

KIC 011875511

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})
011875511-01	OBS	3471.01	67.451554	167.511679	14066.6	3.507	409.0	332.6	2.19	4847	48.11	23.65
011875511-02	OBS	No	67.451117	151.966343	6943.9	8.855	229.2	223.2	2.19	4847	31.40	23.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011875511-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
011875511-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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 011875511-01

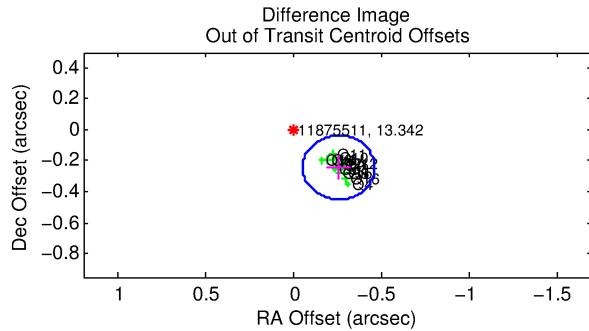
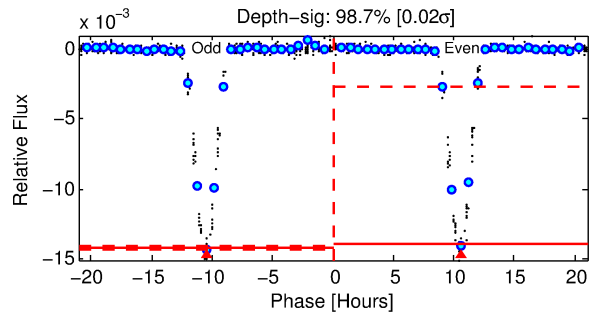
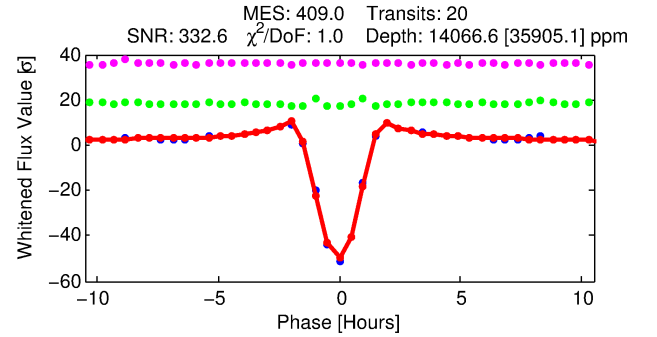
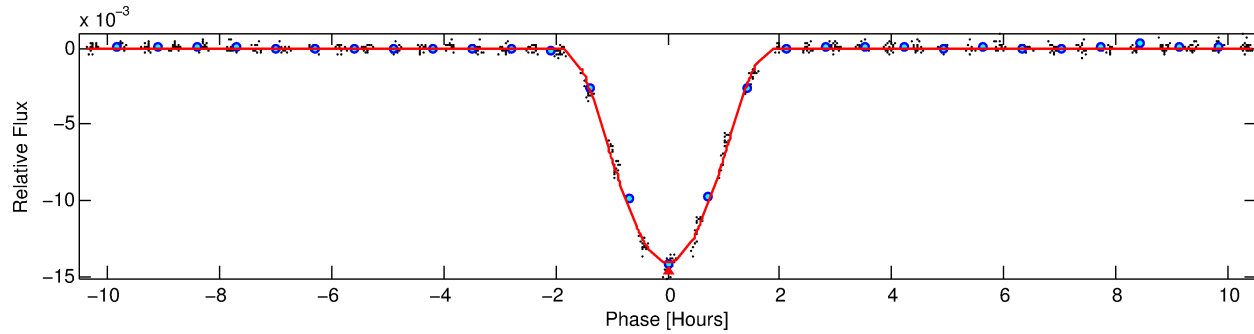
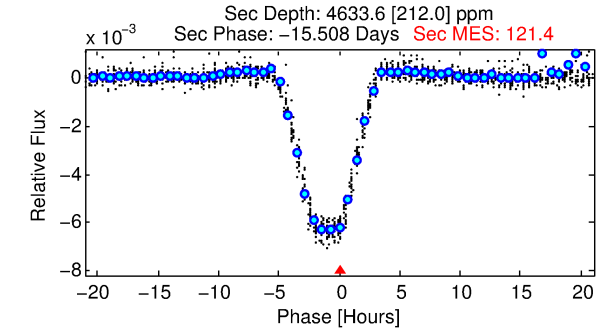
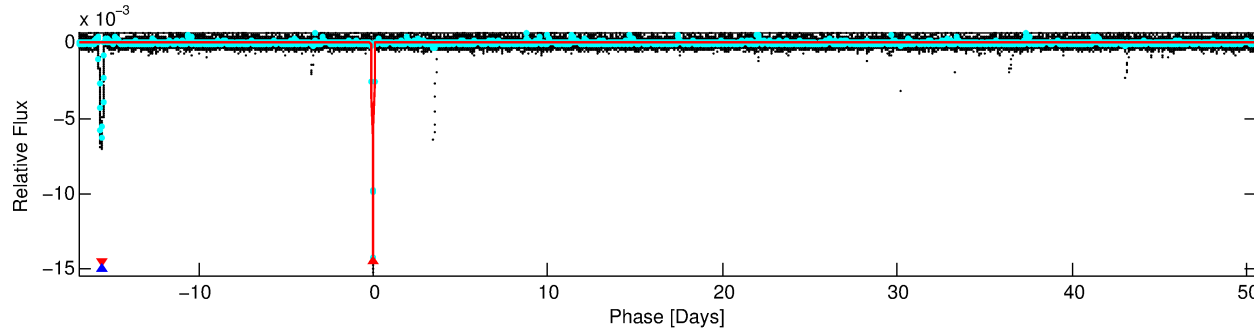
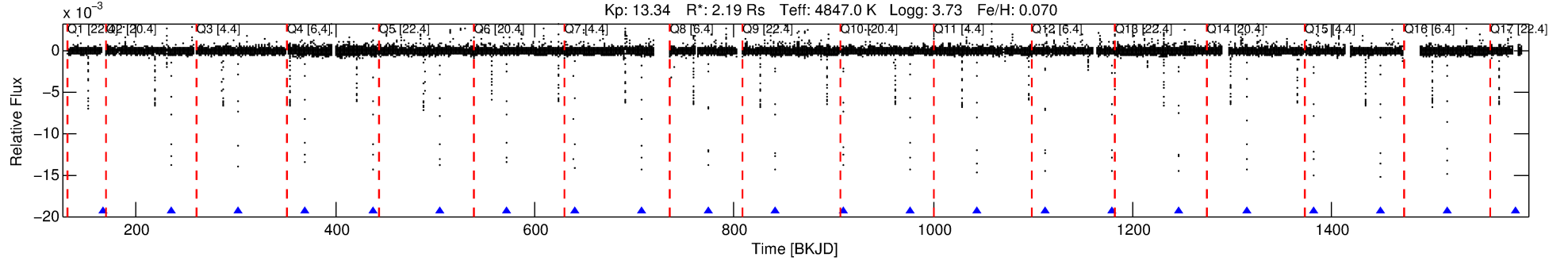
No Significant Match Found

DV One-Page Summary

KIC: 11875511 Candidate: 1 of 2 Period: 67.452 d

KOI: K03471 Corr: No Ephemeris Match

Kp: 13.34 R*: 2.19 Rs Teff: 4847.0 K Logg: 3.73 Fe/H: 0.070



DV Fit Results:

Period = 67.45155 [0.00002] d
Epoch = 167.5117 [0.0002] BKJD
Rp/R* = 0.2012 [0.0358]
a/R* = 97.81 [1.87]
b = 1.00 [0.27]
Seff = 23.65 [32.50]
Teq = 562 [193] K
Rp = 48.11 [34.35] Re
a = 0.3168 [0.2511] AU
Ag = 110.51 [156.44] [0.70σ]
Teffp = 2819 [265] K [6.89σ]

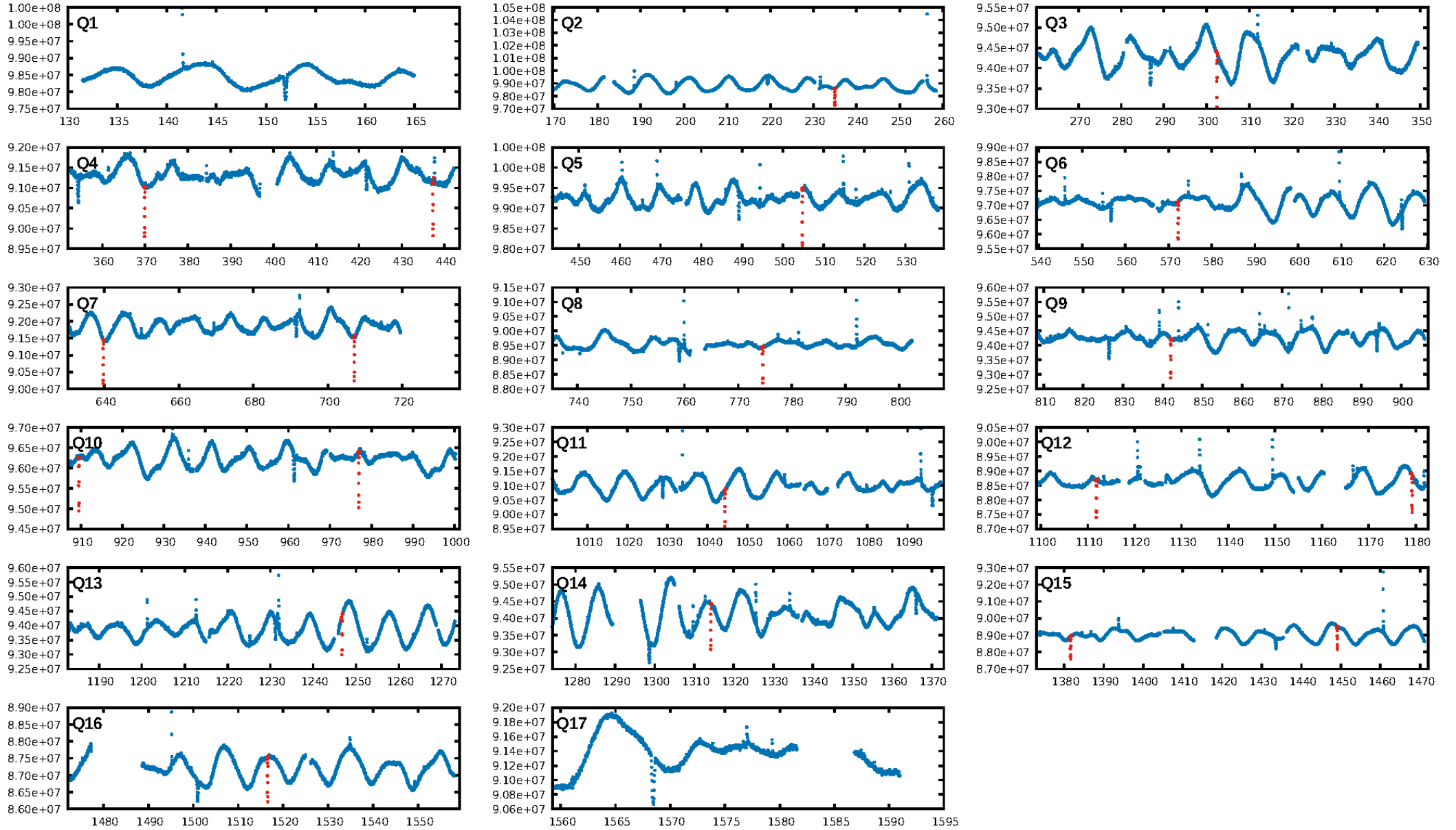
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.4%
ModelChiSquareGof-sig: 77.6%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: 2.931
Centroid-sig: 0.0%
Centroid-so: 0.230 arcsec [10.20σ]
OotOffset-rm: 0.352 arcsec [5.11σ]
KicOffset-rm: 0.149 arcsec [2.13σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

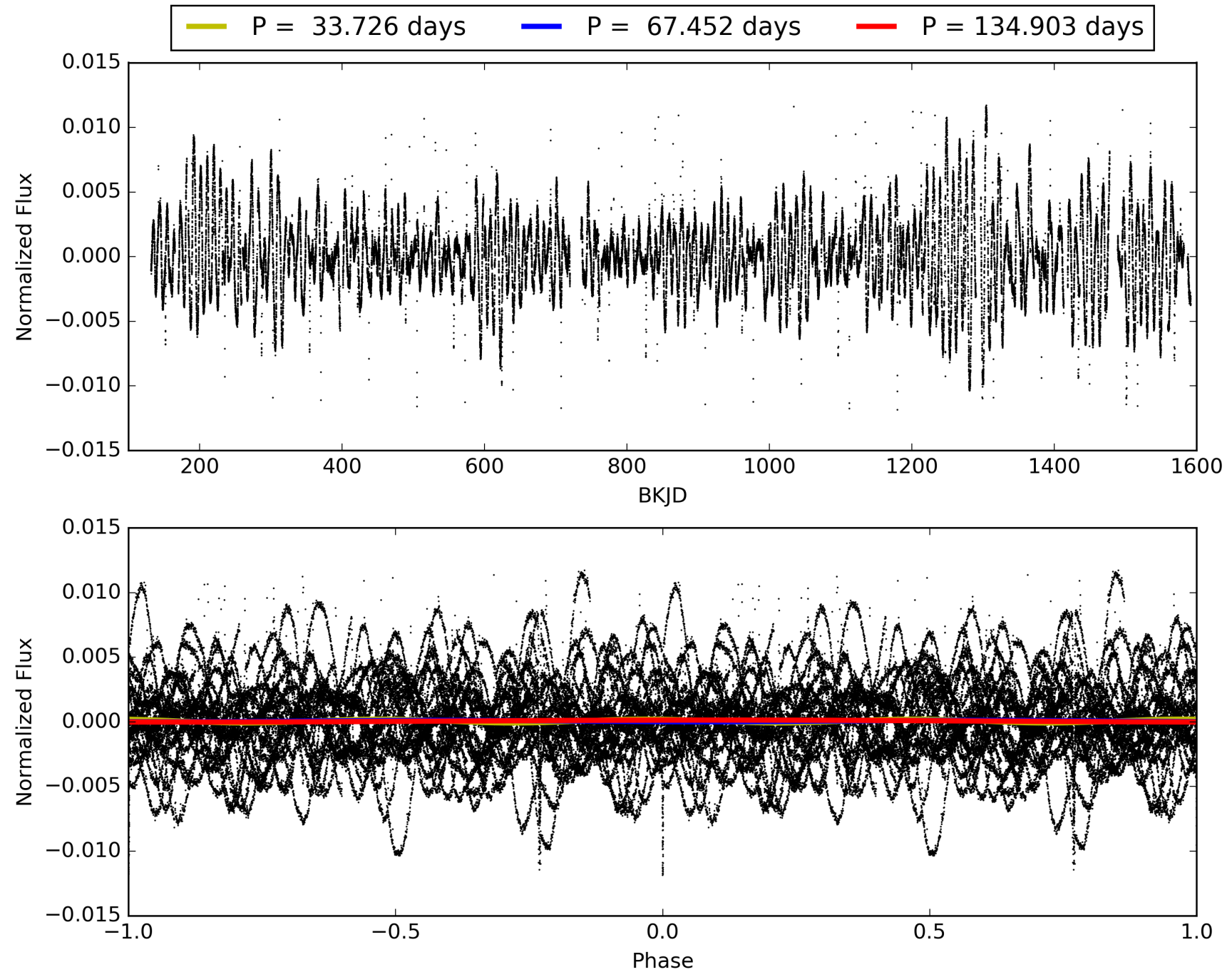
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:44:08 Z

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

TCE 011875511-01, PDC Light Curves

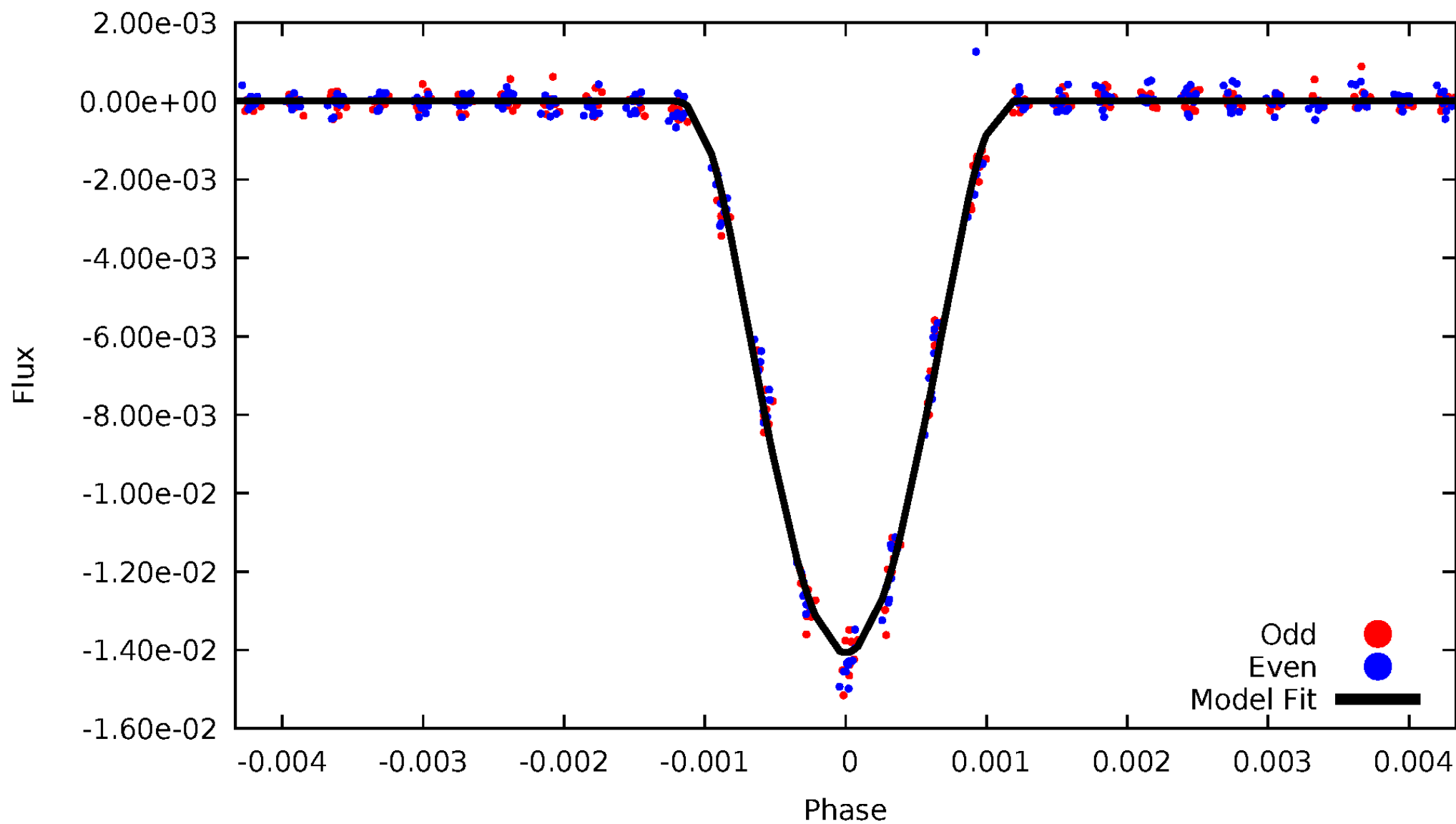


TCE 011875511-01



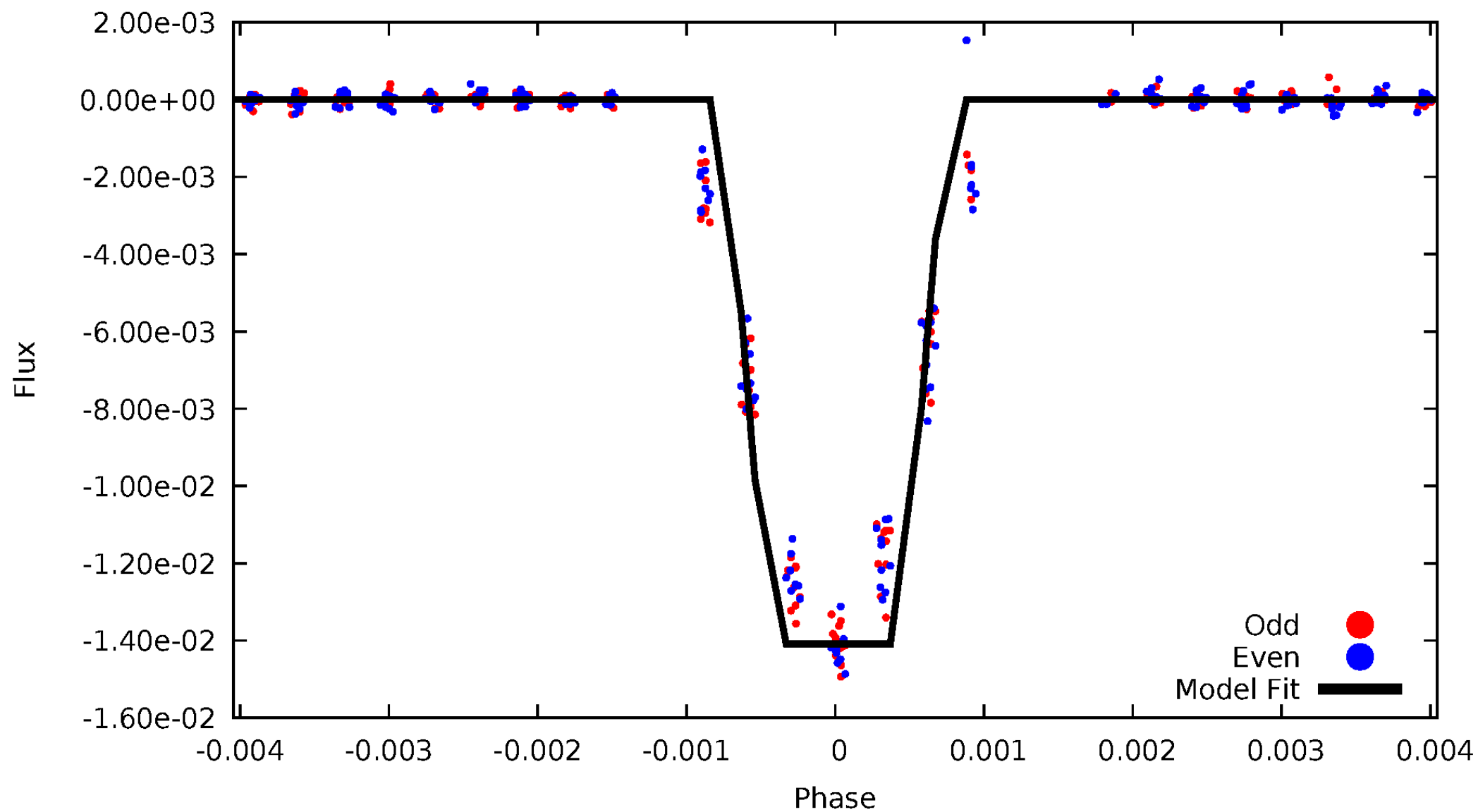
DV Odd/Even

TCE 011875511-01



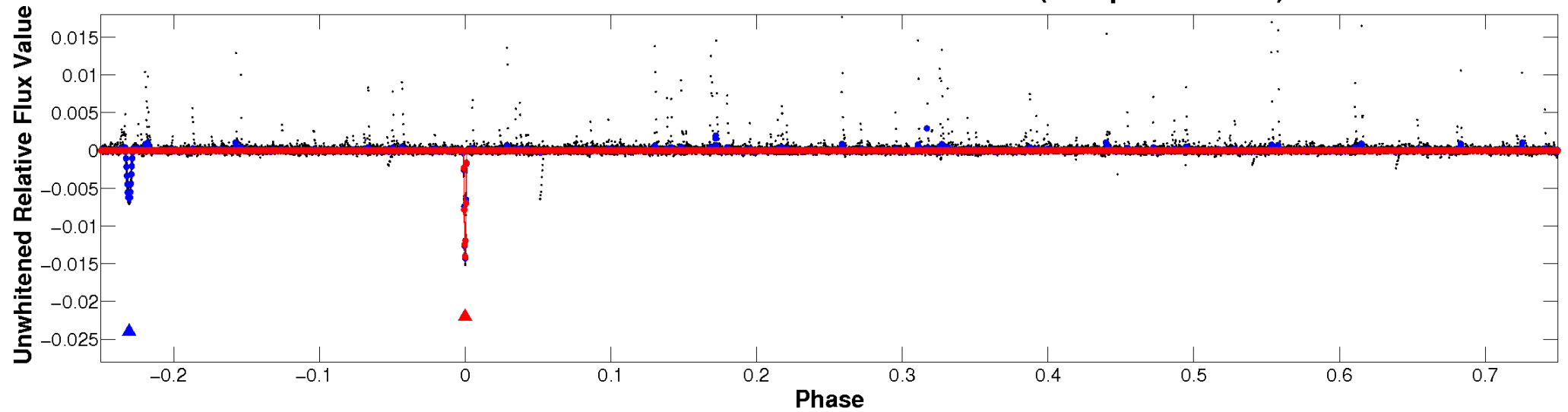
ALT Odd/Even

TCE 011875511-01

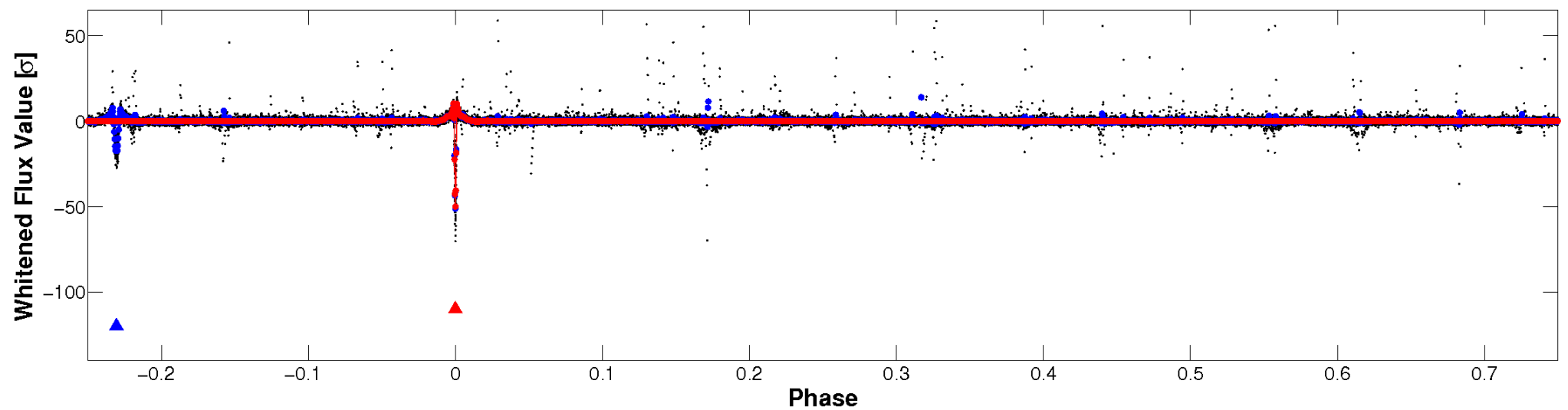


Non-Whitened Vs. Whitened Light Curve

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

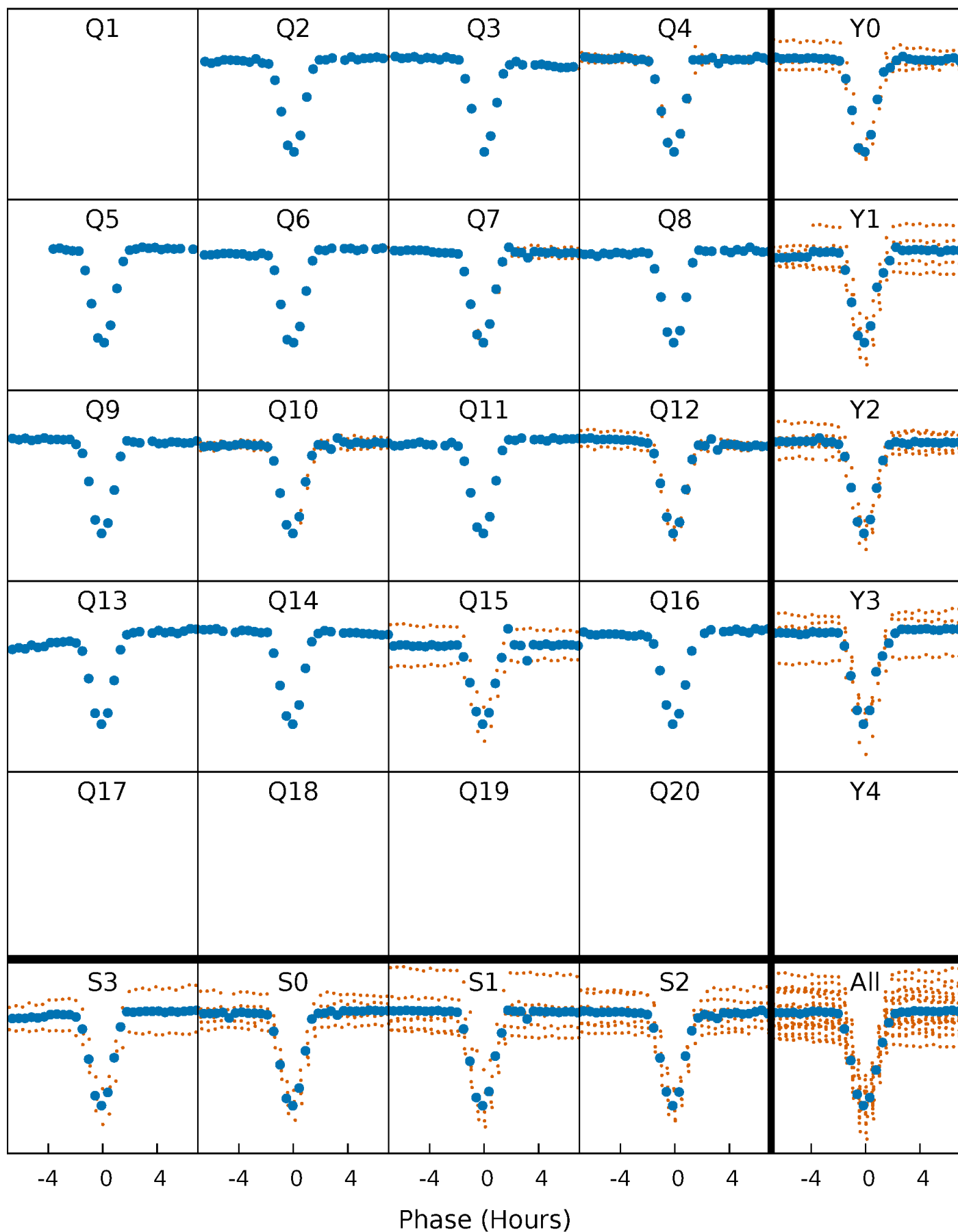


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



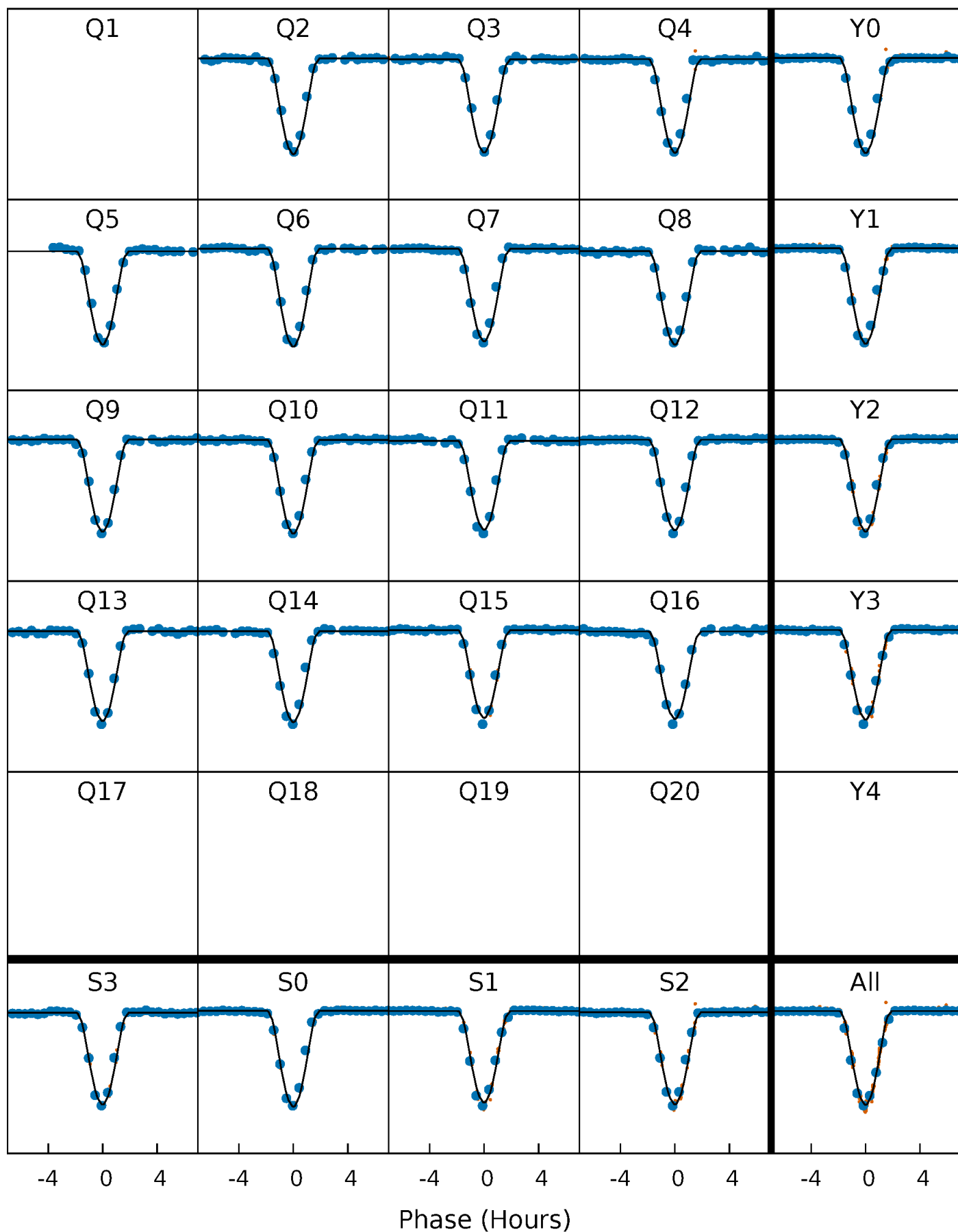
PDC Quarter-Phased Transit Curves

TCE 011875511-01 P= 67.451554 Days $T_0=167.511679$ (BKJD)



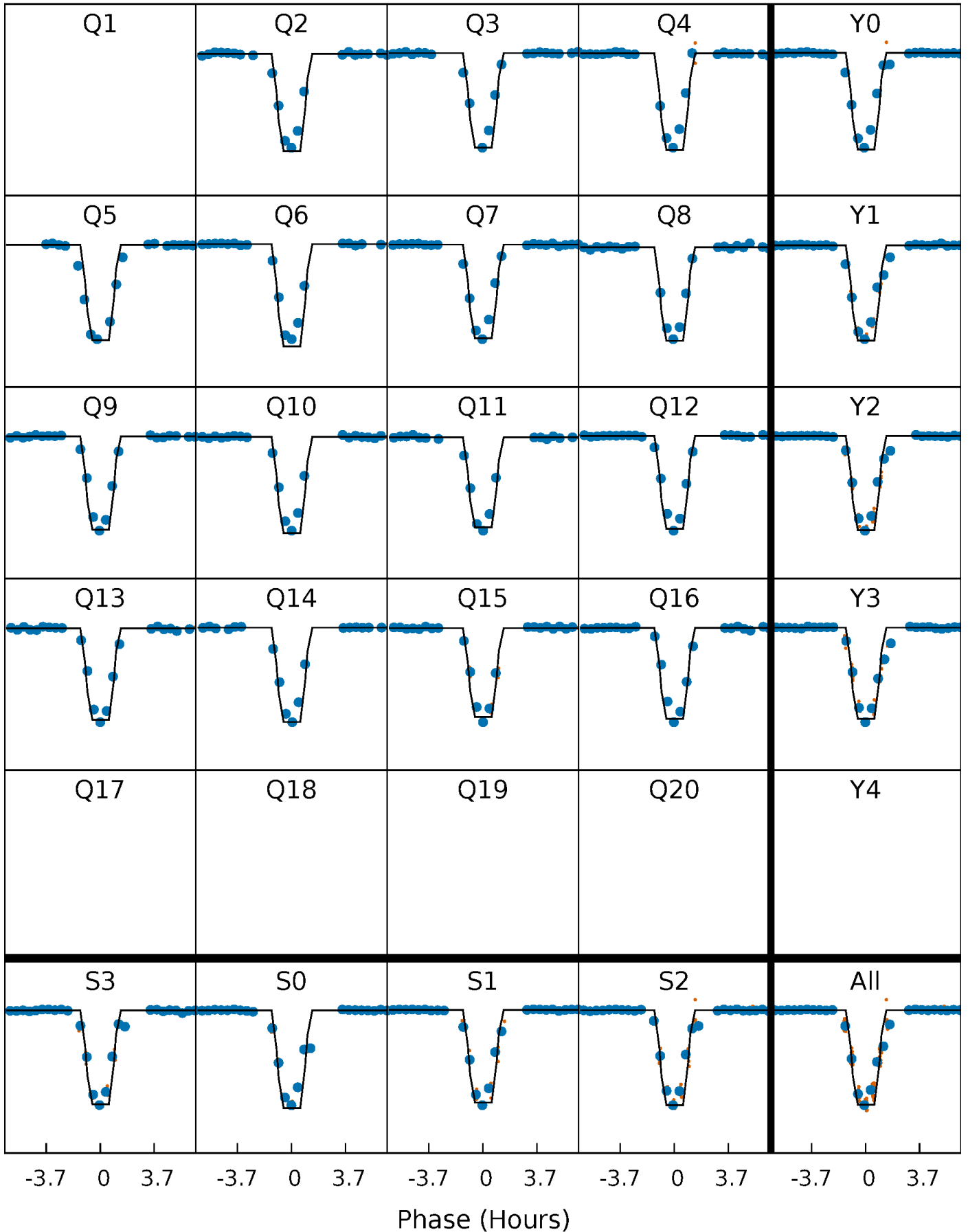
DV Quarter-Phased Transit Curves

TCE 011875511-01 P= 67.451554 Days $T_0=167.511679$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

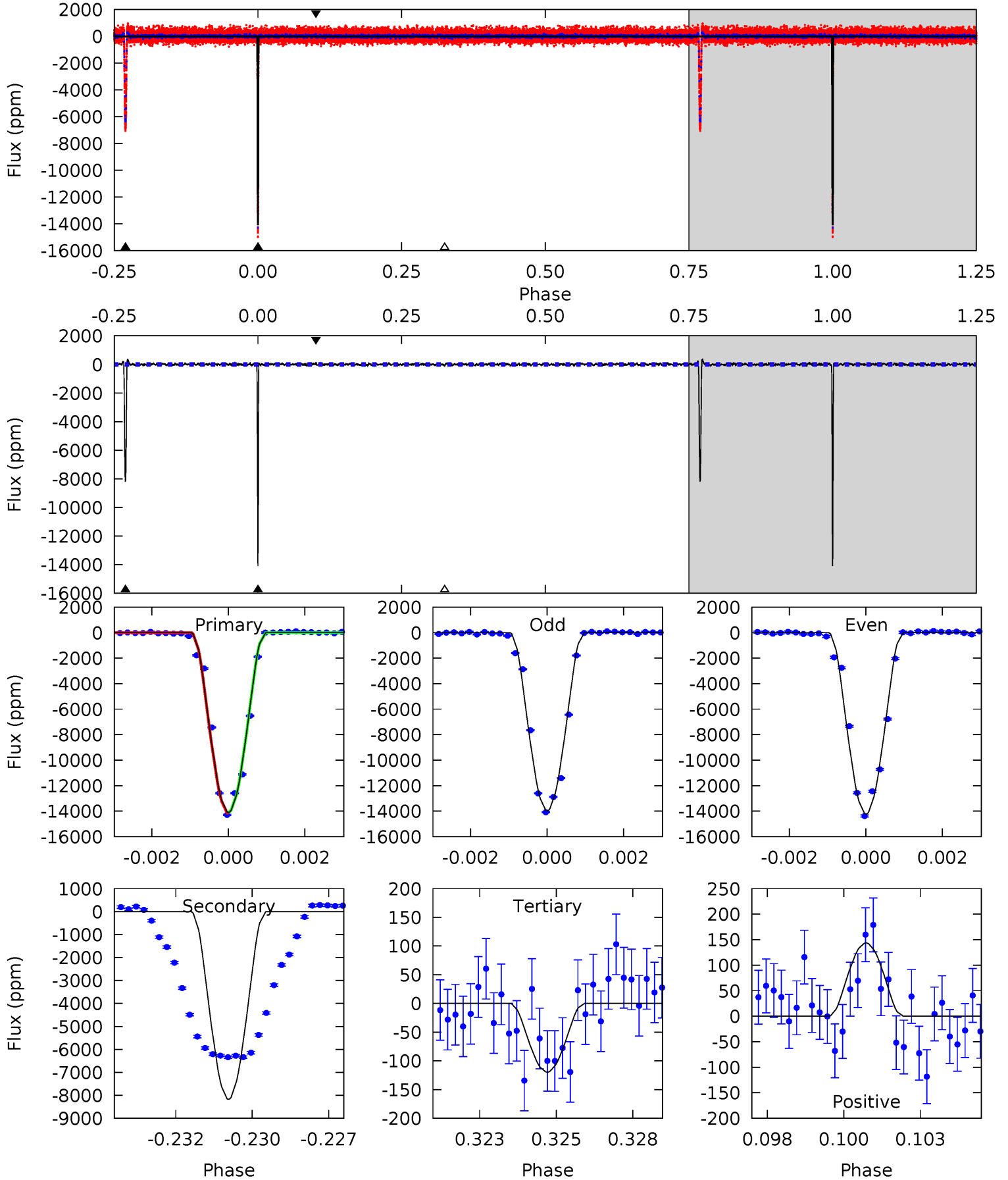
TCE 011875511-01 P= 67.451121 Days $T_0=167.516372$ (BKJD)



DV Model-Shift Uniqueness Test

011875511-01, P = 67.451554 Days, E = 100.060125 Days

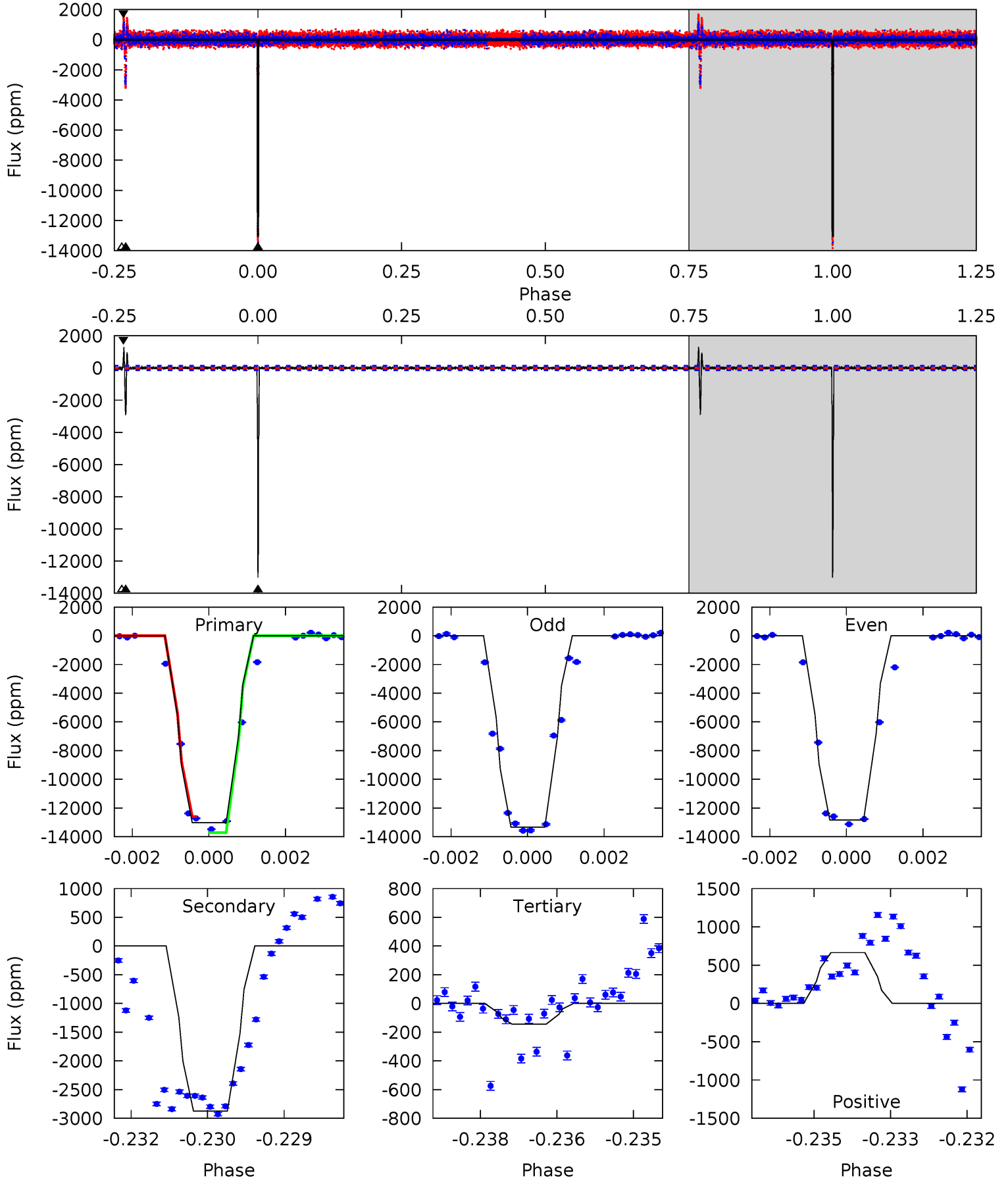
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
859.9	498.7	7.30	8.76	5.29	3.03	2.50	852.6	851.2	491.4	490.0	7.83	1.00	0.02	1.61



Alt Model-Shift Uniqueness Test

011875511-01, P = 67.451121 Days, E = 100.065251 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
517.7	114.2	5.74	26.4	5.38	3.17	2.70	511.9	491.3	108.5	87.8	9.93	0.99	0.09	0



Stellar Parameters For KIC 011875511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4847^{+134}_{-122}	$3.726^{+0.840}_{-0.360}$	$0.070^{+0.250}_{-0.250}$	$2.191^{+1.240}_{-1.515}$	$0.930^{+0.224}_{-0.183}$	$0.125^{+2.487}_{-0.093}$
	+3%/-3%	+23%/-10%	+357%/-357%	+57%/-69%	+24%/-20%	+1996%/-75%
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 011875511-01 / KOI 3471.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8174 ± 16	$46.70^{+19.85}_{-18.05}$	778^{+122}_{-148}	3633^{+255}_{-219}	211^{+356}_{-107}
Alt.	-2874 ± 25	$26.75^{+14.34}_{-12.02}$	781^{+120}_{-151}	3630^{+510}_{-310}	223^{+501}_{-127}

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 $A_{obs} \gg 1.0$

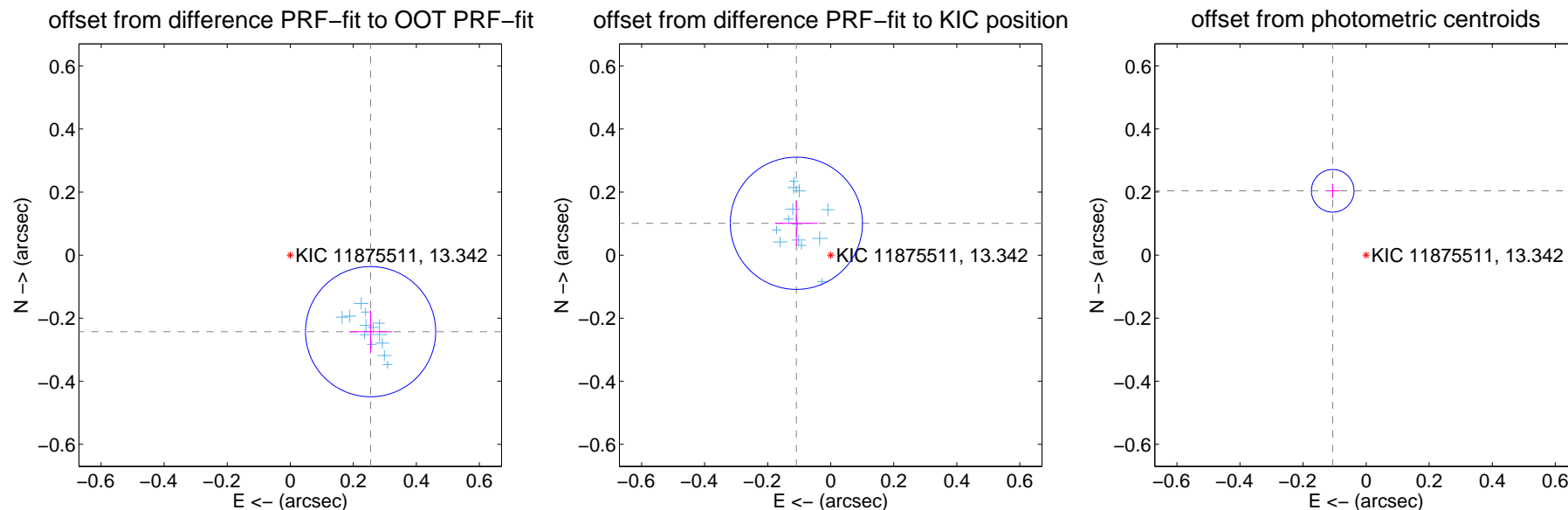
DV Centroid Data

Supplemental centroid analysis for 011875511-01. Kepler magnitude: 13.34. Transit SNR 332.64

There are 13 quarters with good PRF difference image offsets

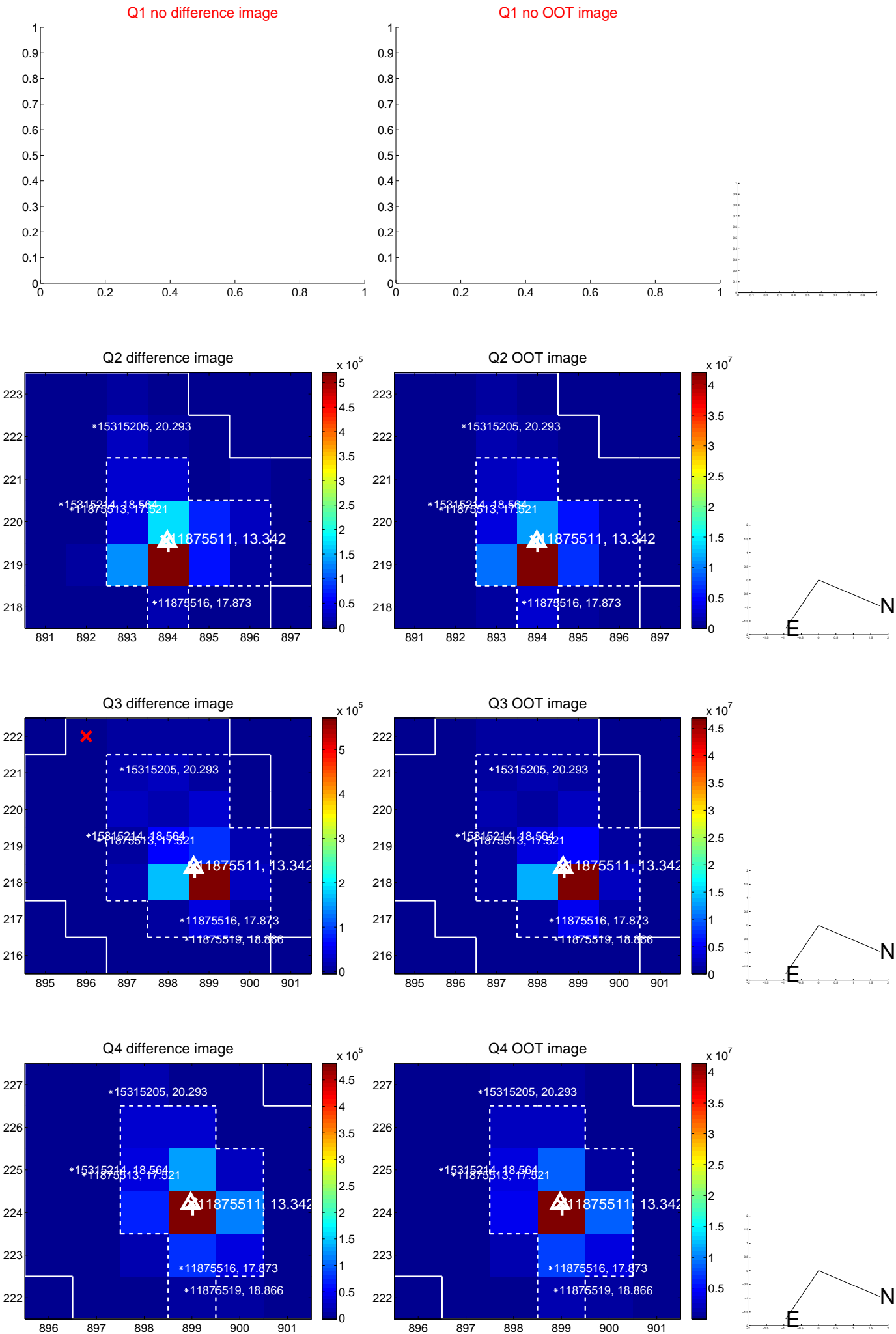
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.352 ± 0.069	5.11	-0.255 ± 0.068	-0.243 ± 0.068
PRF-fit source offset from KIC position	0.149 ± 0.070	2.13	0.109 ± 0.068	0.101 ± 0.071
photometric centroid source offset	0.23 ± 0.02	10.20	0.11 ± 0.02	0.20 ± 0.02

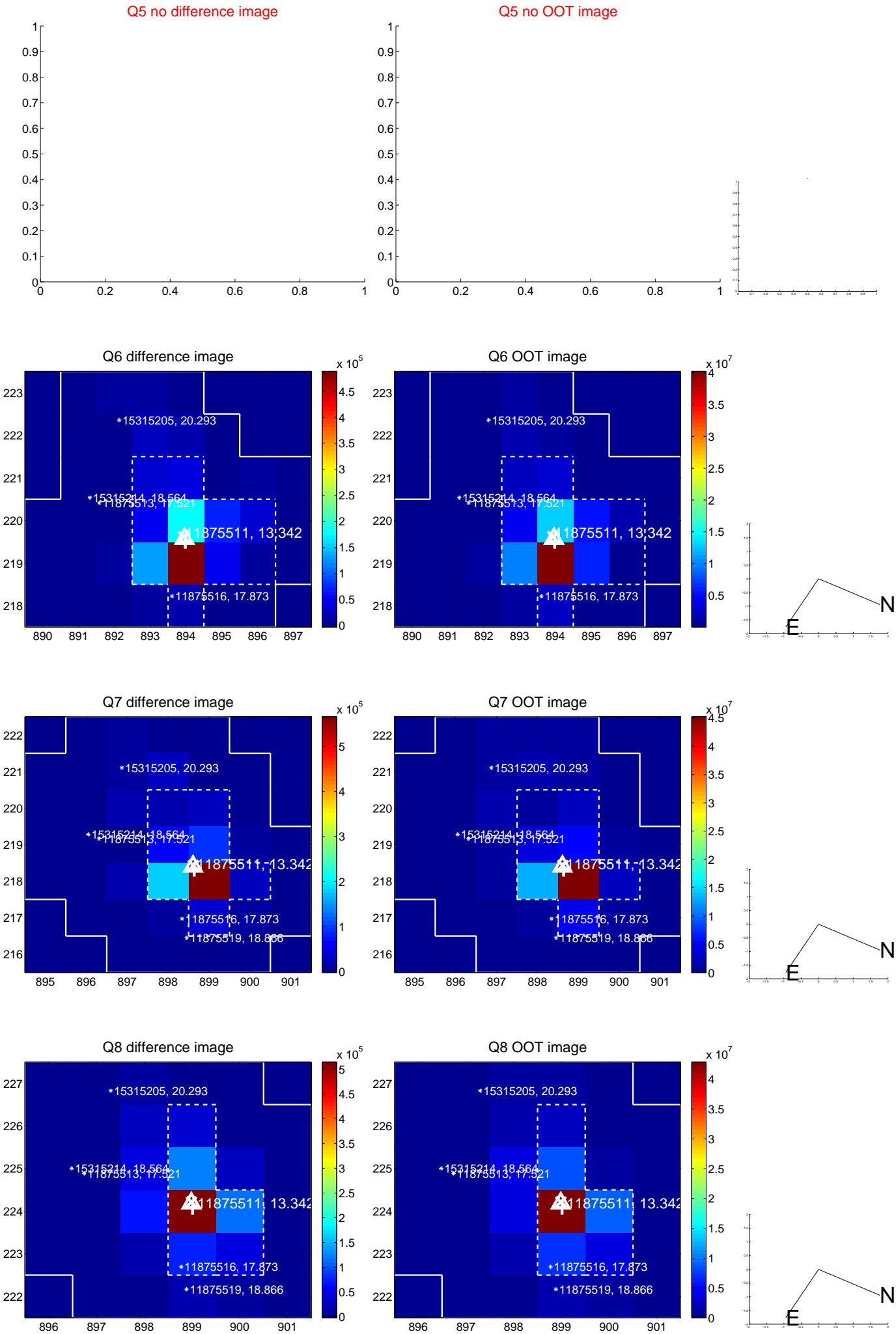


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

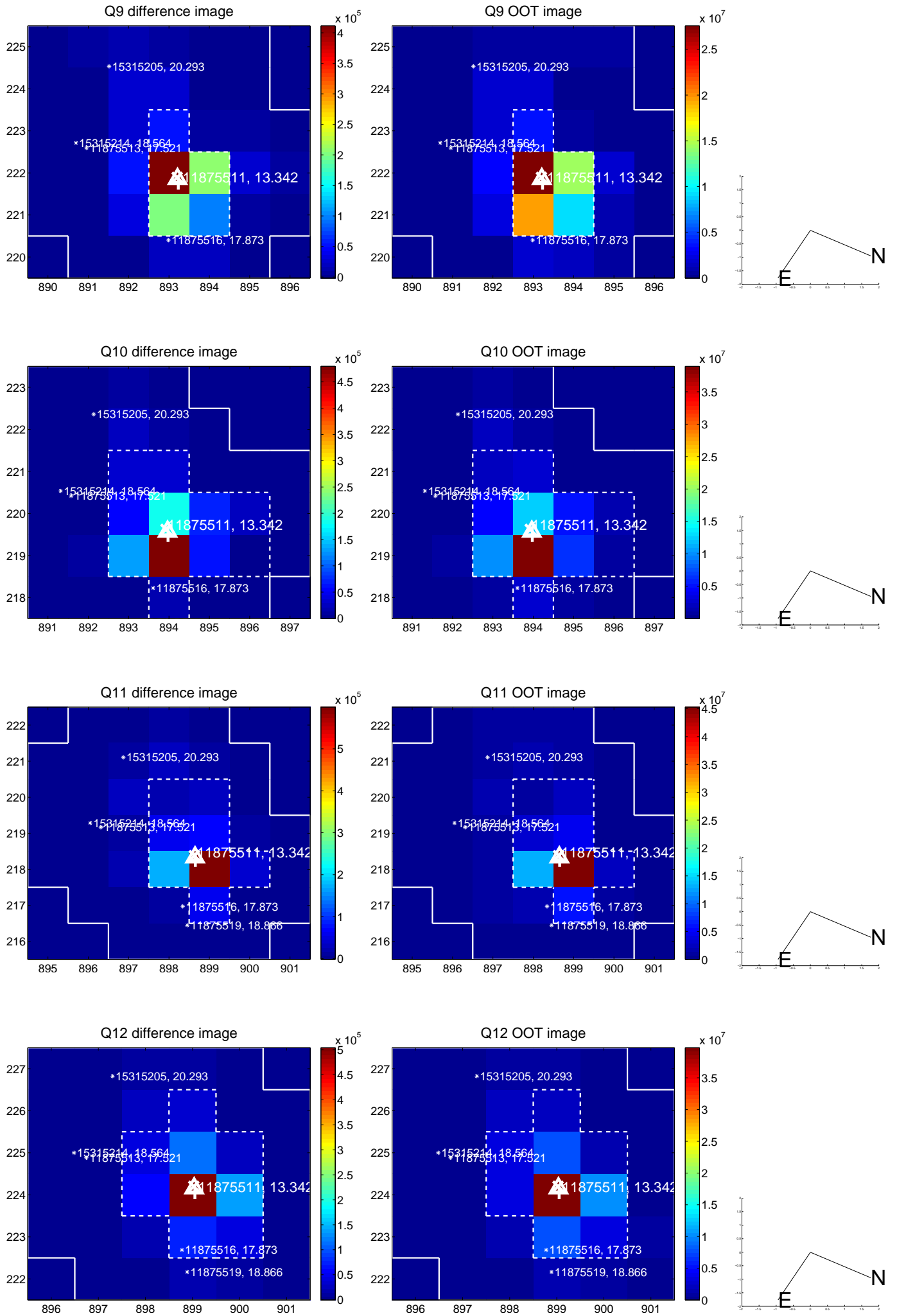
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



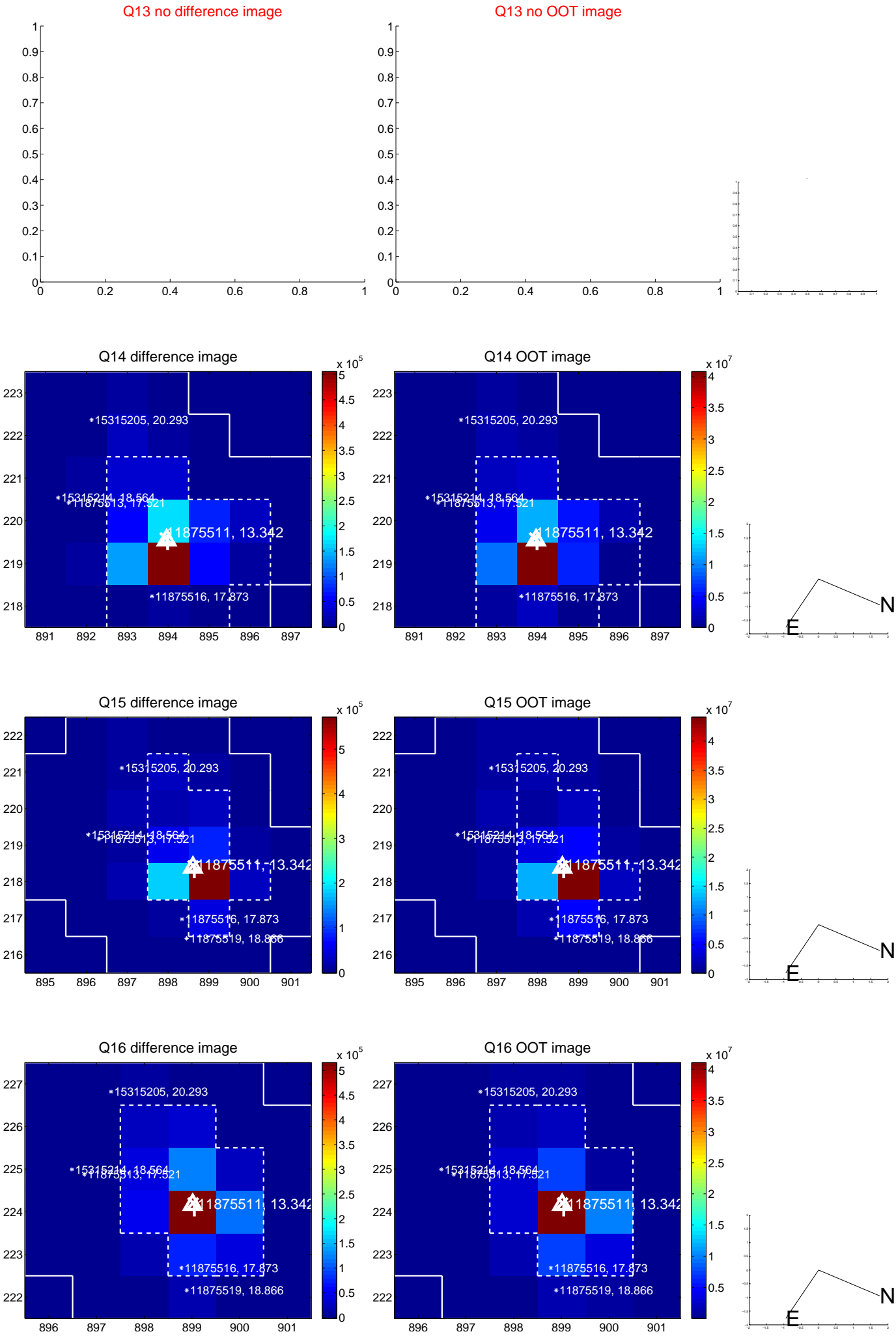
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



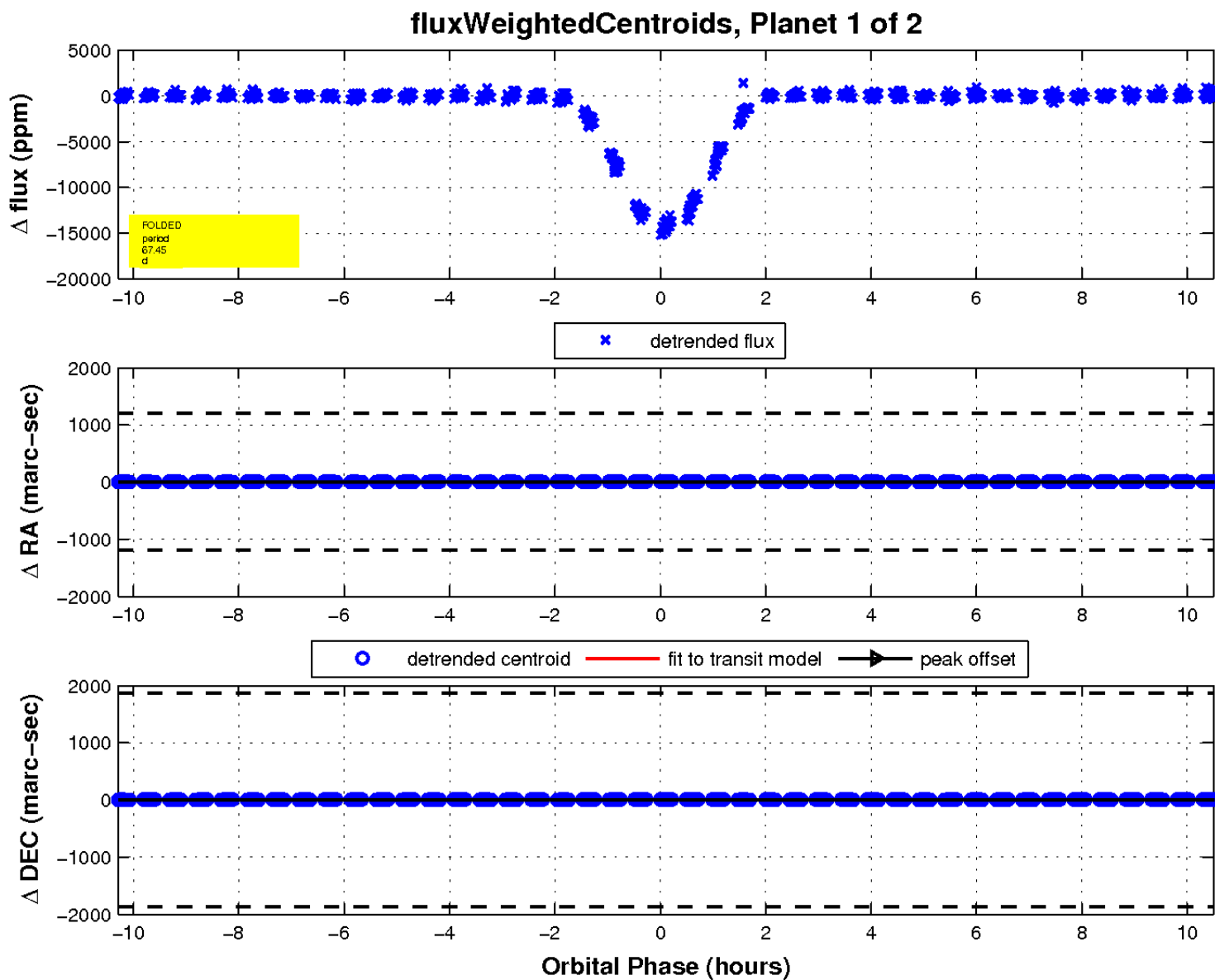
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

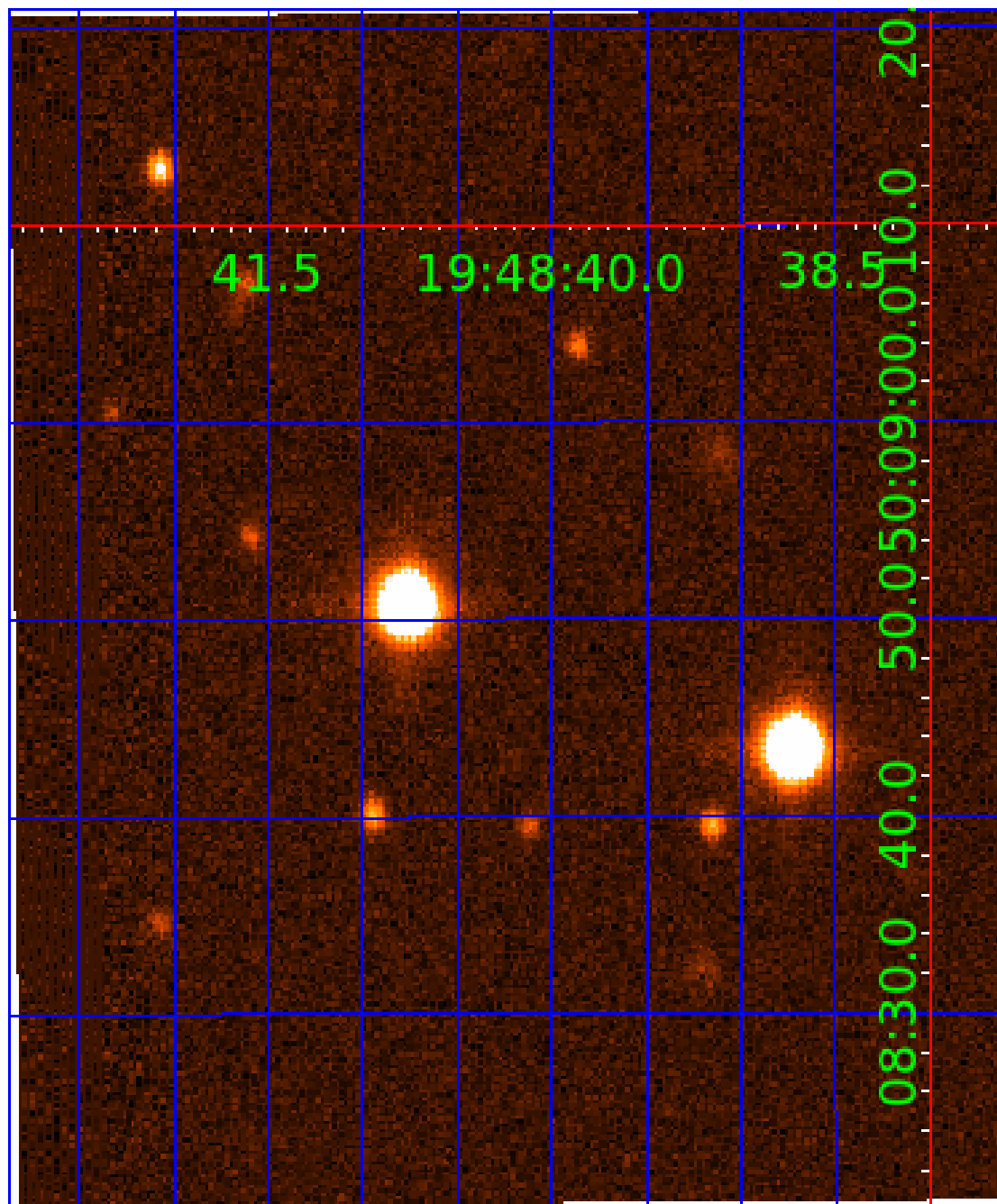


5



UKIRT Image

Declination



KIC 011875511

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})
011875511-01	OBS	3471.01	67.451554	167.511679	14066.6	3.507	409.0	332.6	2.19	4847	48.11	23.65
011875511-02	OBS	No	67.451117	151.966343	6943.9	8.855	229.2	223.2	2.19	4847	31.40	23.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011875511-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
011875511-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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

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

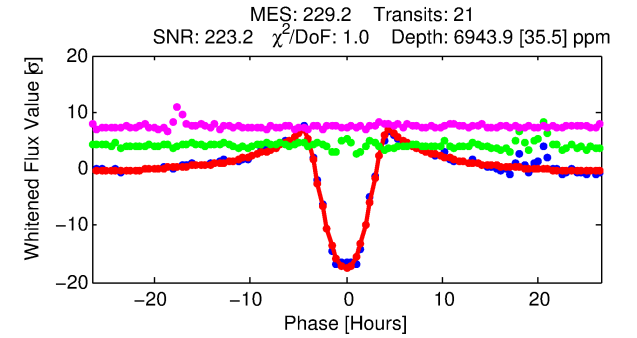
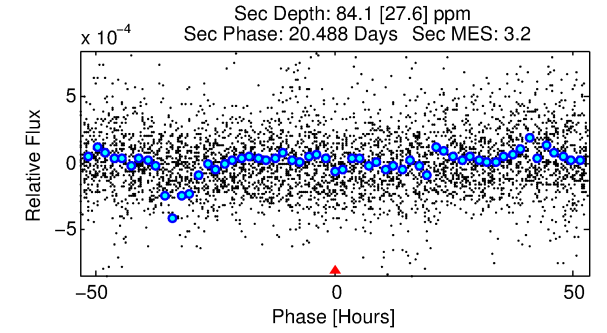
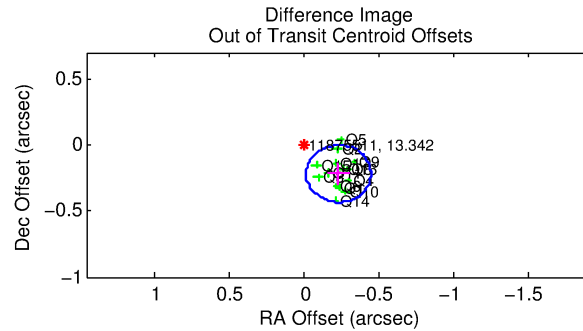
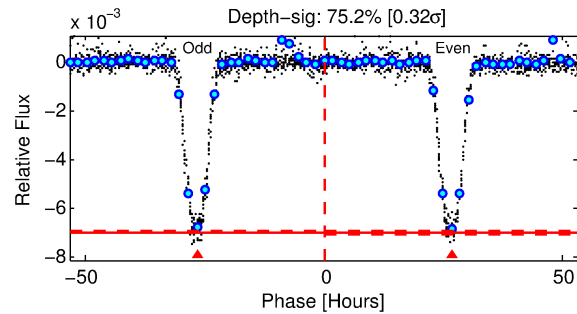
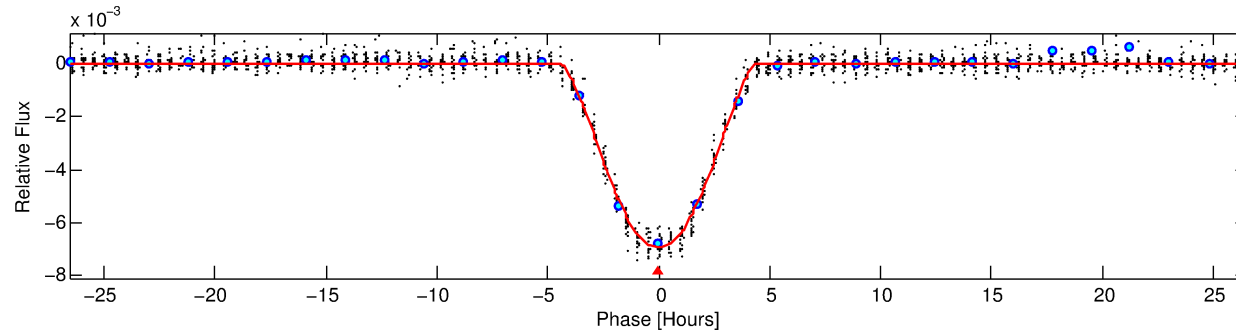
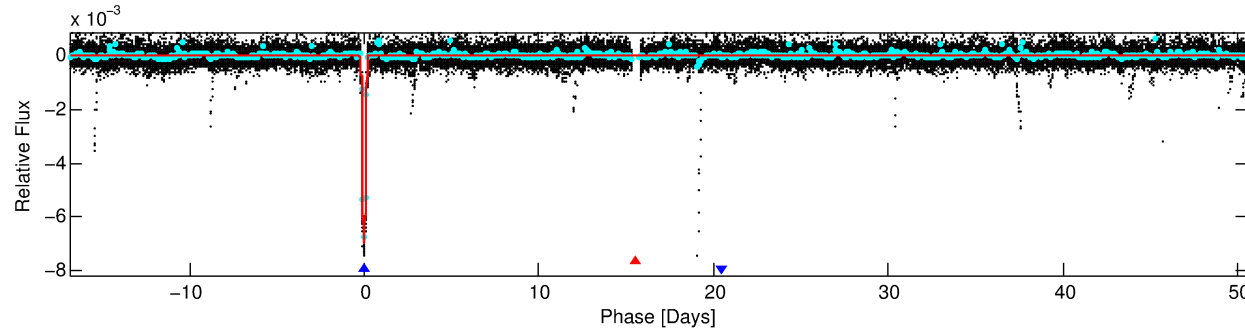
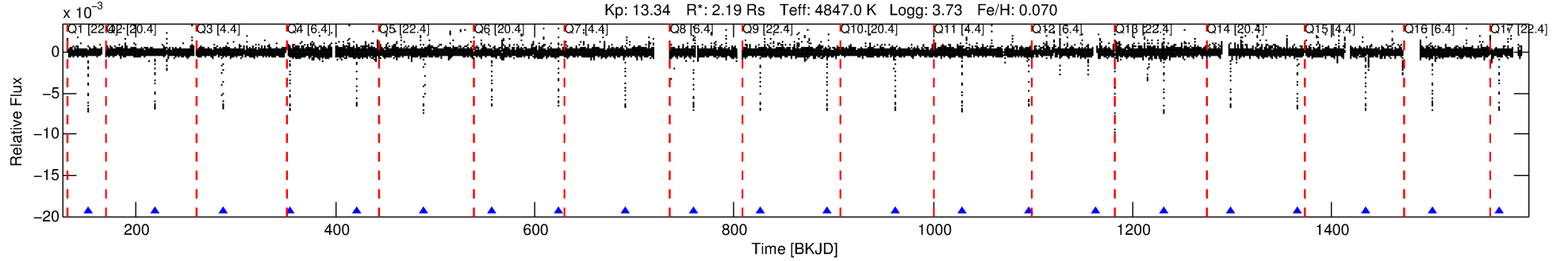
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011875511-02

No Significant Match Found

DV One-Page Summary

KIC: 11875511 Candidate: 2 of 2 Period: 67.451 d
KOI: K03471.01 Corr: 0.994



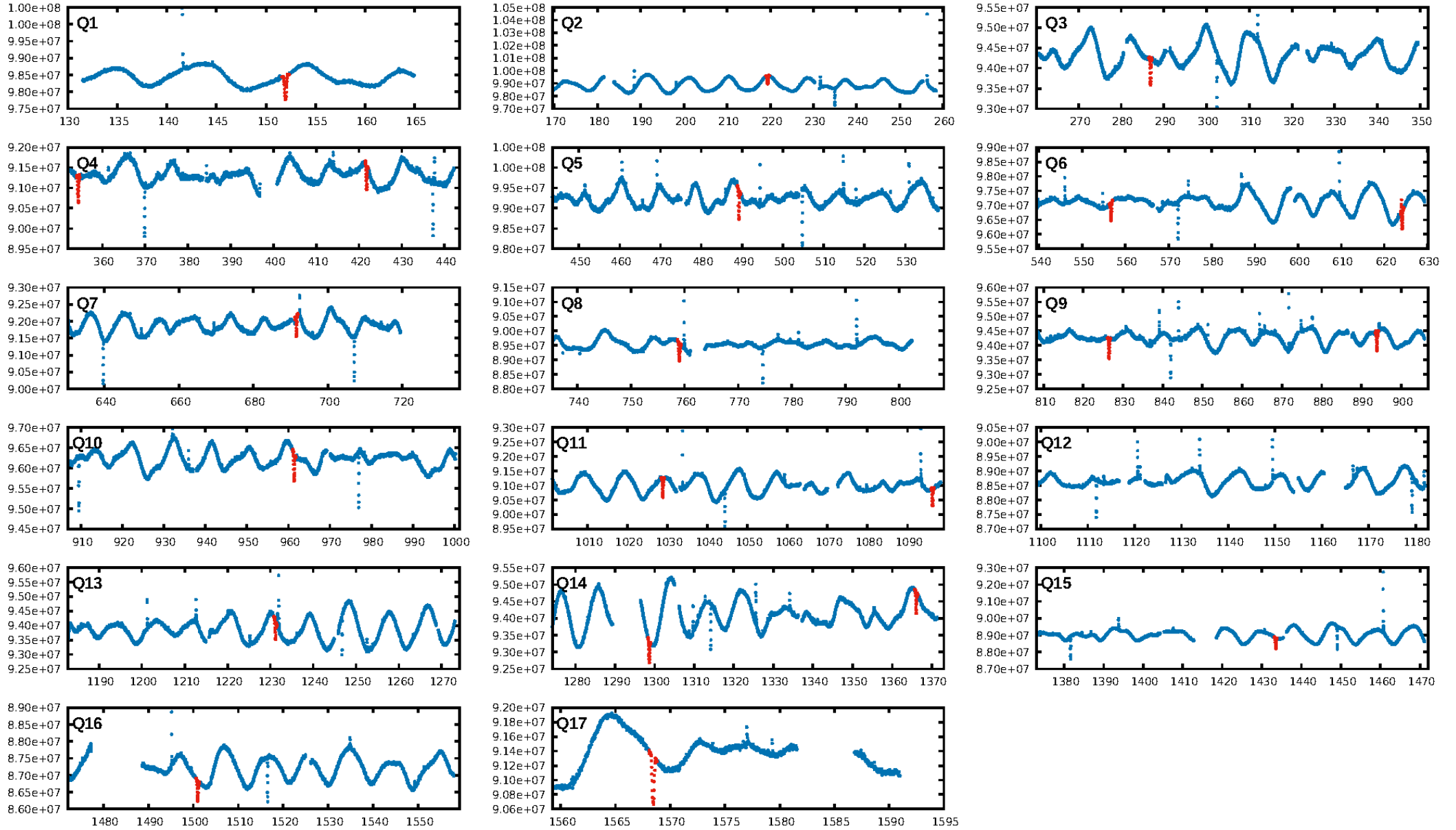
DV Fit Results:

Period = 67.45112 [0.00006] d
Epoch = 151.9663 [0.0007] BKJD
Rp/R* = 0.1313 [0.0149]
a/R* = 32.90 [0.71]
b = 0.98 [0.02]
Seff = 23.65 [32.50]
Teff = 562 [193] K
Rp = 31.40 [22.00] Re
a = 0.3168 [0.2511] AU
Ag = 4.71 [6.72] [0.55 σ]
Teffp = 1281 [132] K [3.07 σ]

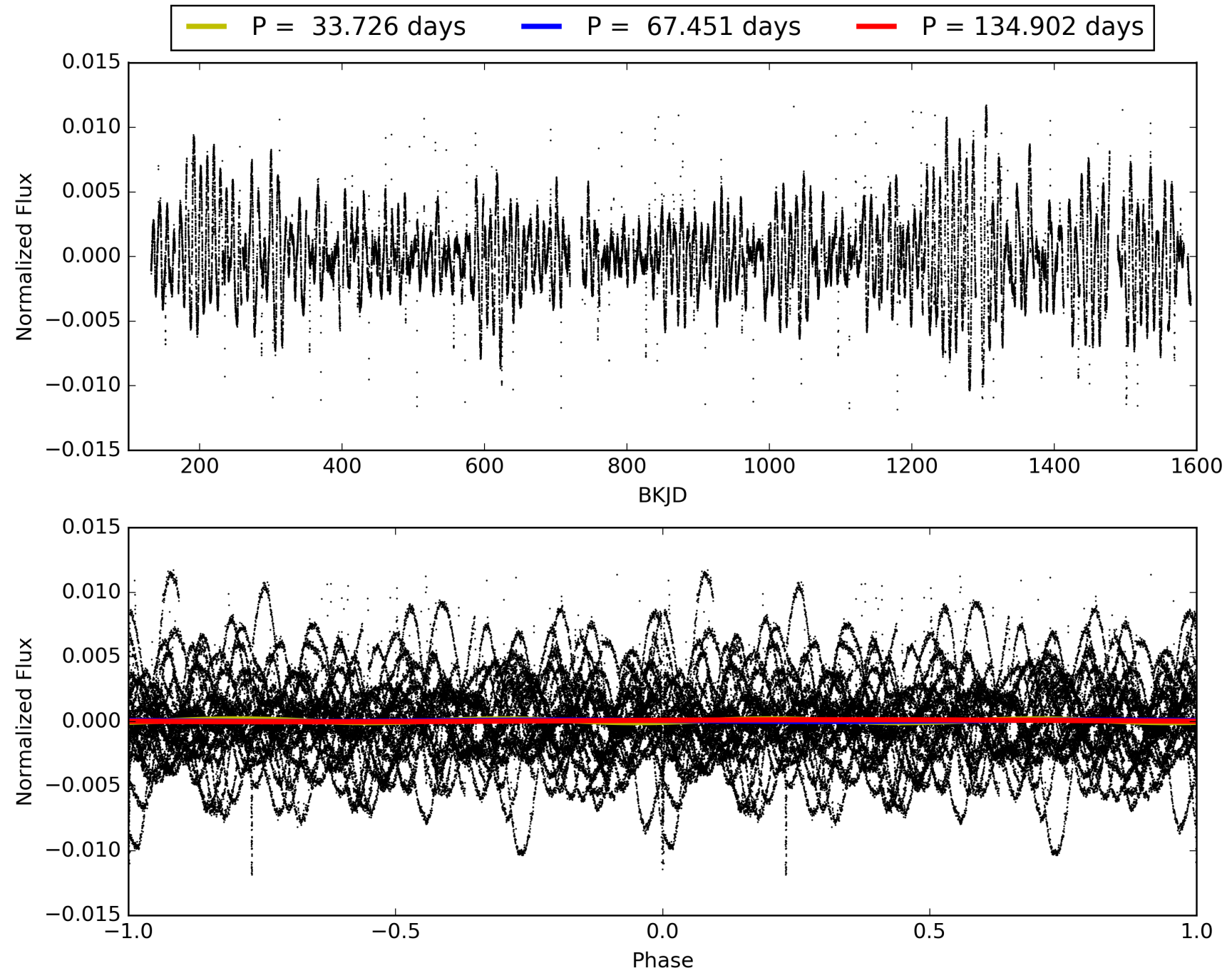
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 5.4%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: 1.969
Centroid-sig: 0.0%
Centroid-so: 0.231 arcsec [8.07 σ]
OotOffset-rm: 0.322 arcsec [4.47 σ]
KicOffset-rm: 0.154 arcsec [2.08 σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011875511-02, PDC Light Curves

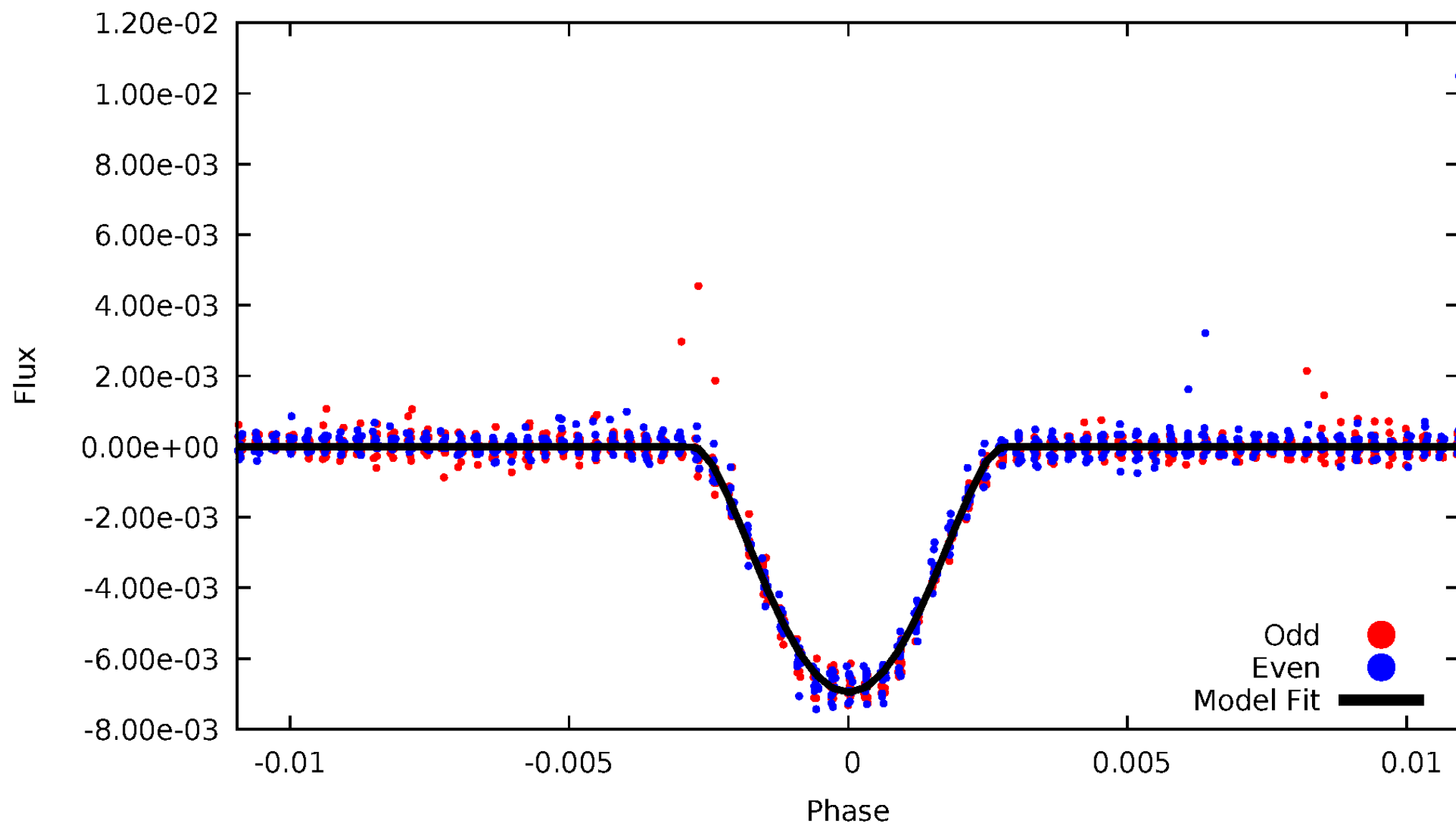


TCE 011875511-02



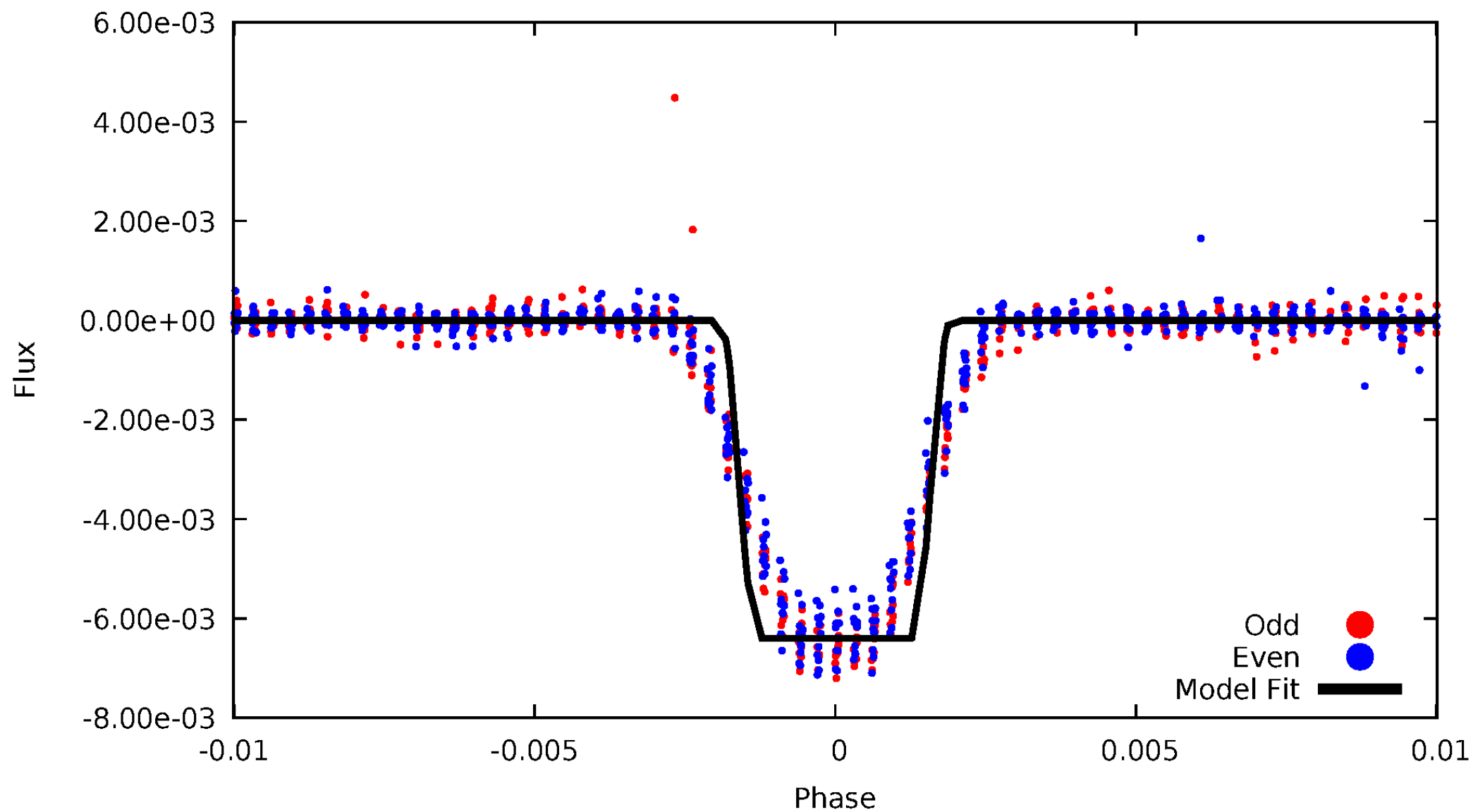
DV Odd/Even

TCE 011875511-02



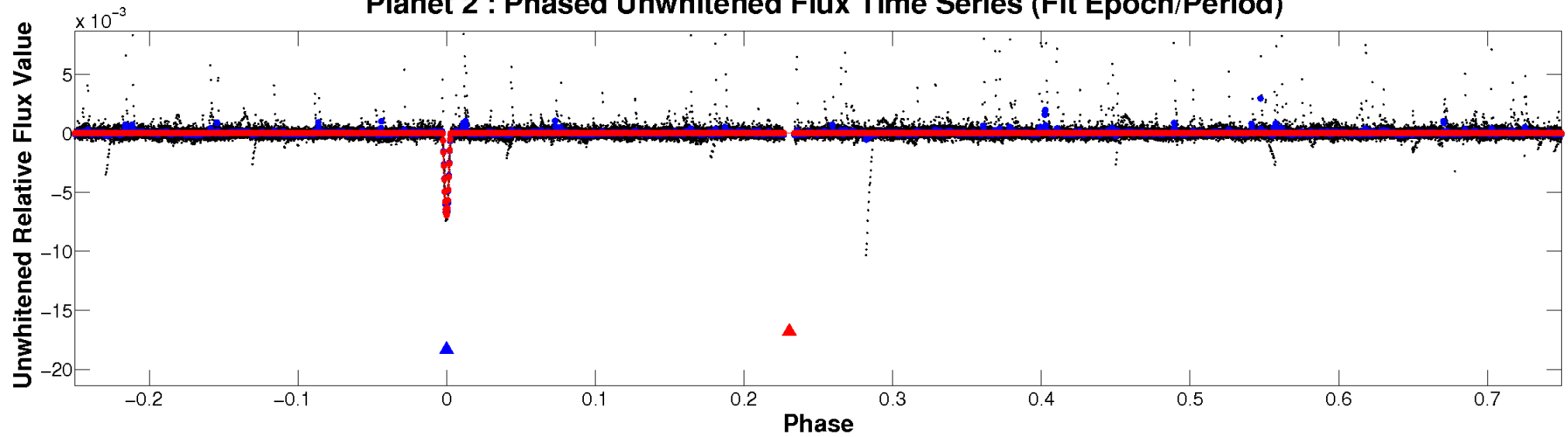
ALT Odd/Even

TCE 011875511-02

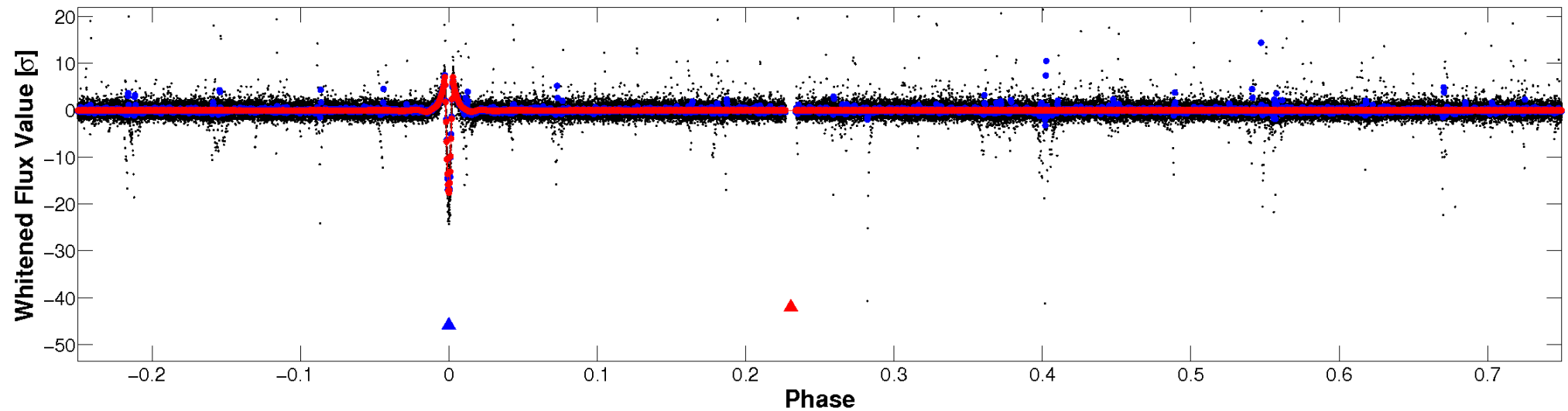


Non-Whitened Vs. Whitened Light Curve

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

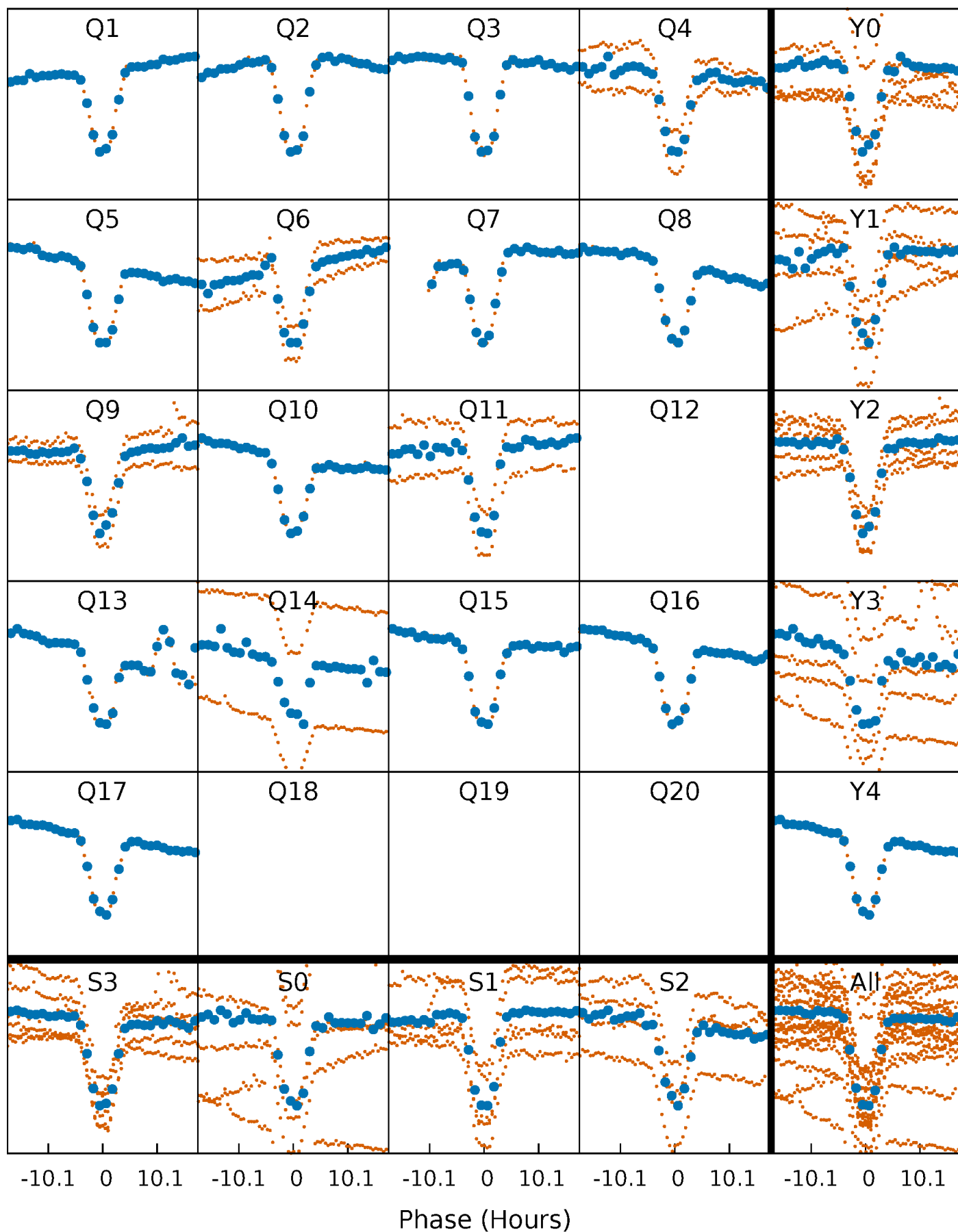


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



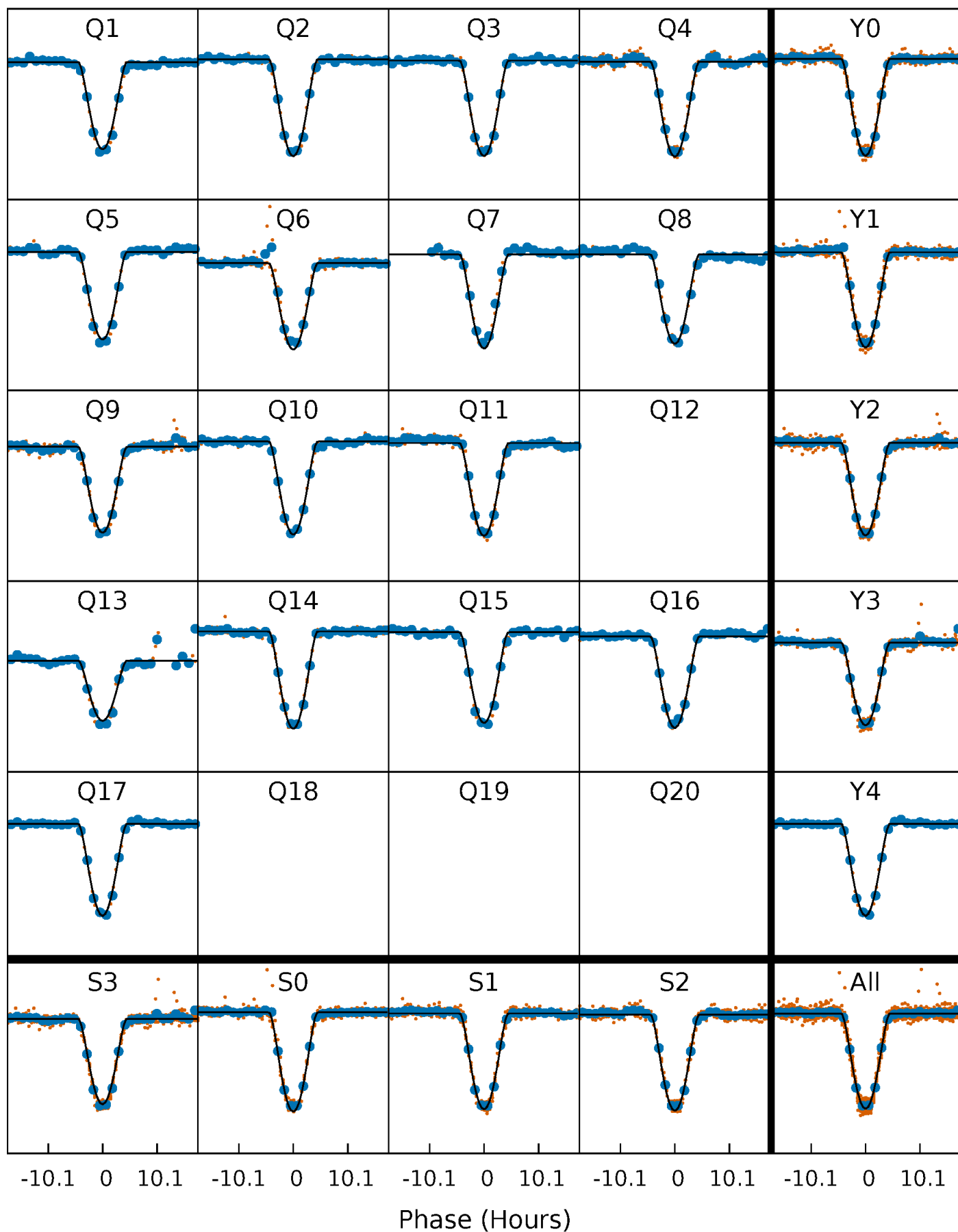
PDC Quarter-Phased Transit Curves

TCE 011875511-02 P= 67.451117 Days $T_0=151.966343$ (BKJD)



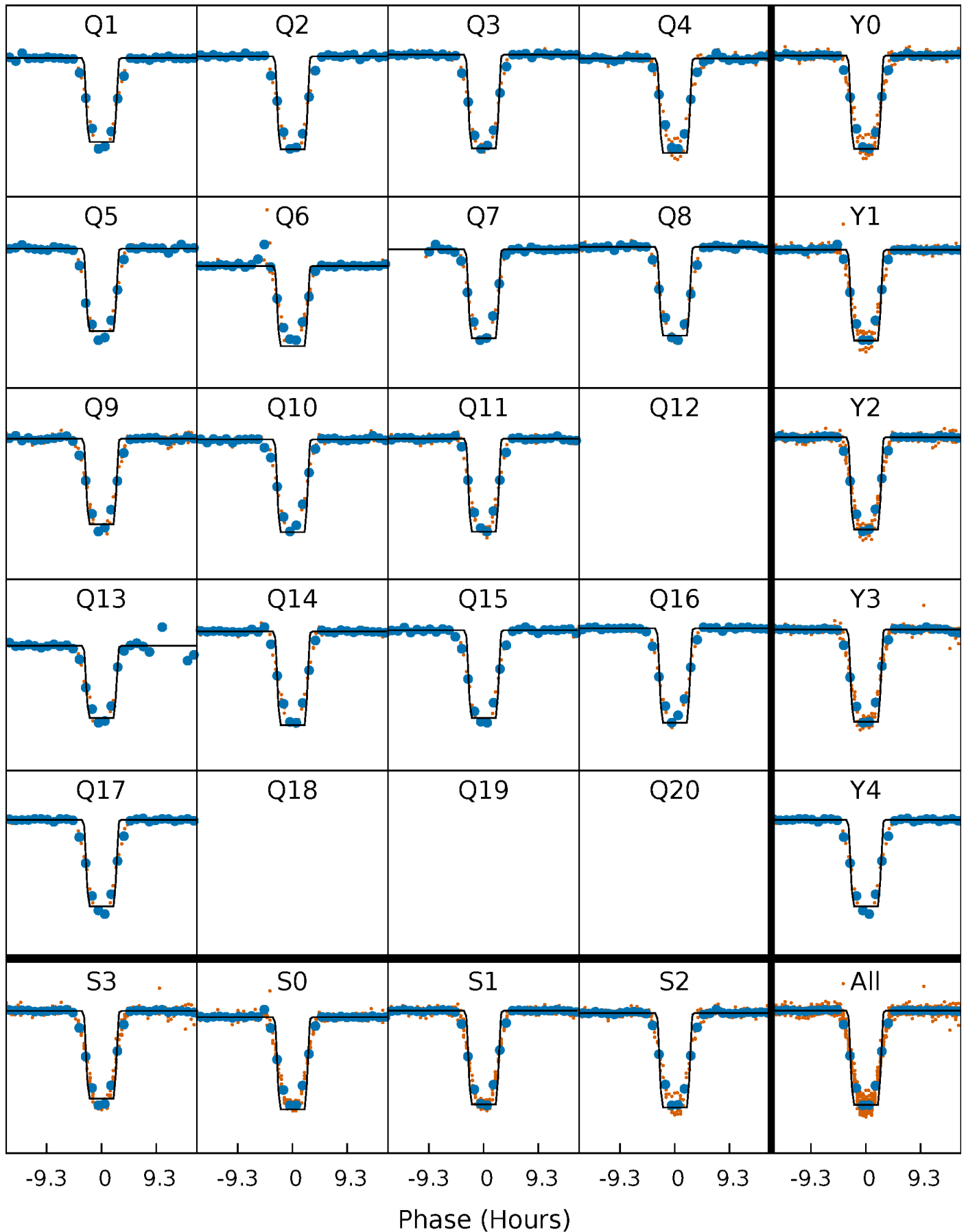
DV Quarter-Phased Transit Curves

TCE 011875511-02 P= 67.451117 Days $T_0=151.966343$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

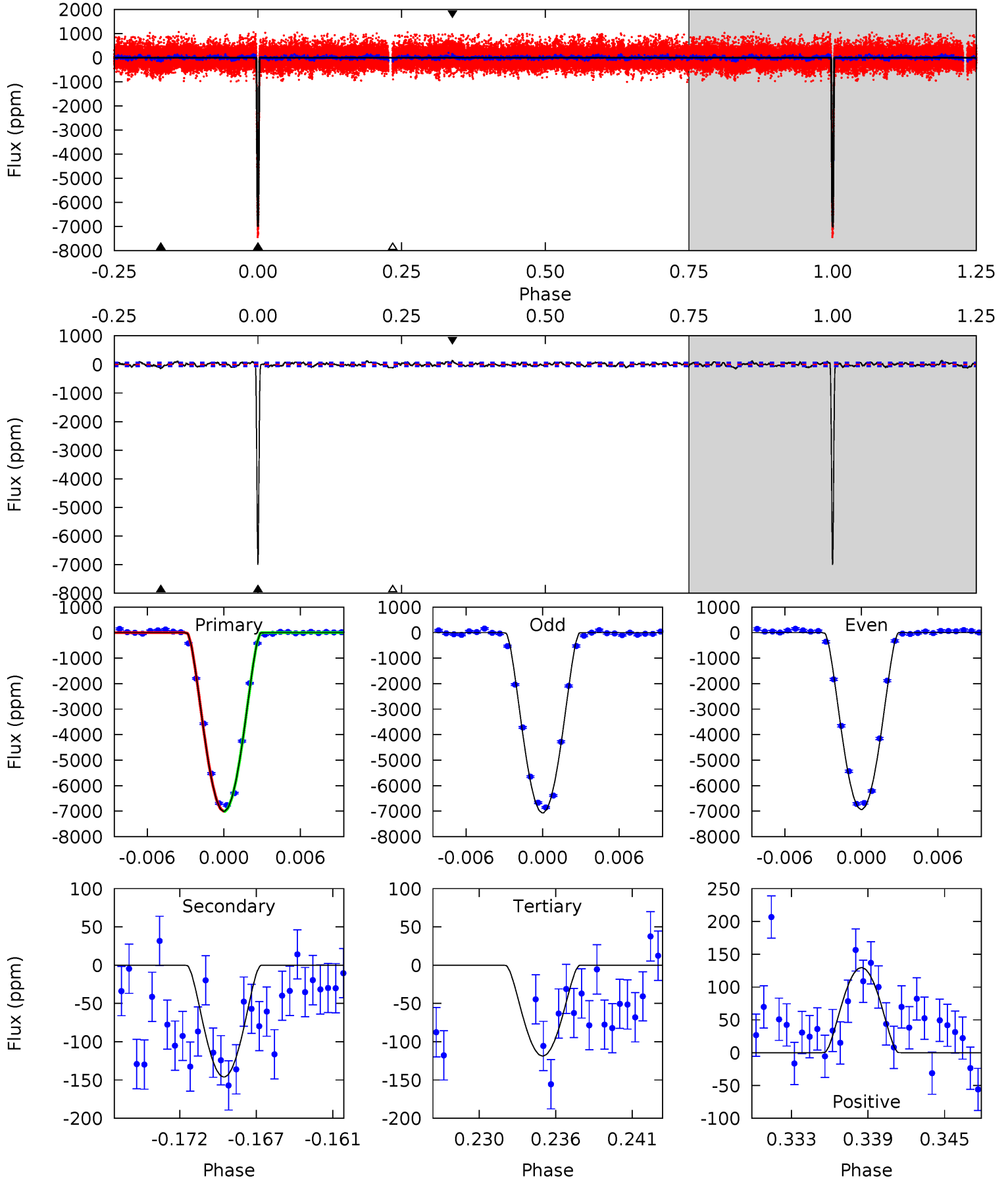
TCE 011875511-02 P= 67.451266 Days $T_0=151.964280$ (BKJD)



DV Model-Shift Uniqueness Test

011875511-02, P = 67.451117 Days, E = 84.515226 Days

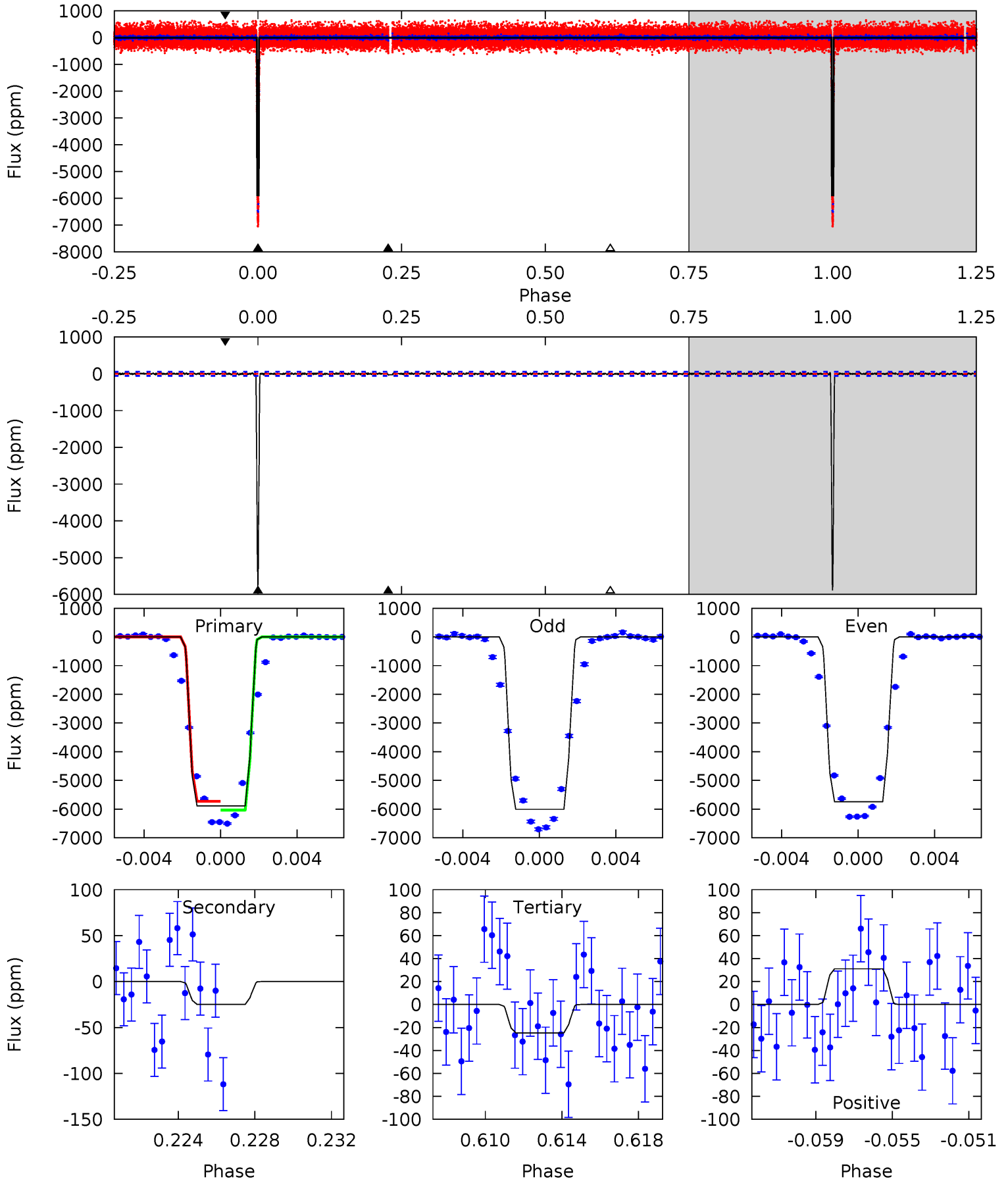
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
569.4	11.9	9.64	10.5	5.13	2.76	3.47	559.7	558.8	2.24	1.35	5.43	1.00	0.02	0.73



Alt Model-Shift Uniqueness Test

011875511-02, P = 67.451266 Days, E = 84.513014 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
546.6	2.31	2.29	2.89	5.20	2.88	0.72	544.3	543.7	0.02	-0.58	12.4	1.00	0.01	14.1



Stellar Parameters For KIC 011875511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4847^{+134}_{-122}	$3.726^{+0.840}_{-0.360}$	$0.070^{+0.250}_{-0.250}$	$2.191^{+1.240}_{-1.515}$	$0.930^{+0.224}_{-0.183}$	$0.125^{+2.487}_{-0.093}$
	+3%/-3%	+23%/-10%	+357%/-357%	+57%/-69%	+24%/-20%	+1996%/-75%
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 011875511-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-146 ± 12	$30.65^{+12.37}_{-10.93}$	776^{+126}_{-143}	2330^{+85}_{-71}	$8.808^{+11.202}_{-4.354}$
Alt.	-25 ± 11	$18.19^{+8.52}_{-6.46}$	781^{+126}_{-148}	2126^{+142}_{-166}	$3.818^{+6.698}_{-2.315}$

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 $A_{obs} \gg 1.0$

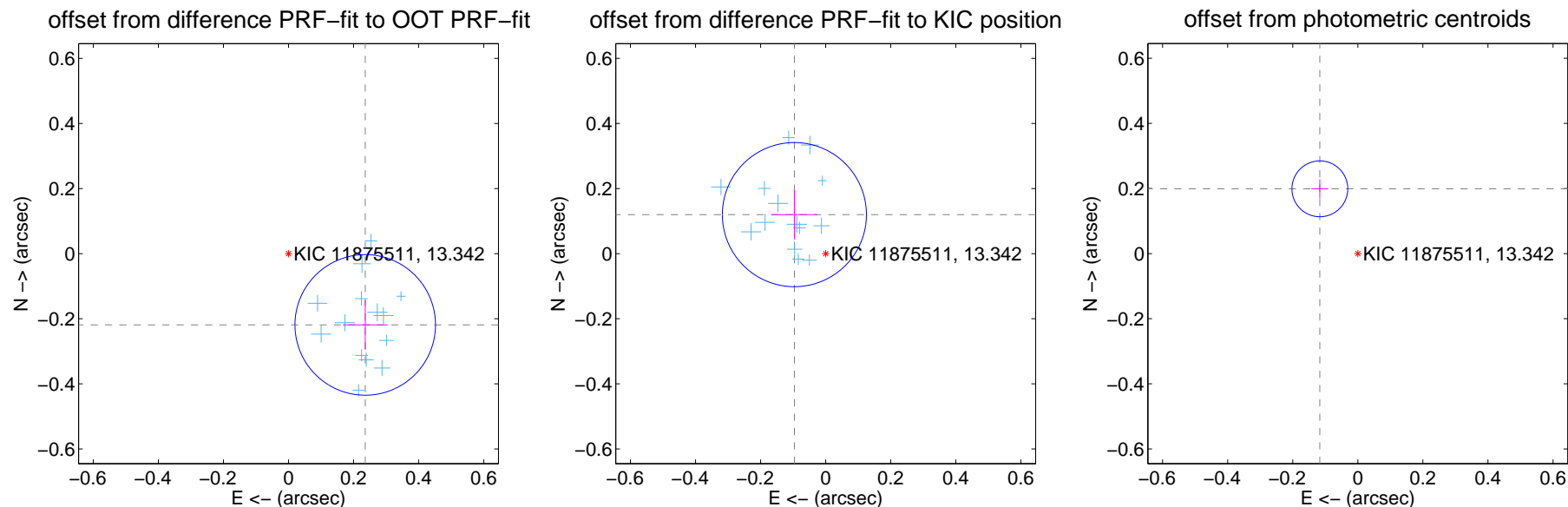
DV Centroid Data

Supplemental centroid analysis for 011875511-02. Kepler magnitude: 13.34. Transit SNR 223.16

There are 14 quarters with good PRF difference image offsets

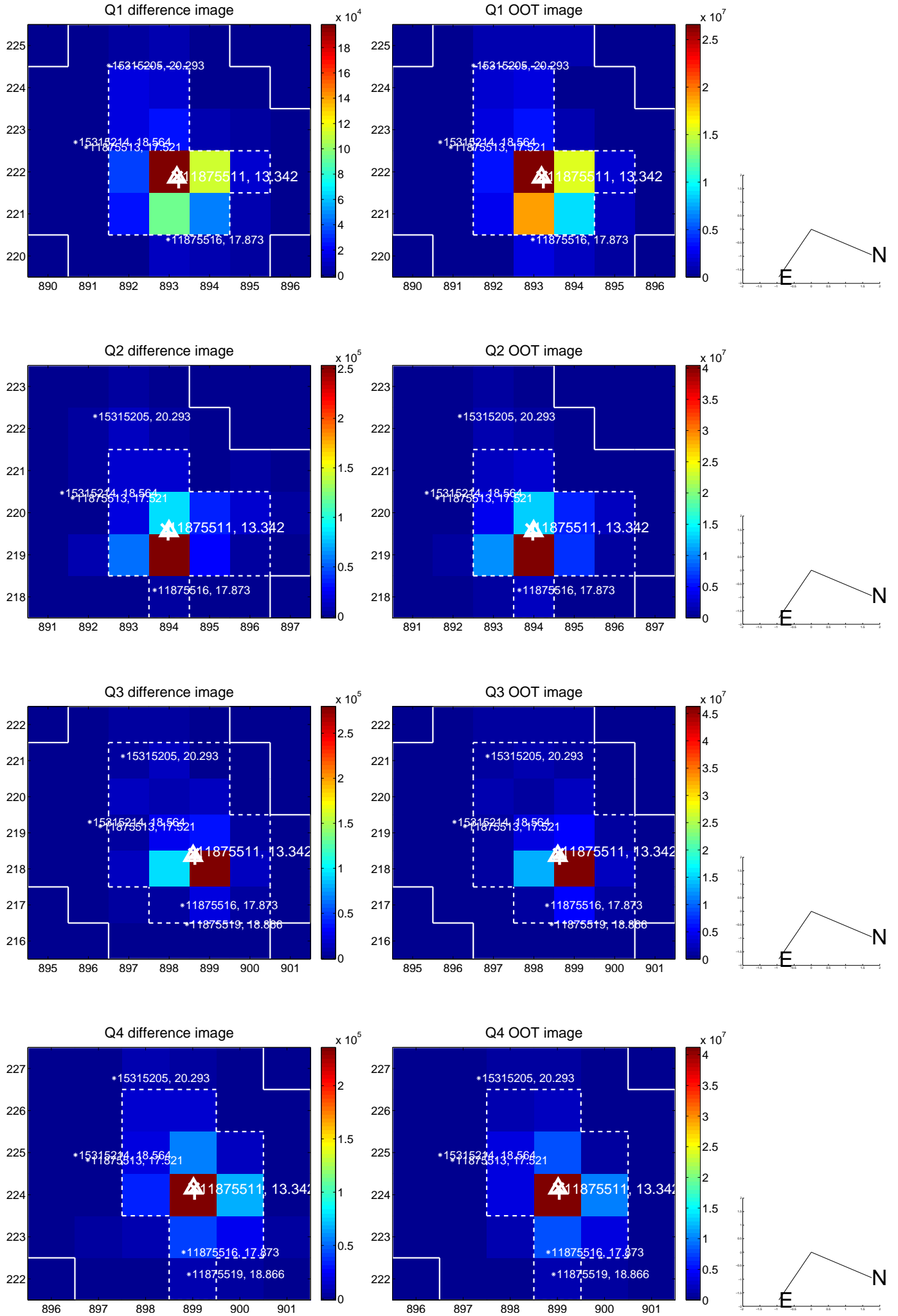
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.322 ± 0.072	4.47	-0.236 ± 0.069	-0.219 ± 0.076
PRF-fit source offset from KIC position	0.154 ± 0.074	2.08	0.096 ± 0.071	0.120 ± 0.076
photometric centroid source offset	0.23 ± 0.03	8.07	0.12 ± 0.03	0.20 ± 0.03

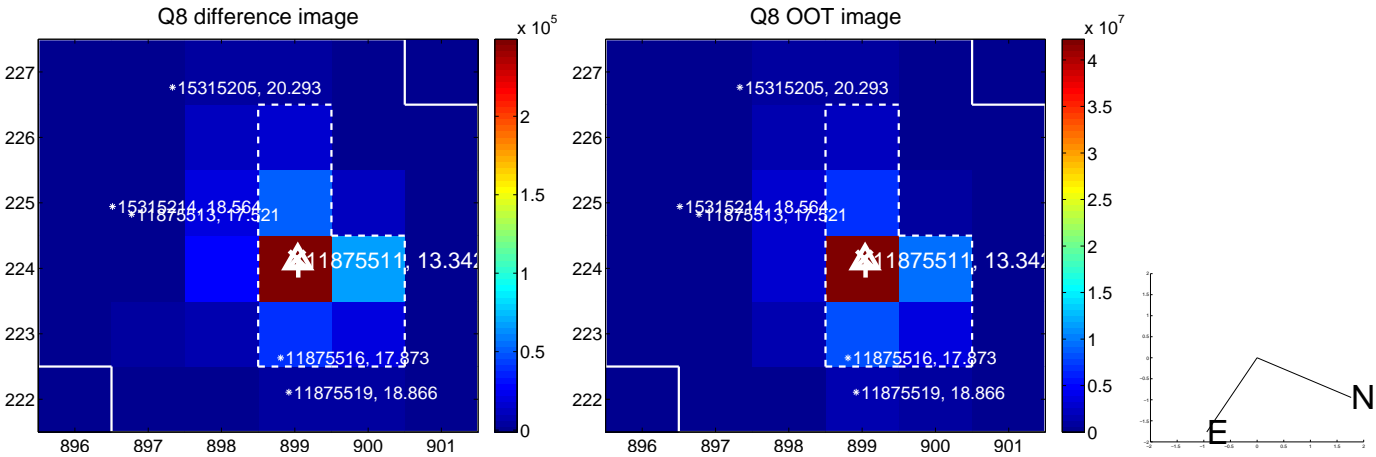
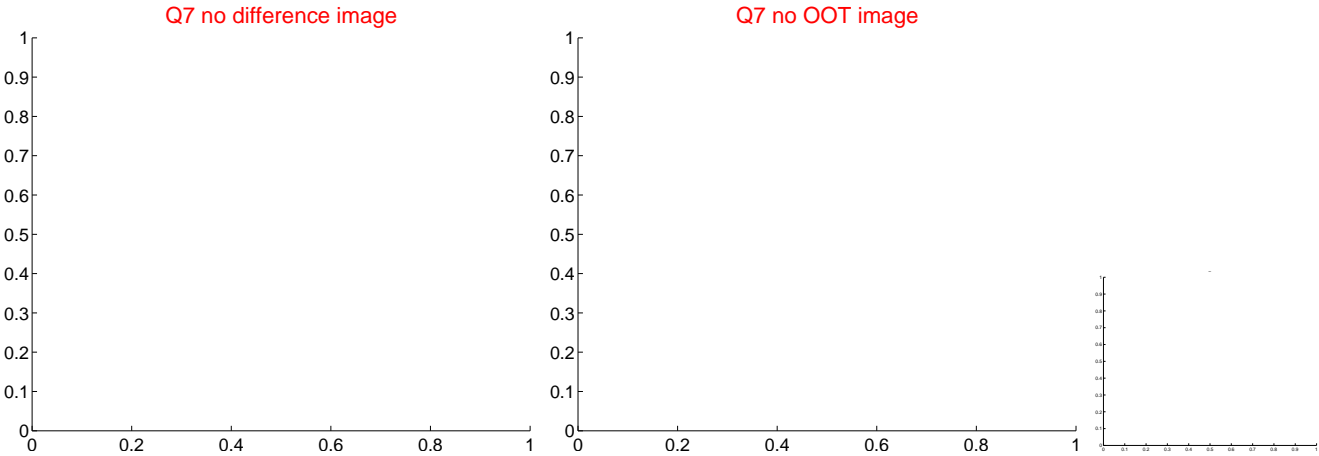
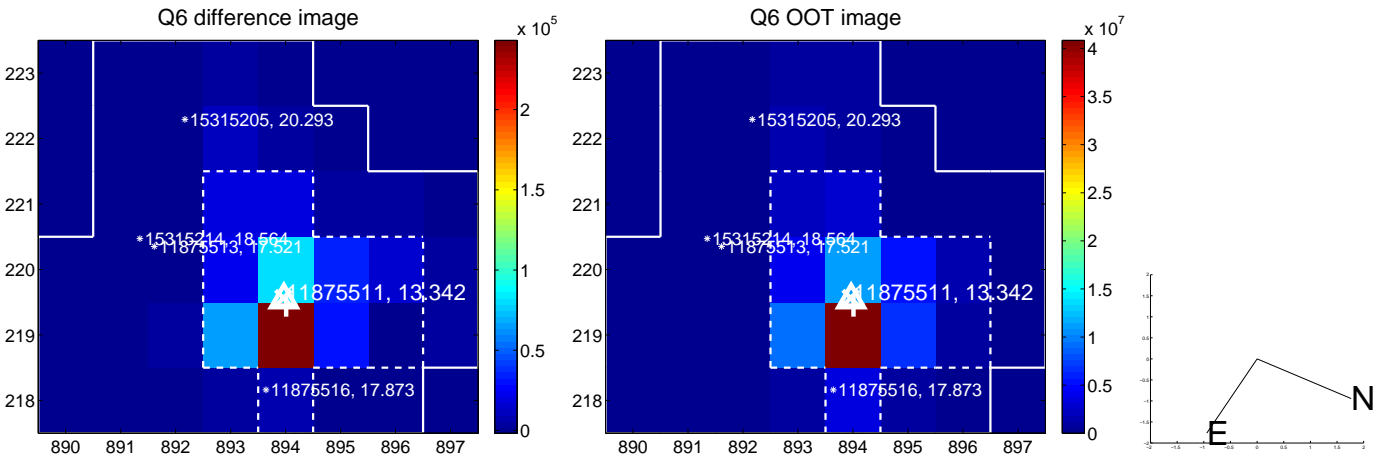
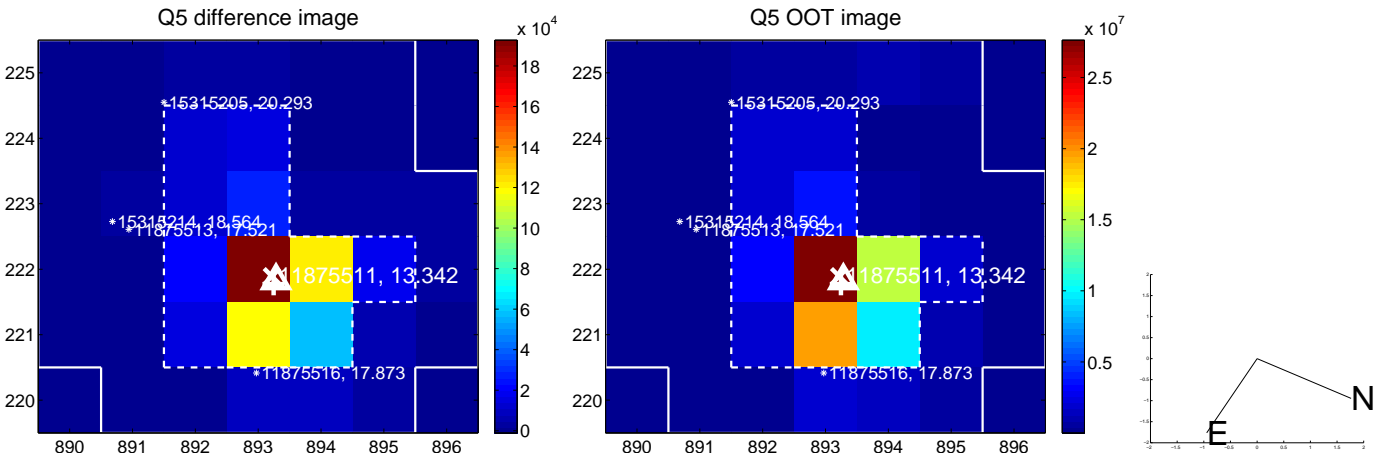


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

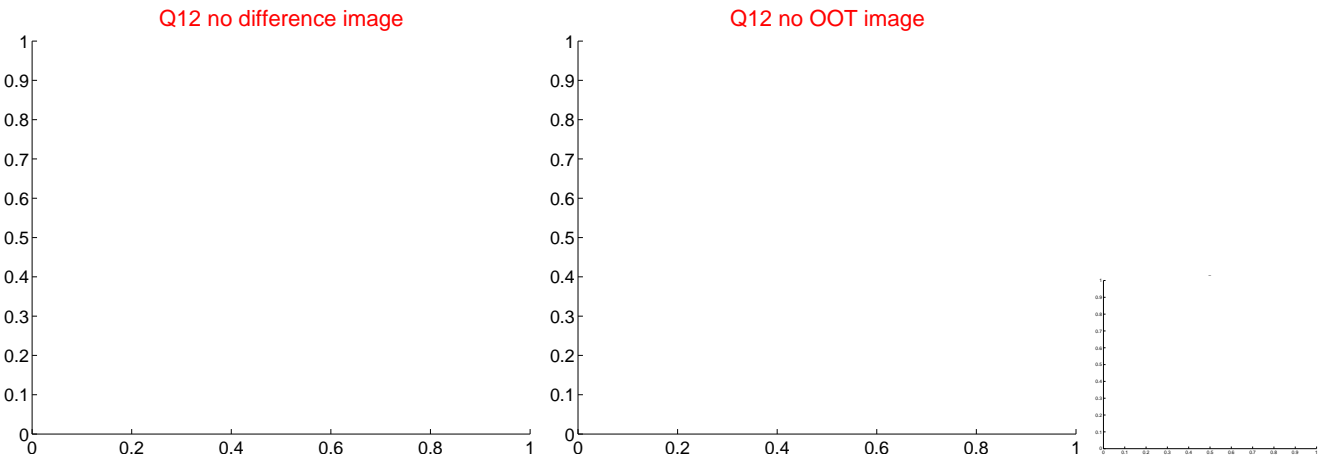
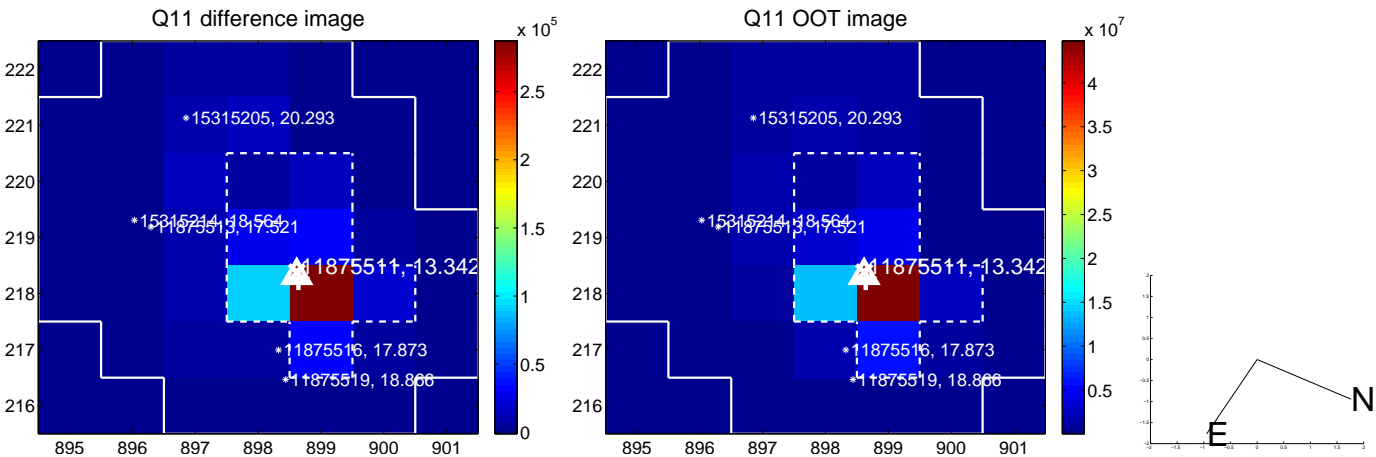
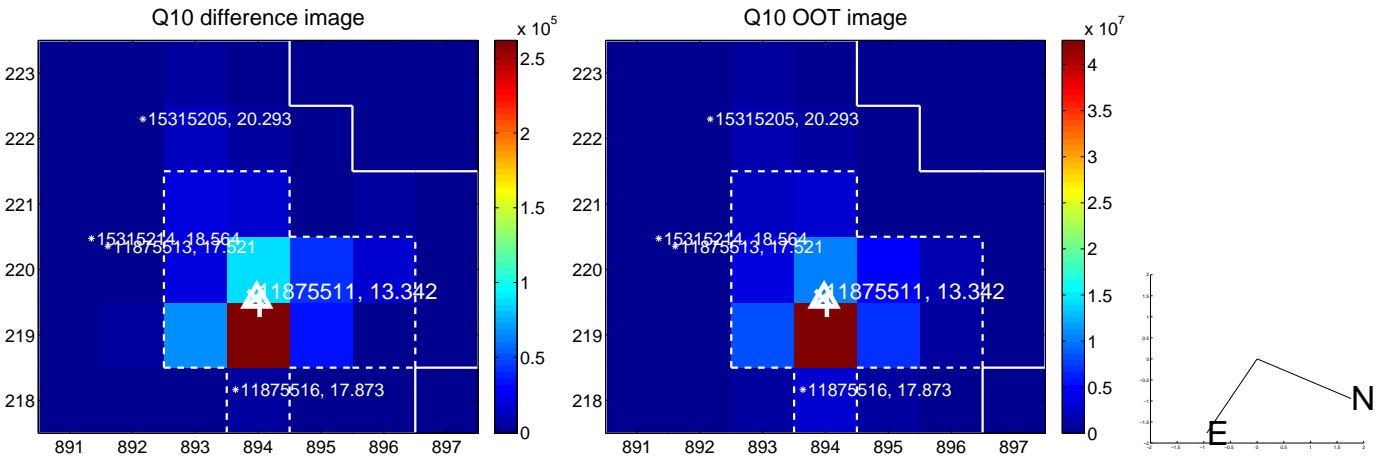
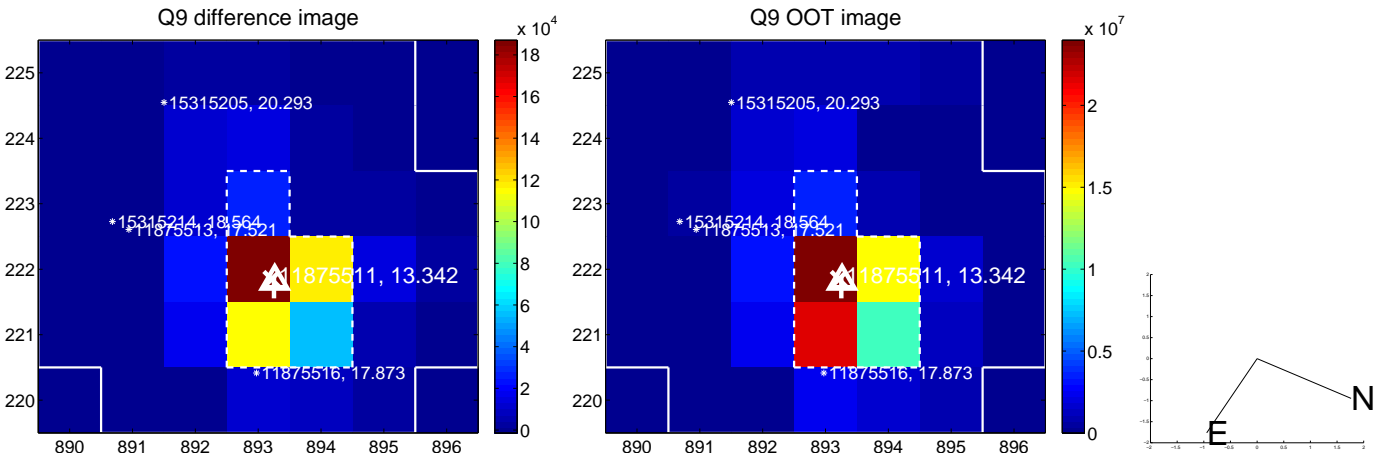
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



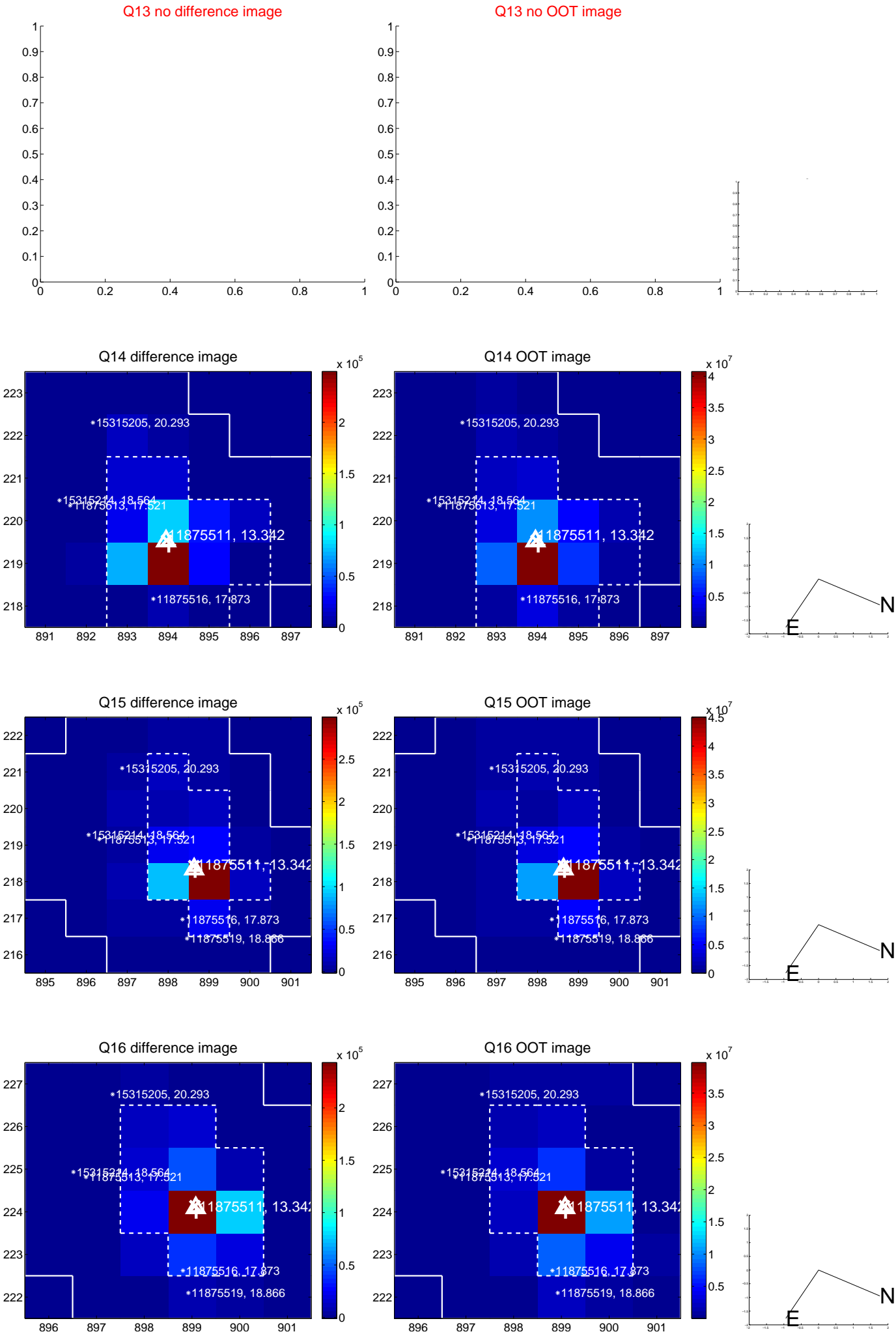
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



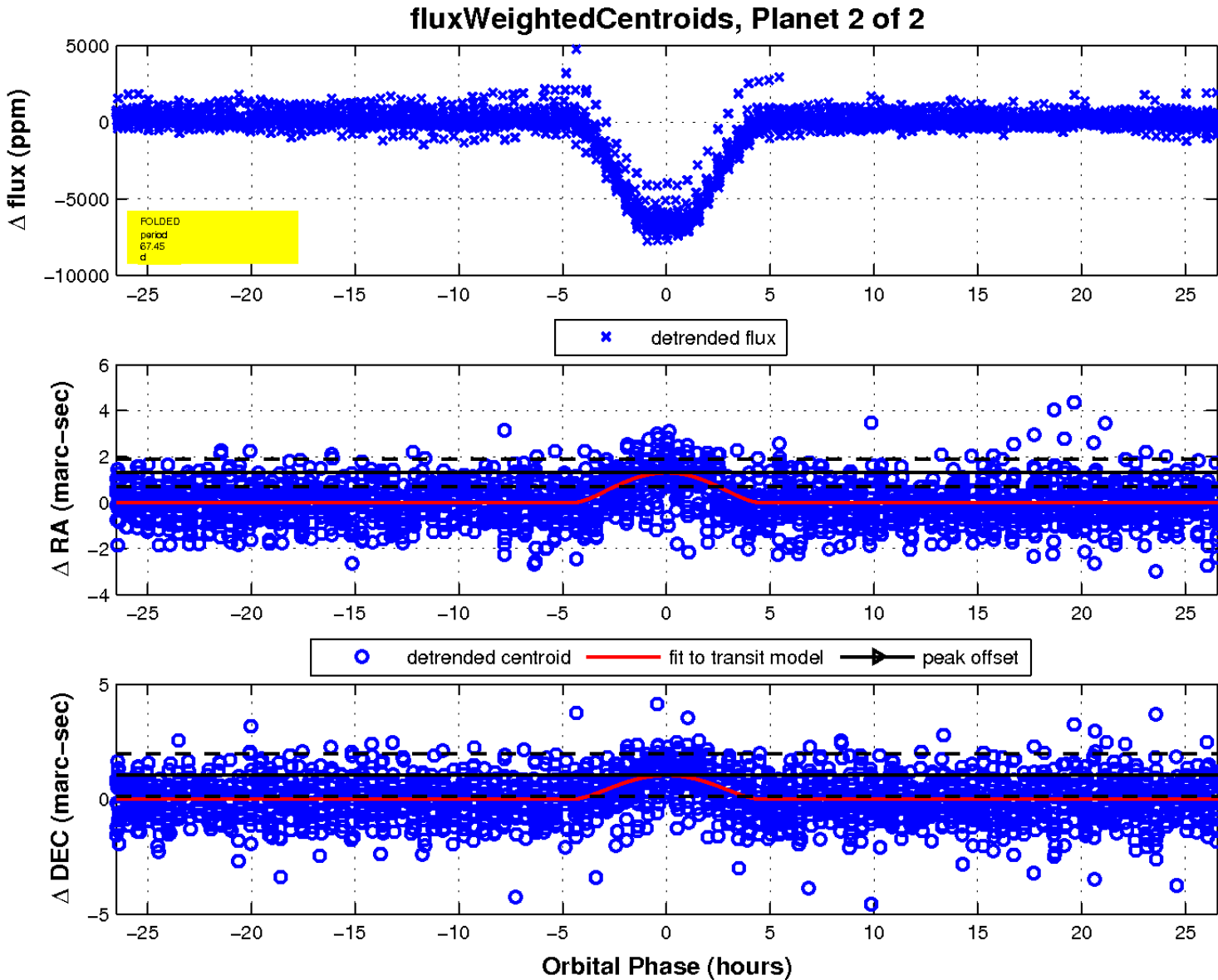
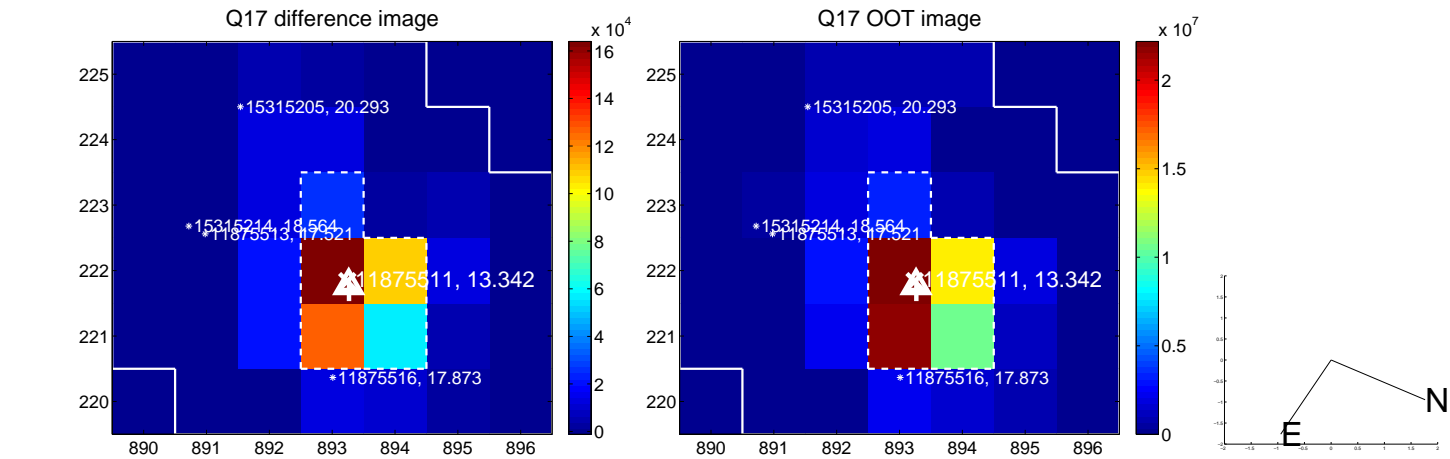
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

