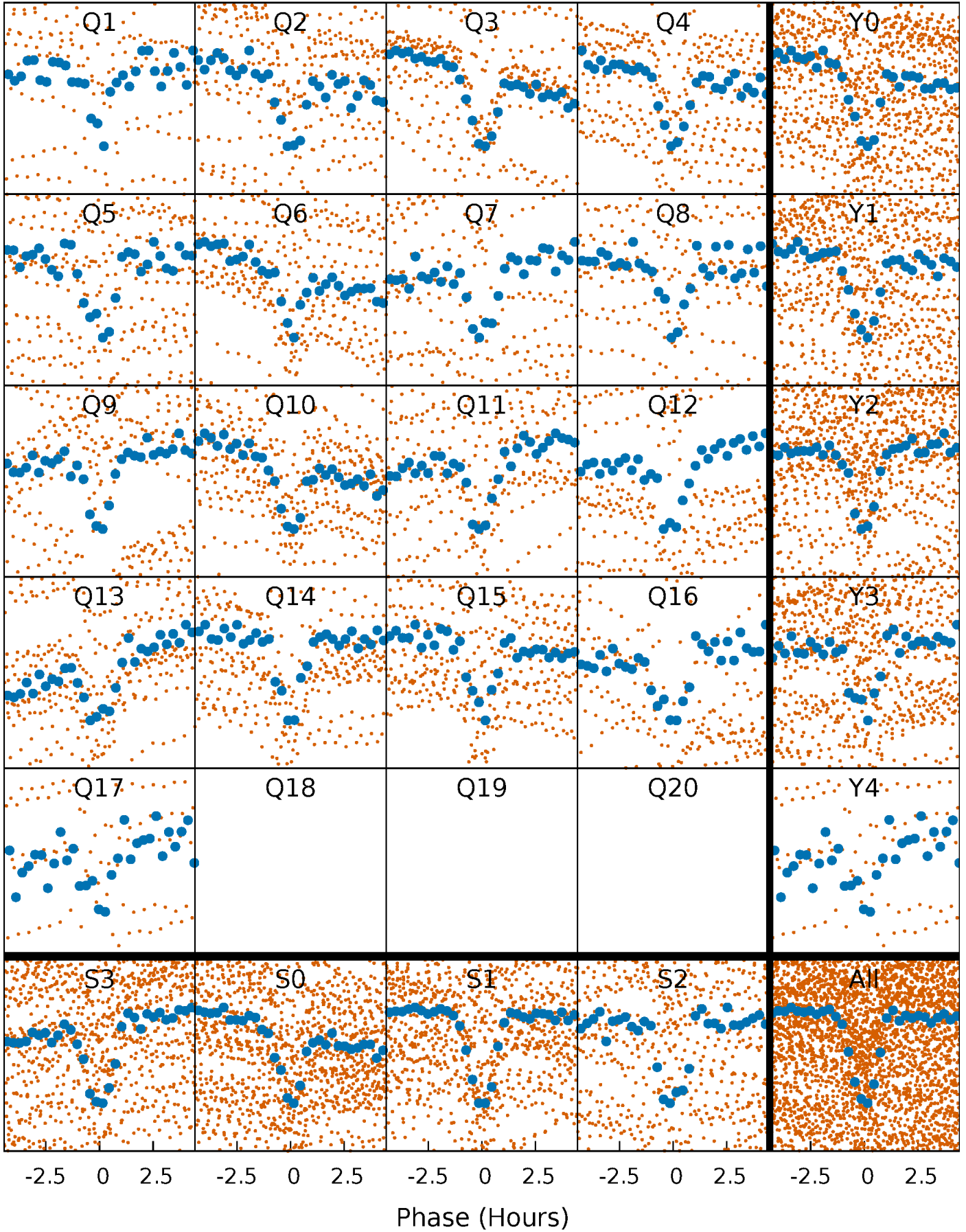


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



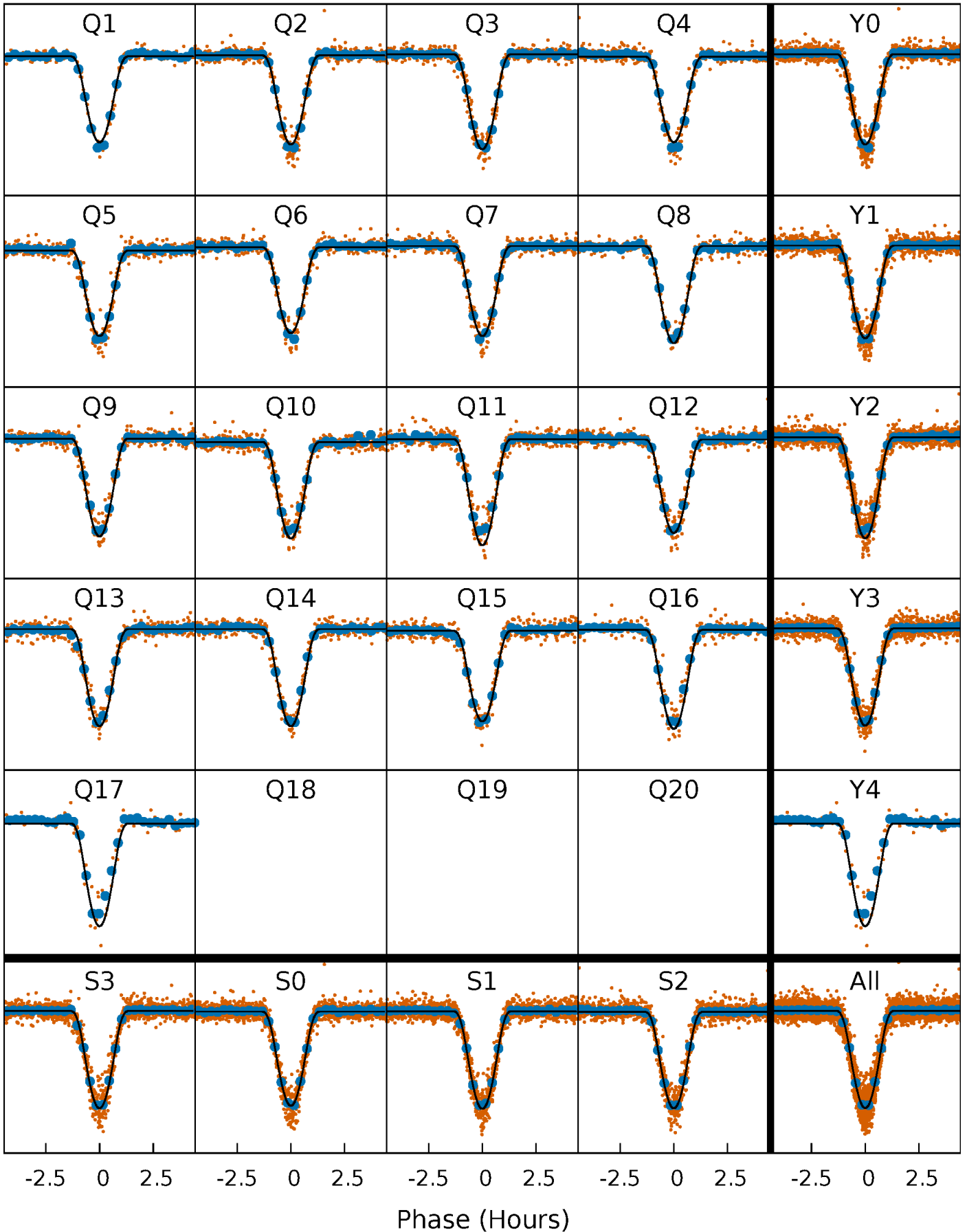
PDC Quarter-Phased Transit Curves

TCE 003427776-02 P= 4.016688 Days $T_0=132.231251$ (BKJD)



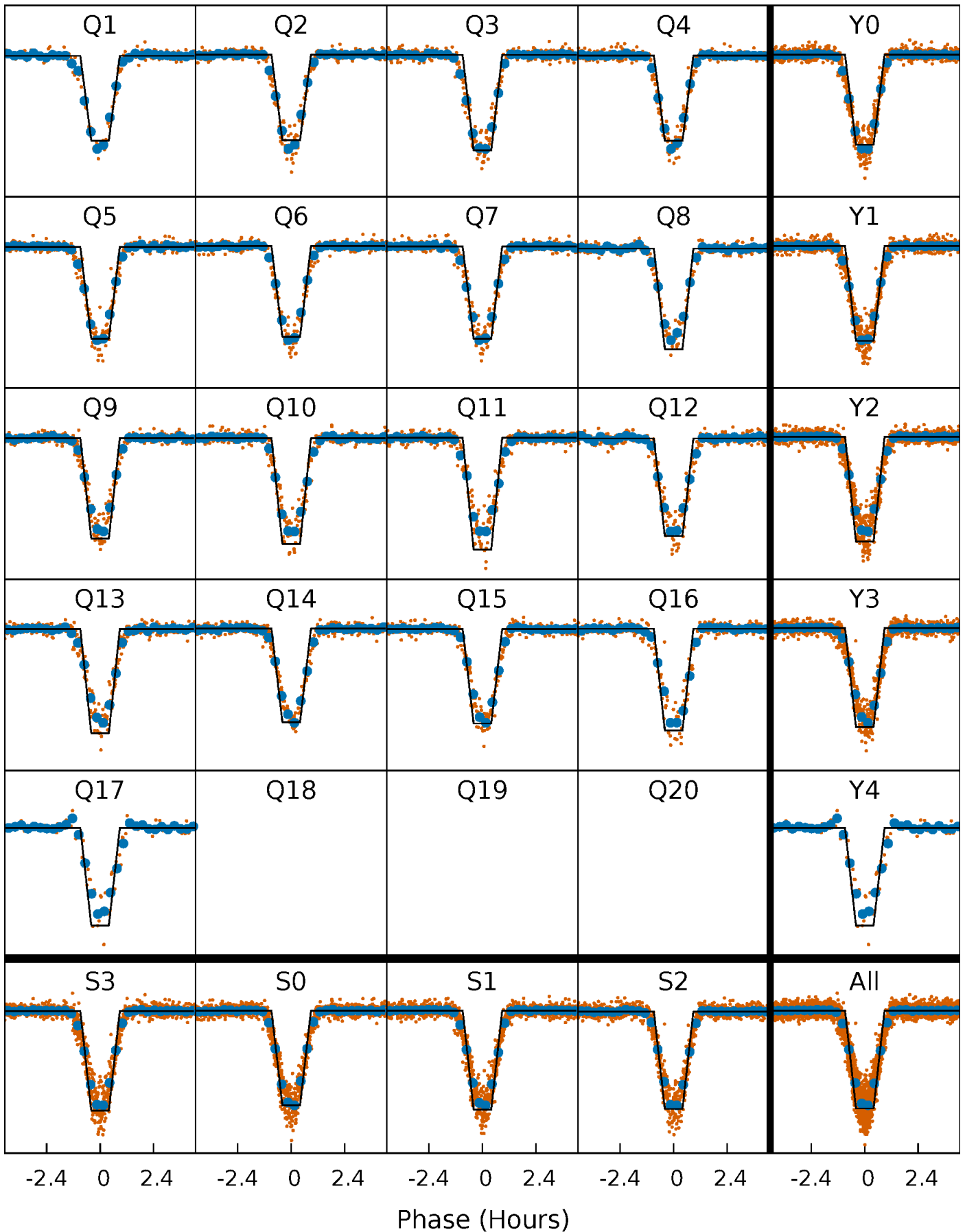
DV Quarter-Phased Transit Curves

TCE 003427776-02 $P = 4.016688$ Days $T_0 = 132.231251$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

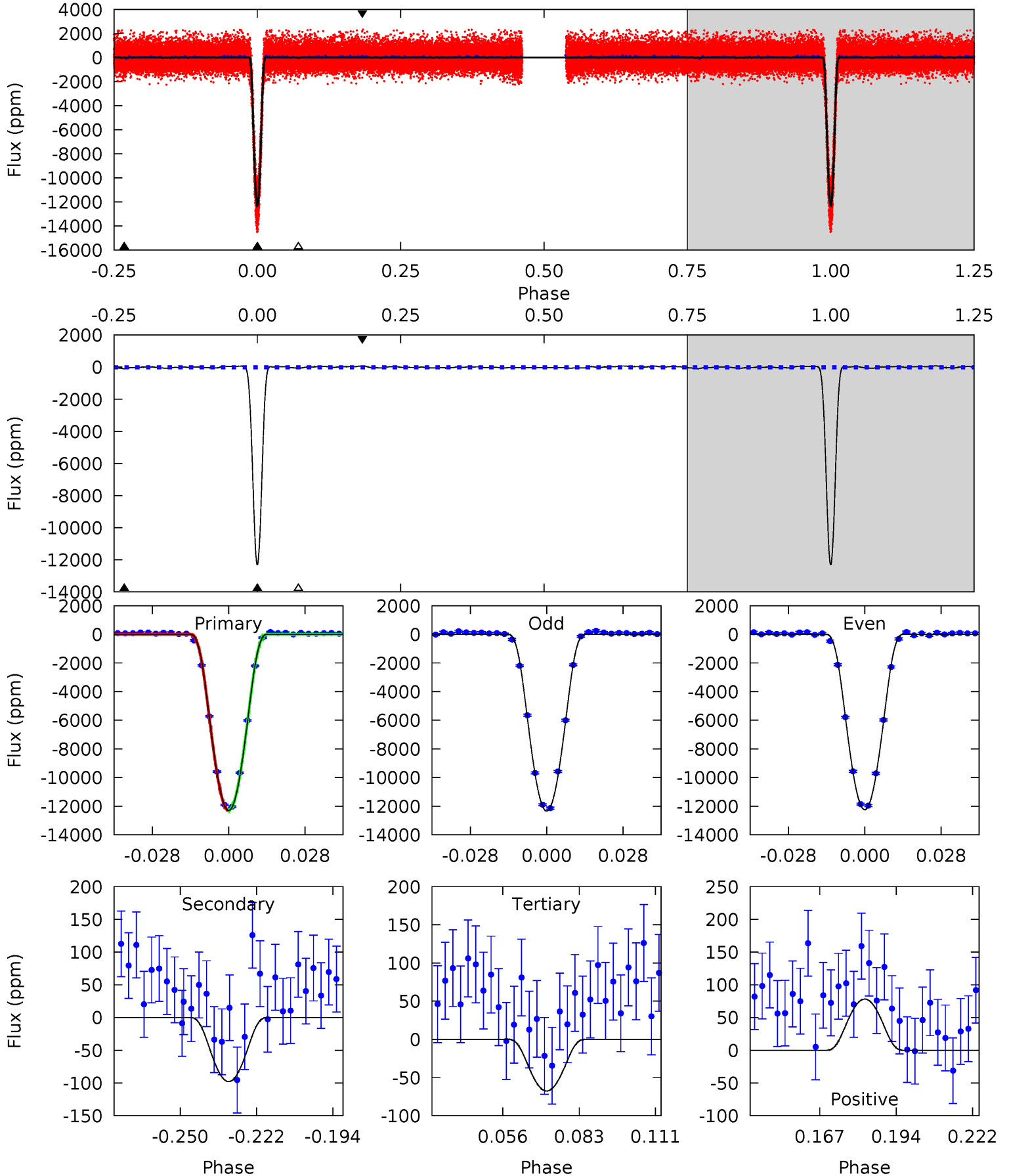
TCE 003427776-02 $P = 4.016666$ Days $T_0 = 132.234900$ (BKJD)



DV Model-Shift Uniqueness Test

003427776-02, P = 4.016688 Days, E = 128.214563 Days

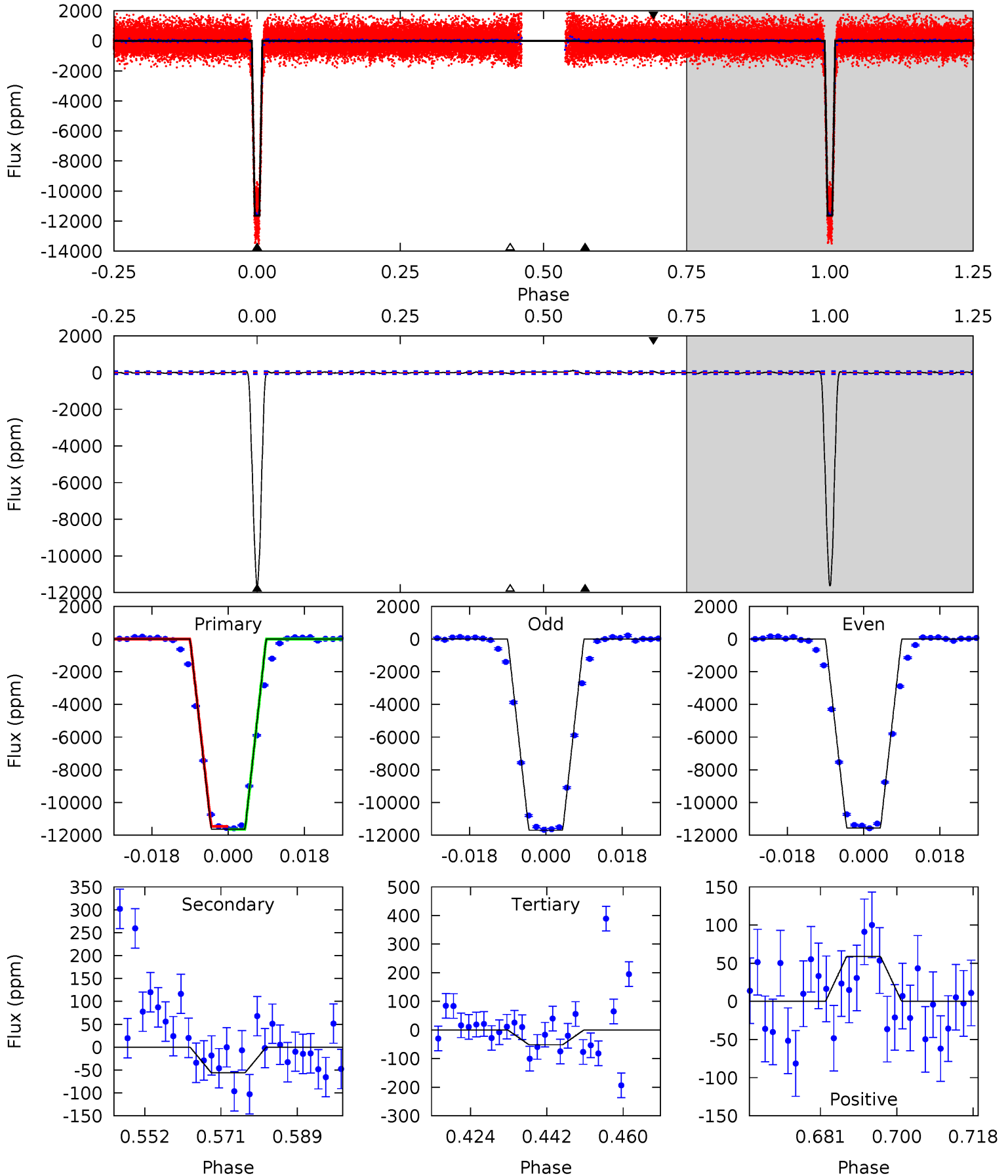
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
863.6	6.87	4.75	5.49	4.83	2.20	2.28	858.8	858.1	2.12	1.38	3.13	1.00	0.01	1.40



Alt Model-Shift Uniqueness Test

003427776-02, P = 4.016666 Days, E = 128.218234 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
715.9	3.44	3.17	3.62	4.91	2.36	1.36	712.7	712.3	0.27	-0.18	4.01	1.00	0.01	5.82



Stellar Parameters For KIC 003427776

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5448^{+178}_{-162}	$4.497^{+0.110}_{-0.110}$	$-0.500^{+0.350}_{-0.300}$	$0.794^{+0.125}_{-0.102}$	$0.721^{+0.112}_{-0.037}$	$2.032^{+0.980}_{-0.662}$
	+3%/-3%	+2%/-2%	+70%/-60%	+16%/-13%	+16%/-5%	+48%/-33%
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 003427776-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-98 ± 14	$15.43^{+2.71}_{-2.33}$	1423^{+71}_{-74}	1982^{+169}_{-326}	$0.454^{+0.180}_{-0.132}$
Alt.	-56 ± 16	$9.69^{+2.41}_{-2.19}$	1422^{+72}_{-66}	2166^{+213}_{-315}	$0.657^{+0.484}_{-0.285}$

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 $A_{obs} \gg 1.0$

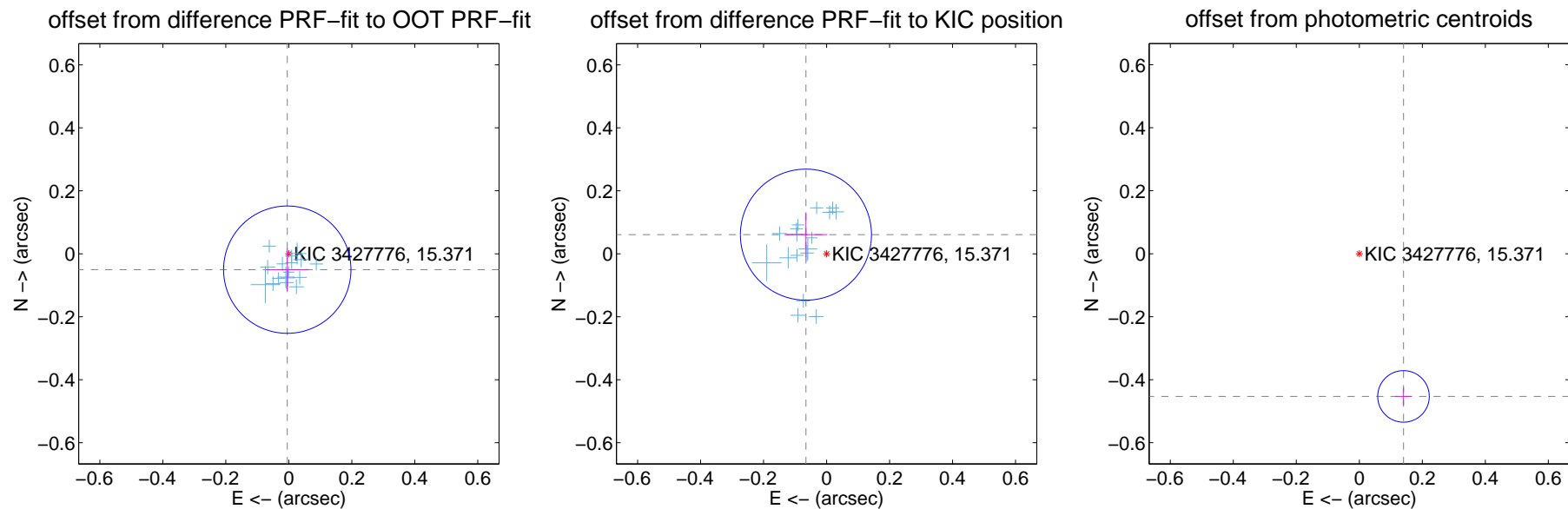
DV Centroid Data

Supplemental centroid analysis for 003427776-02. Kepler magnitude: 15.37. Transit SNR 382.17

There are 17 quarters with good PRF difference image offsets

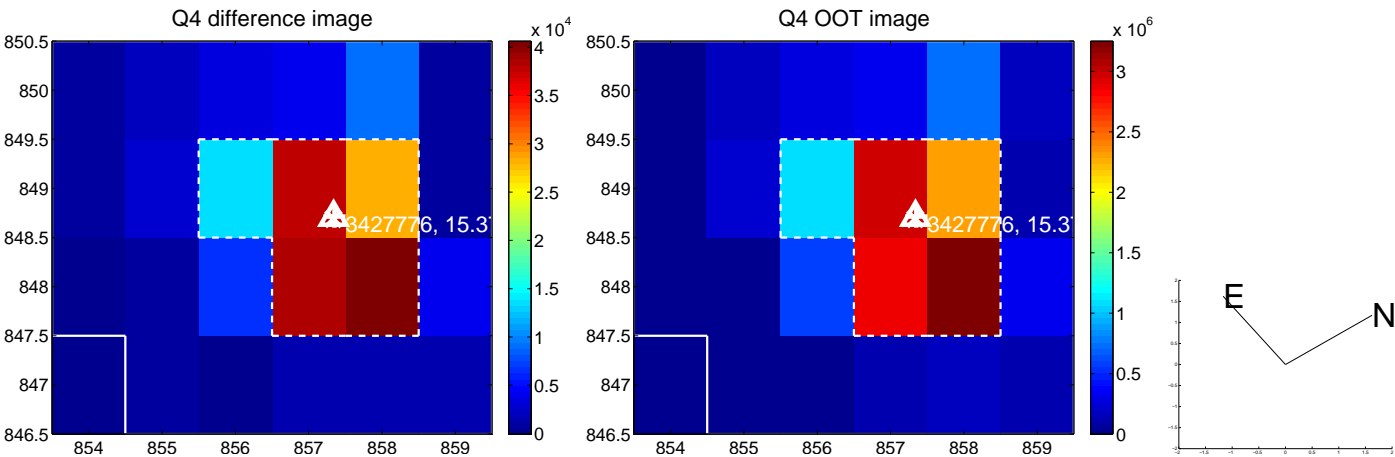
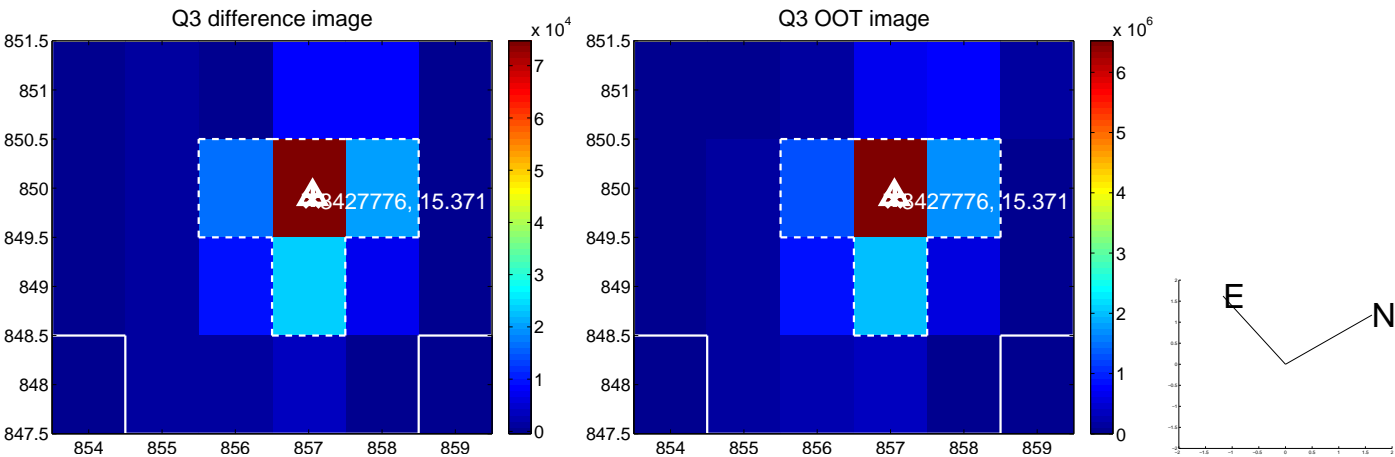
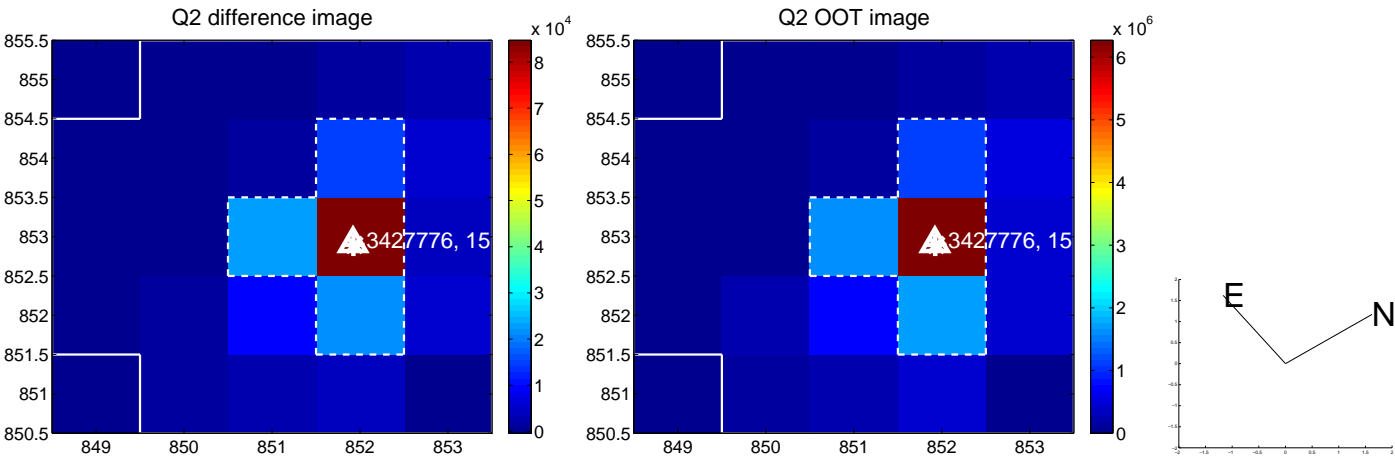
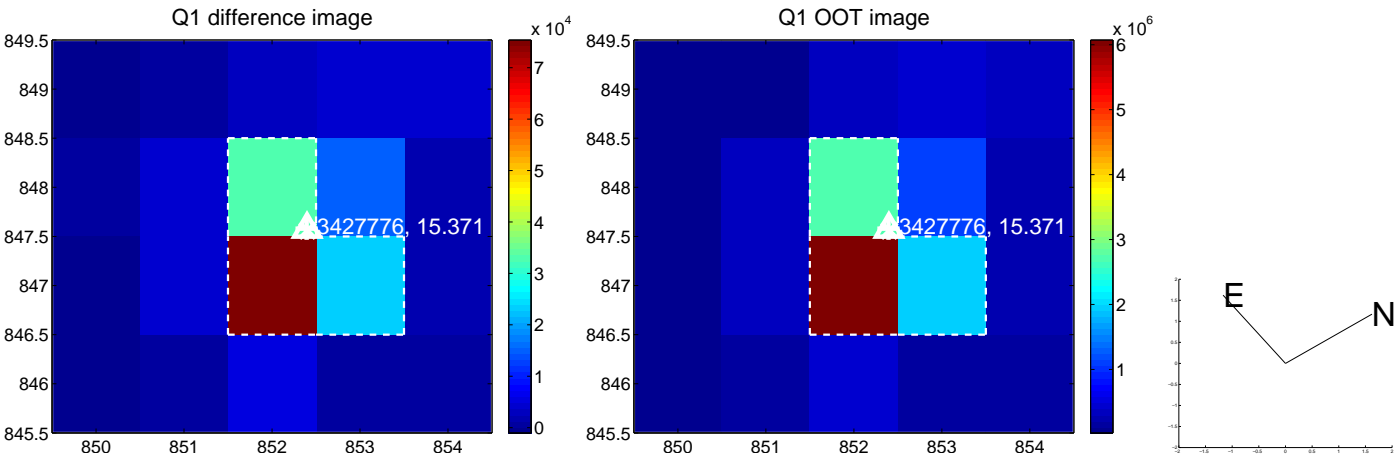
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.067	0.75	0.005 ± 0.067	-0.050 ± 0.067
PRF-fit source offset from KIC position	0.089 ± 0.069	1.29	0.066 ± 0.068	0.061 ± 0.071
photometric centroid source offset	0.47 ± 0.03	17.38	-0.14 ± 0.03	-0.45 ± 0.03

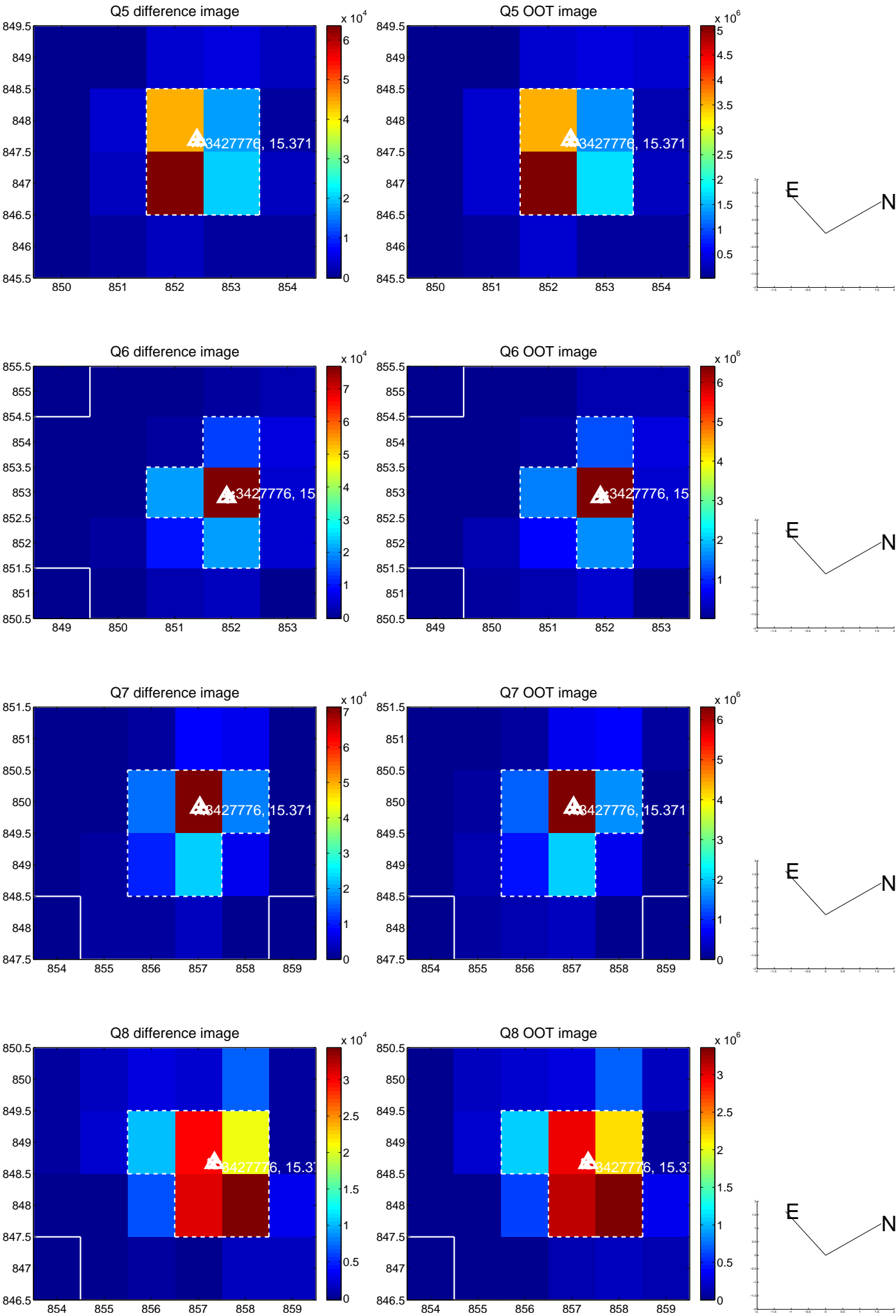


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

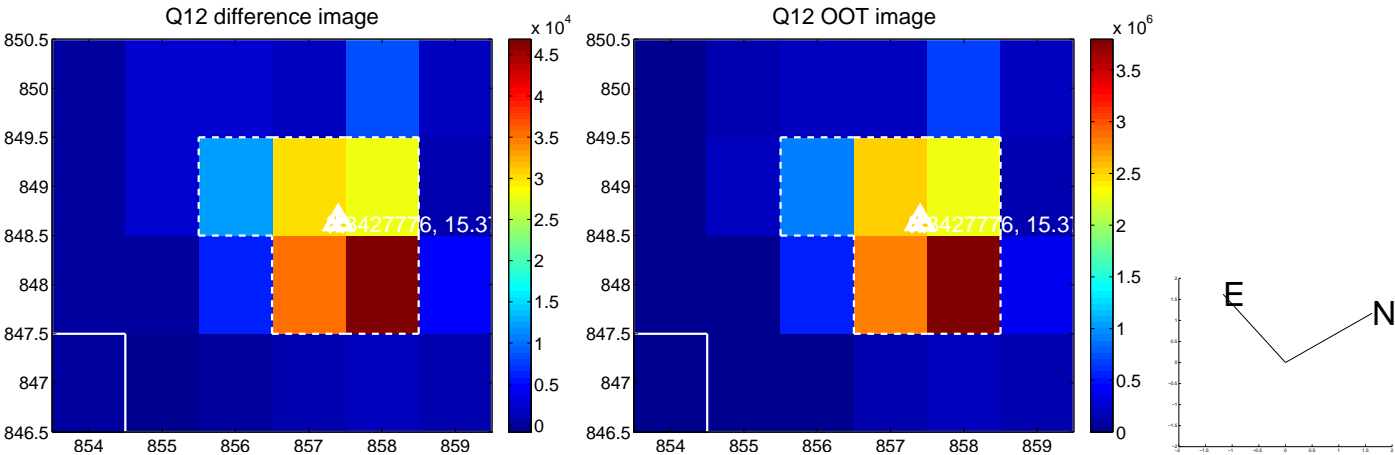
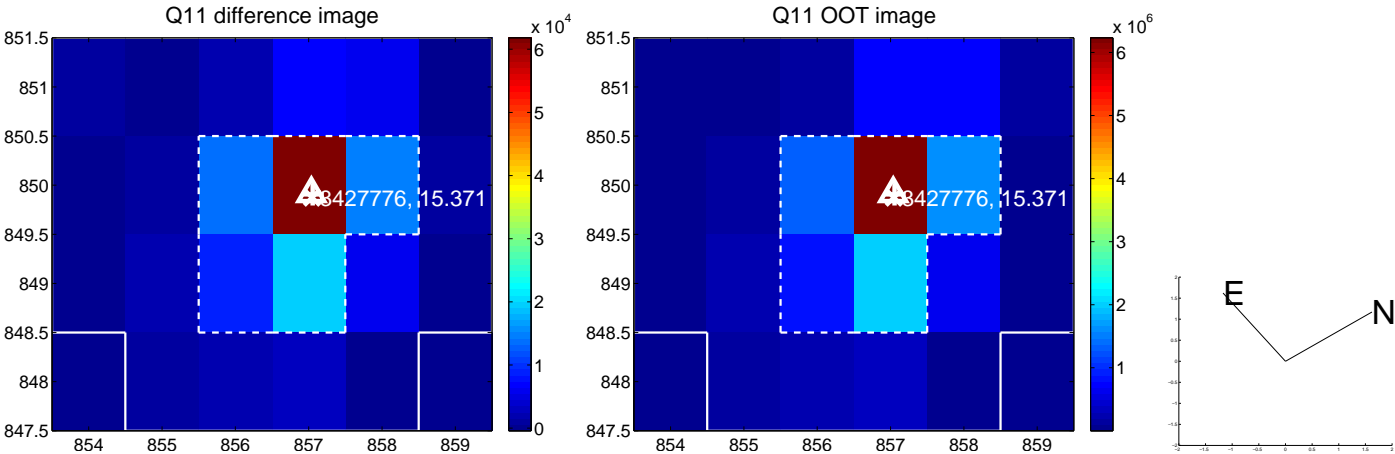
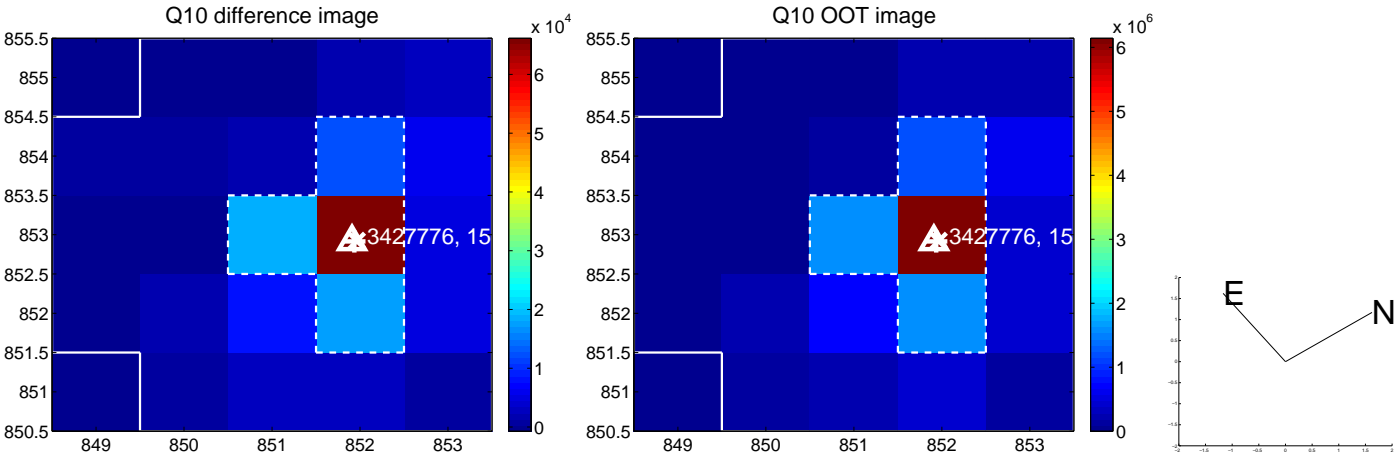
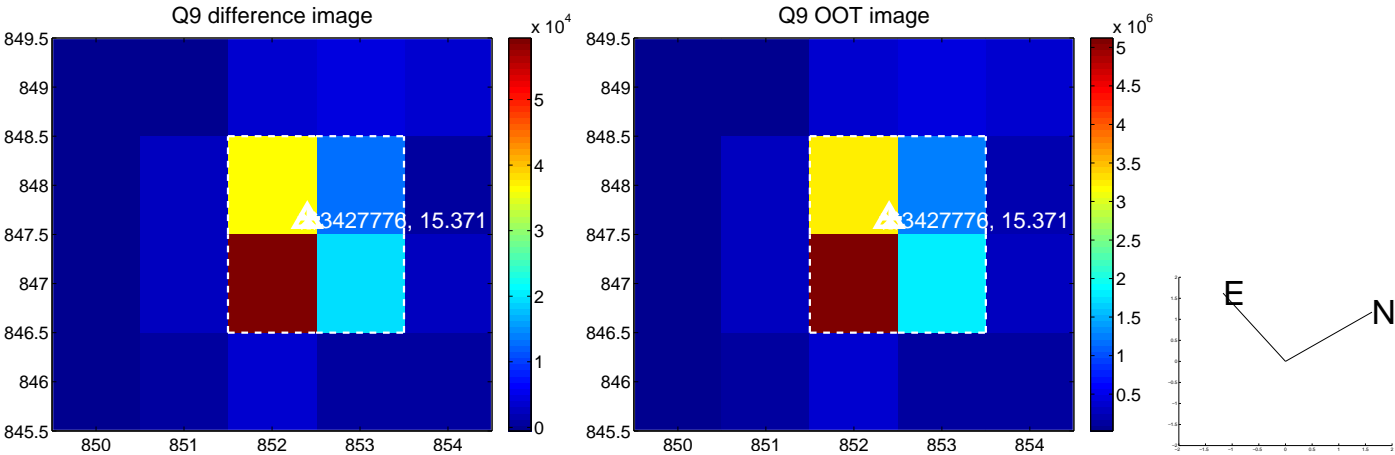
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



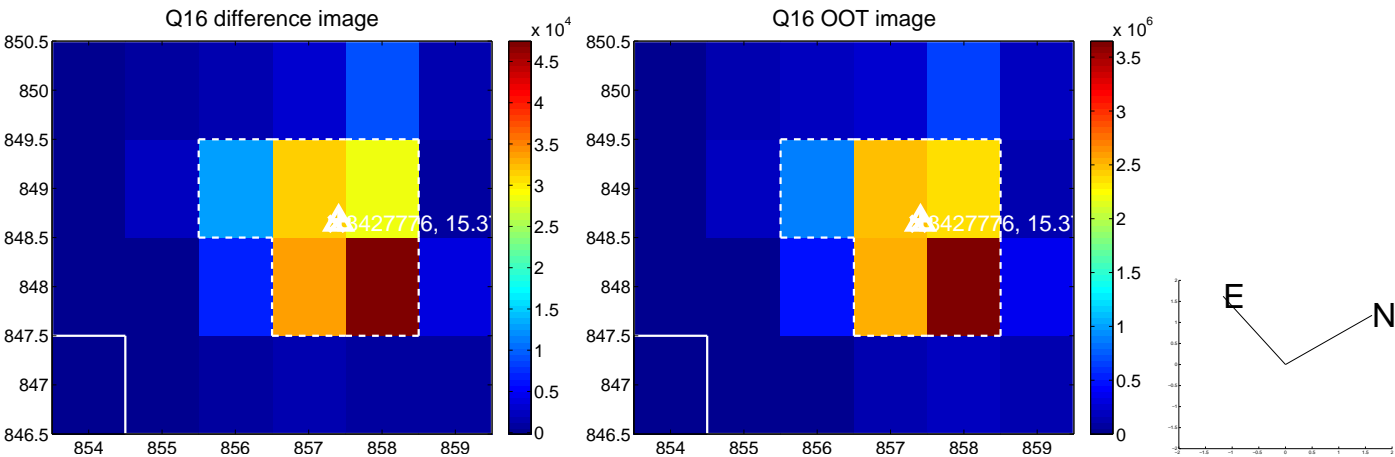
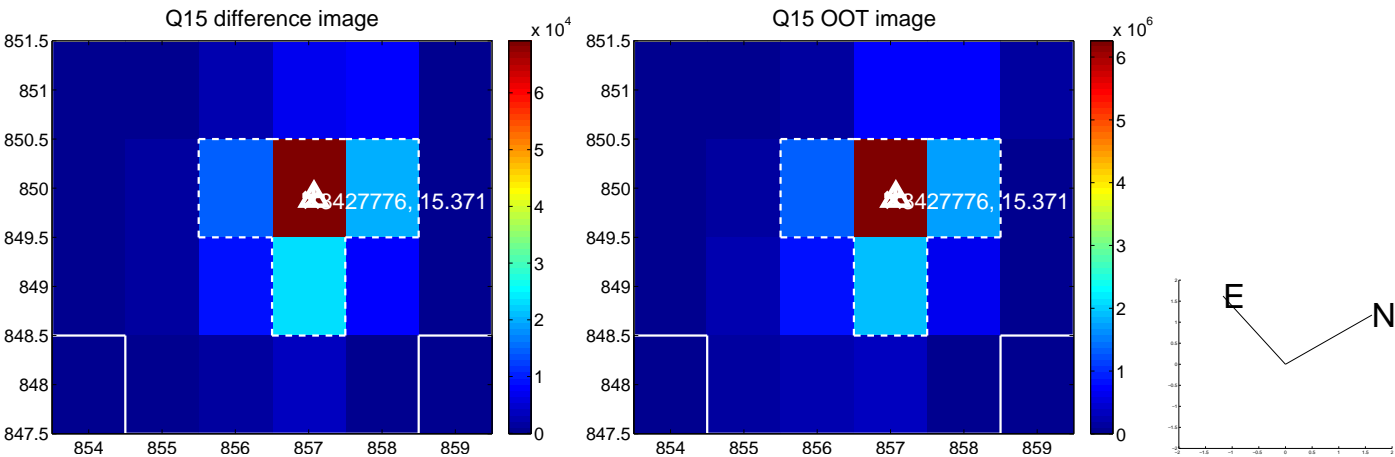
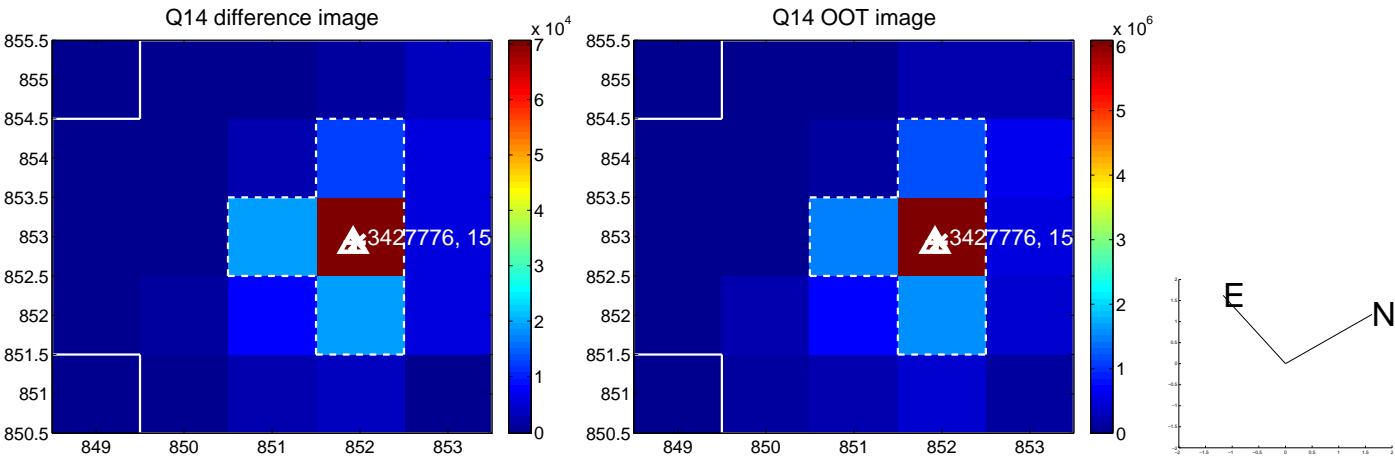
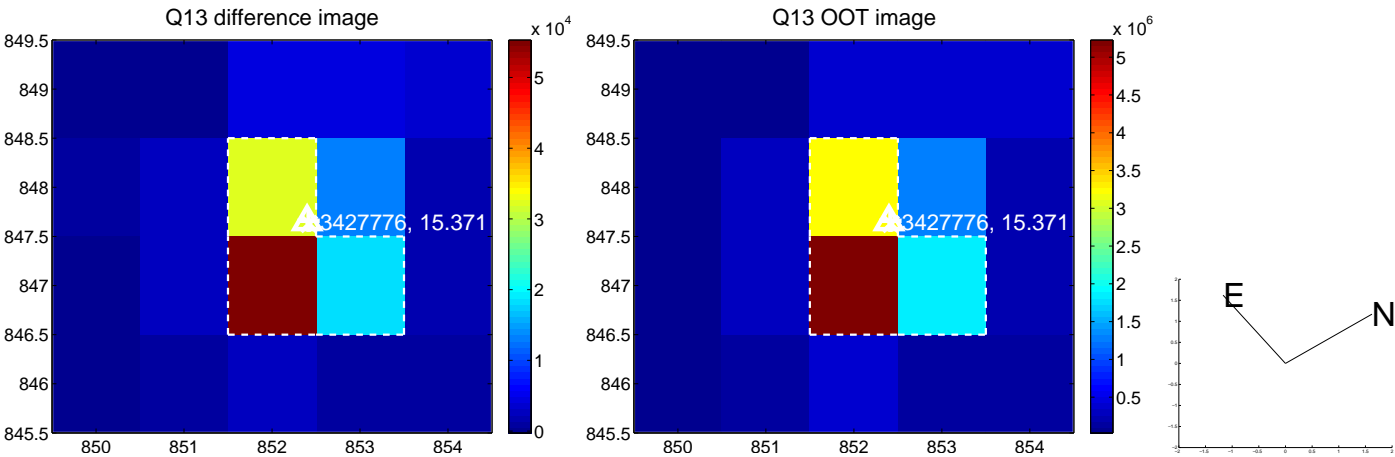
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



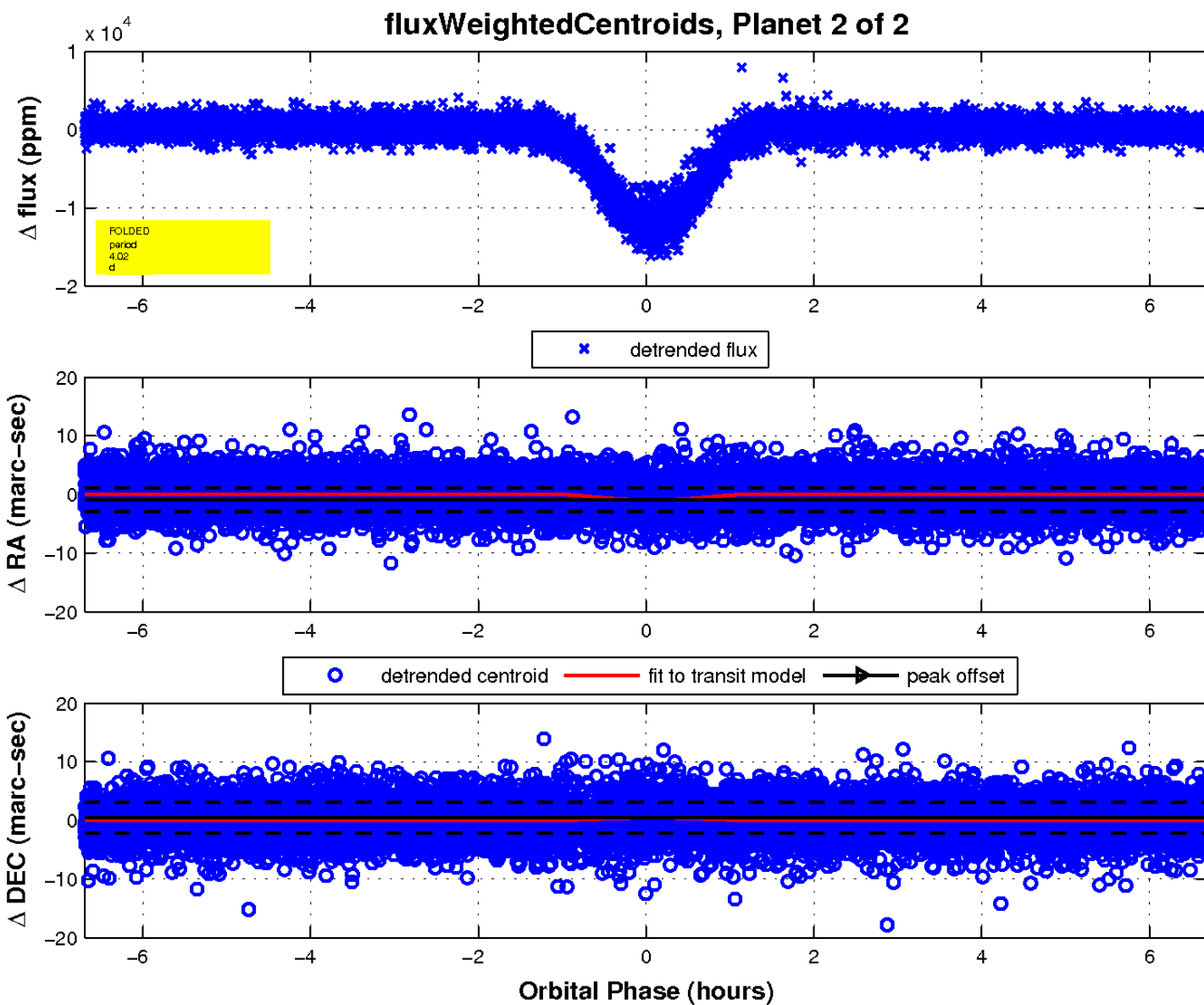
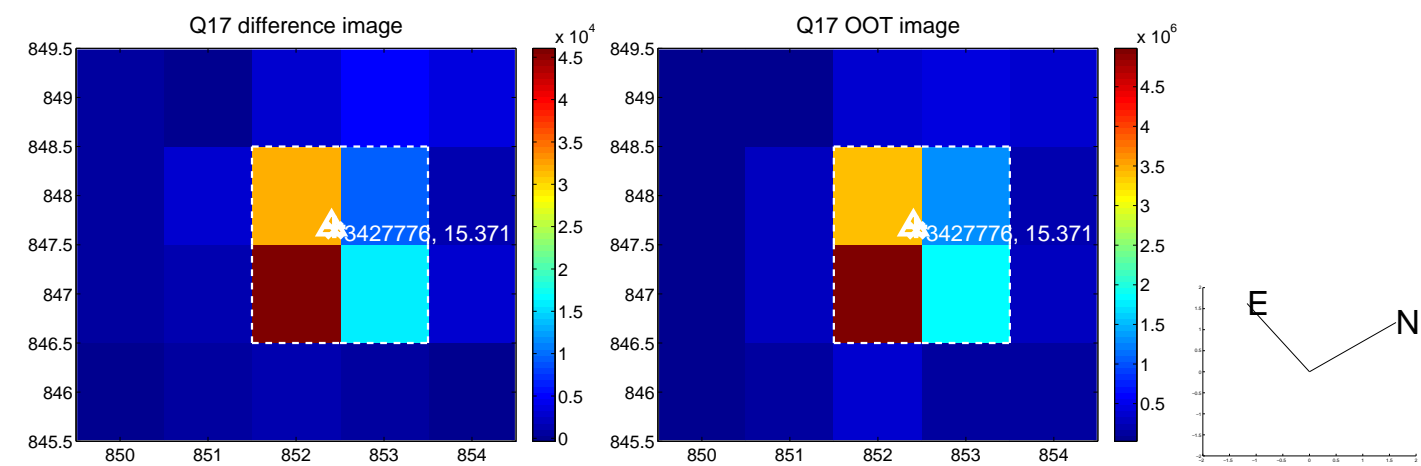
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

