

KIC 011506235

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})
011506235-01	OBS	7454.01	20.413050	140.016851	92461.3	4.467	2878.1	2397.9	0.96	5941	34.99	47.23
011506235-02	OBS	No	20.413046	132.932384	5188.6	3.963	171.2	170.3	0.96	5941	8.44	47.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011506235-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011506235-02	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.

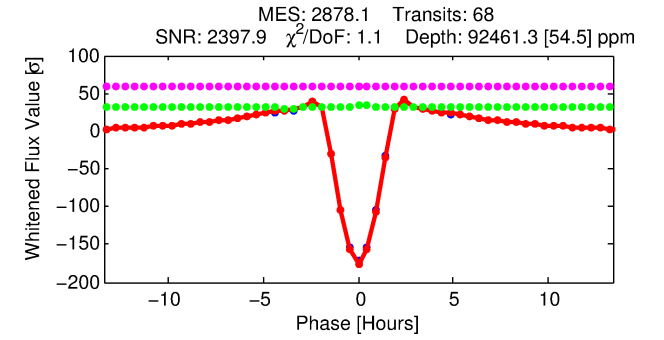
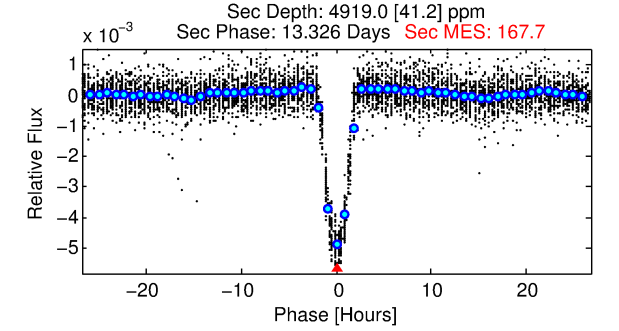
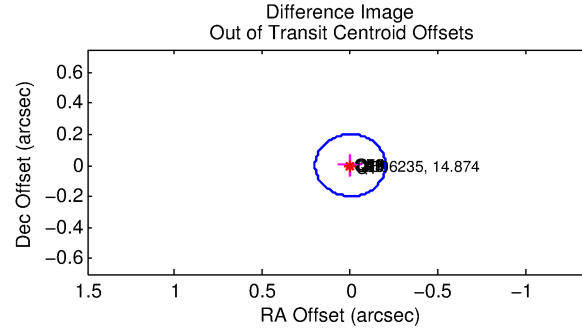
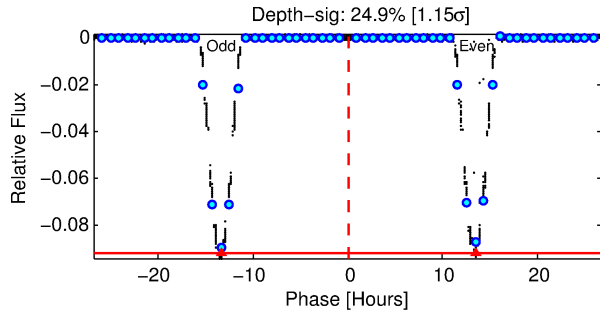
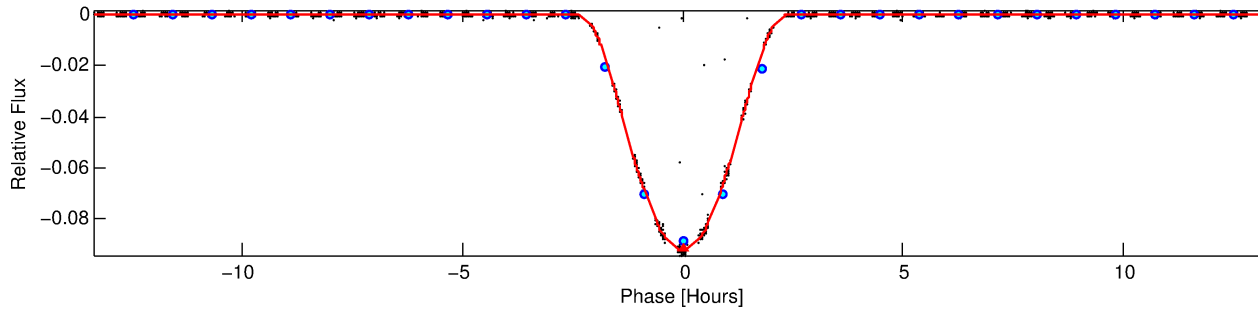
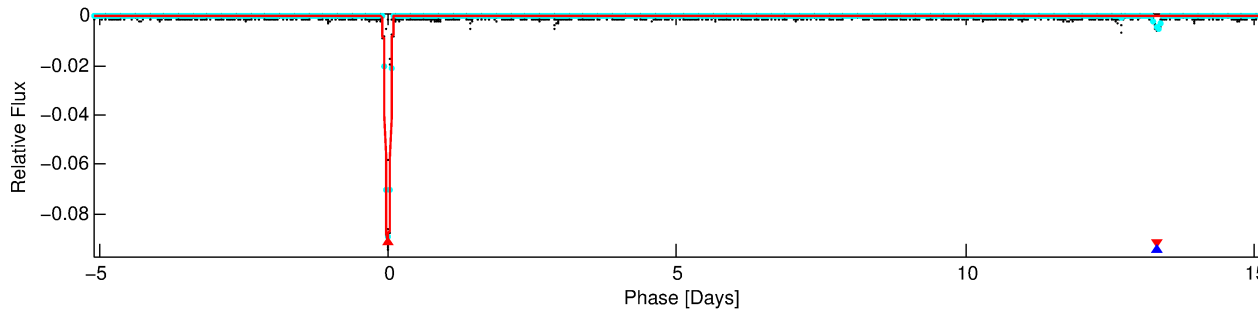
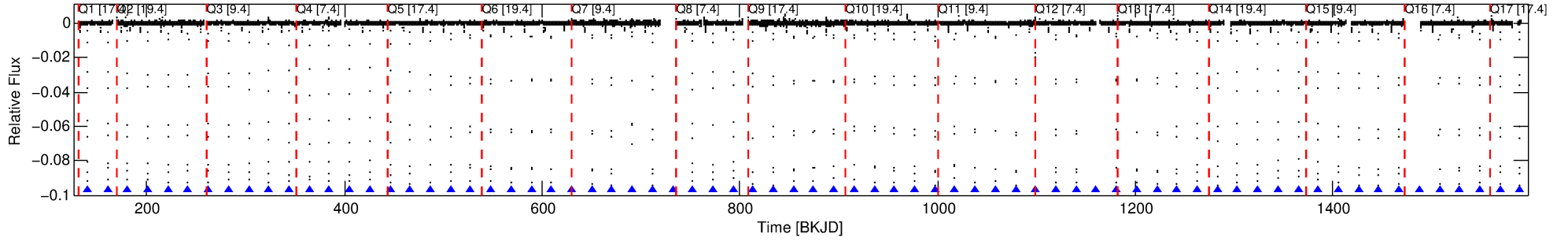
Ephemeris Match Information For 011506235-01

No Significant Match Found

DV One-Page Summary

KIC: 11506235 Candidate: 1 of 2 Period: 20.413 d
KOI: K07454.01 Corr: 1.000

Kp: 14.87 R*: 0.96 Rs Teff: 5941.0 K Logg: 4.49 Fe/H: -0.020



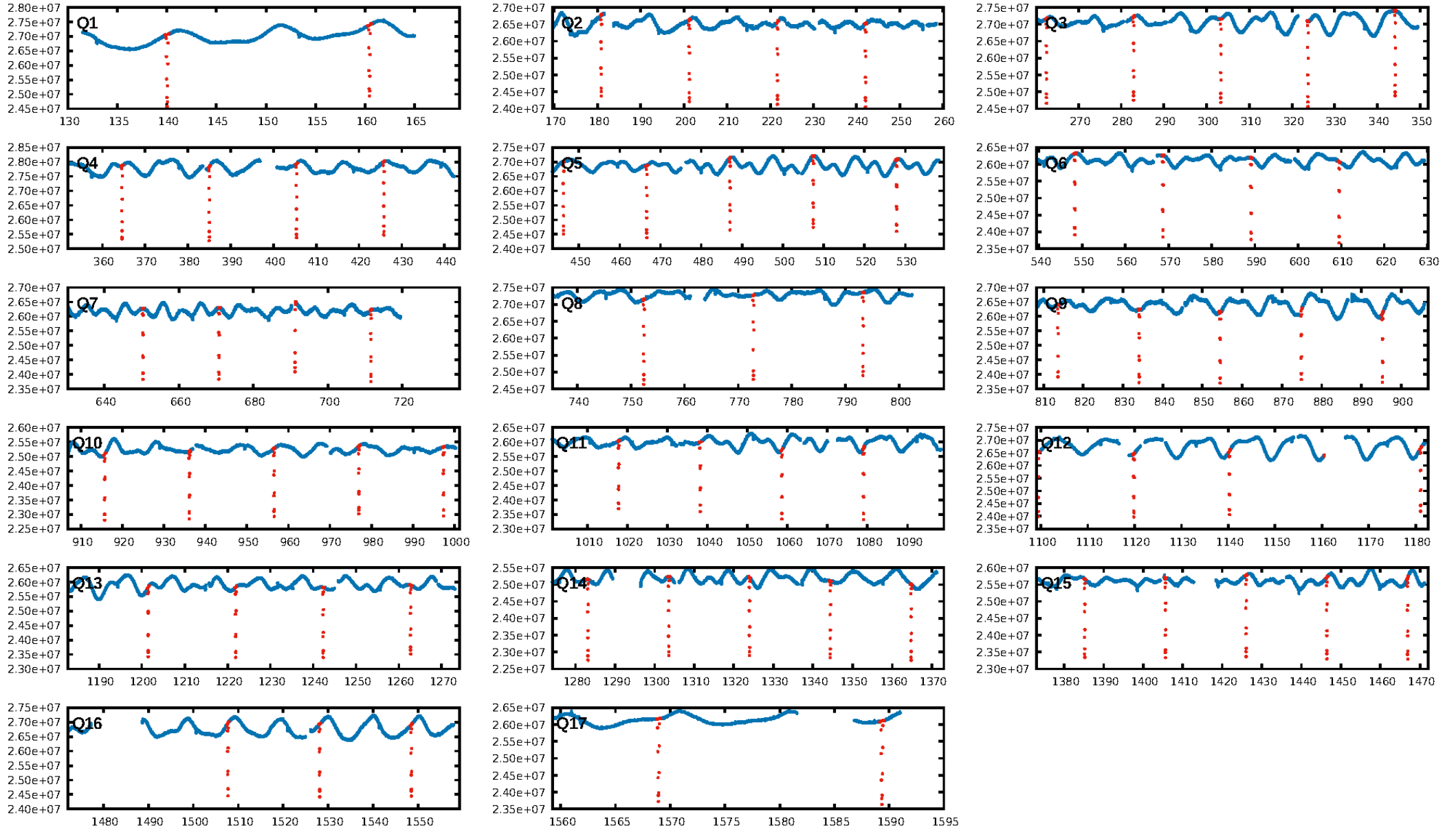
DV Fit Results:

Period = 20.41305 [0.00000] d
Epoch = 140.0169 [0.0000] BKJD
Rp/R* = 0.3330 [0.0015]
a/R* = 37.81 [0.03]
b = 0.78 [0.00]
Seff = 47.23 [19.42]
Teq = 668 [69] K
Rp = 34.99 [10.79] Re
a = 0.1480 [0.0391] AU
Ag = 48.43 [18.91] [2.51σ]
Teffp = 2726 [89] K [18.31σ]

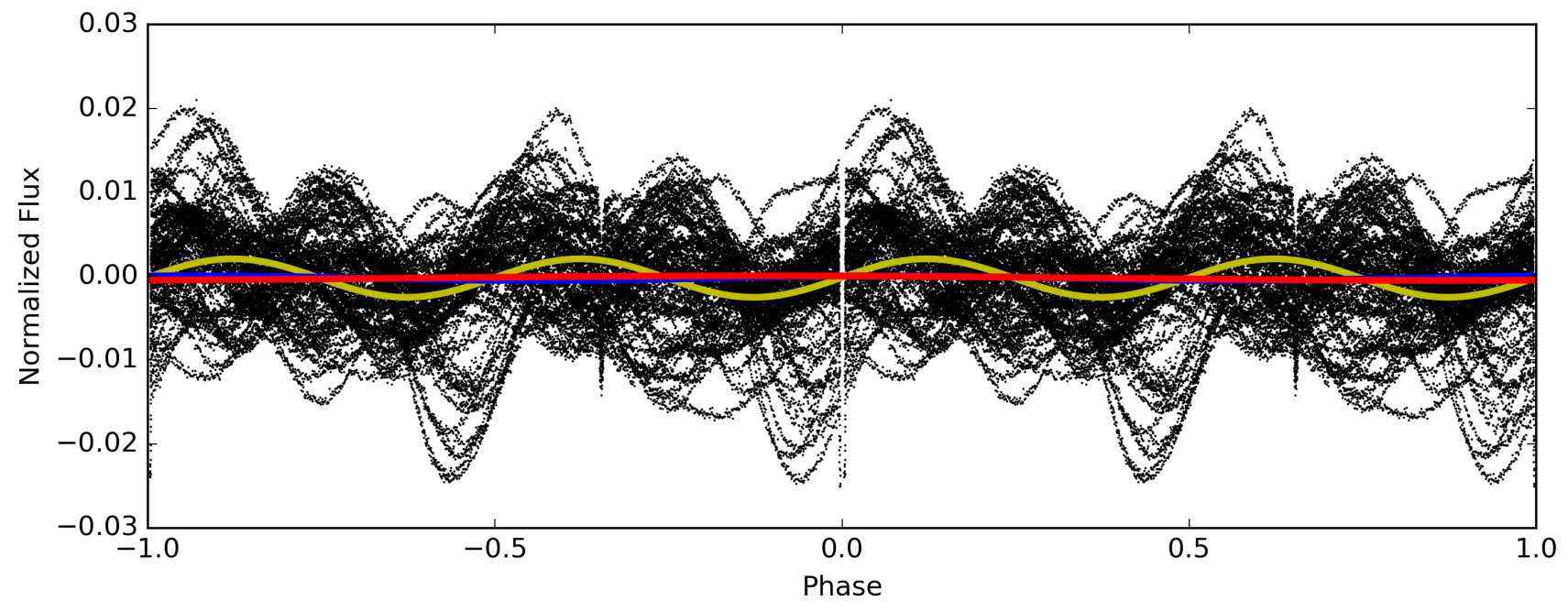
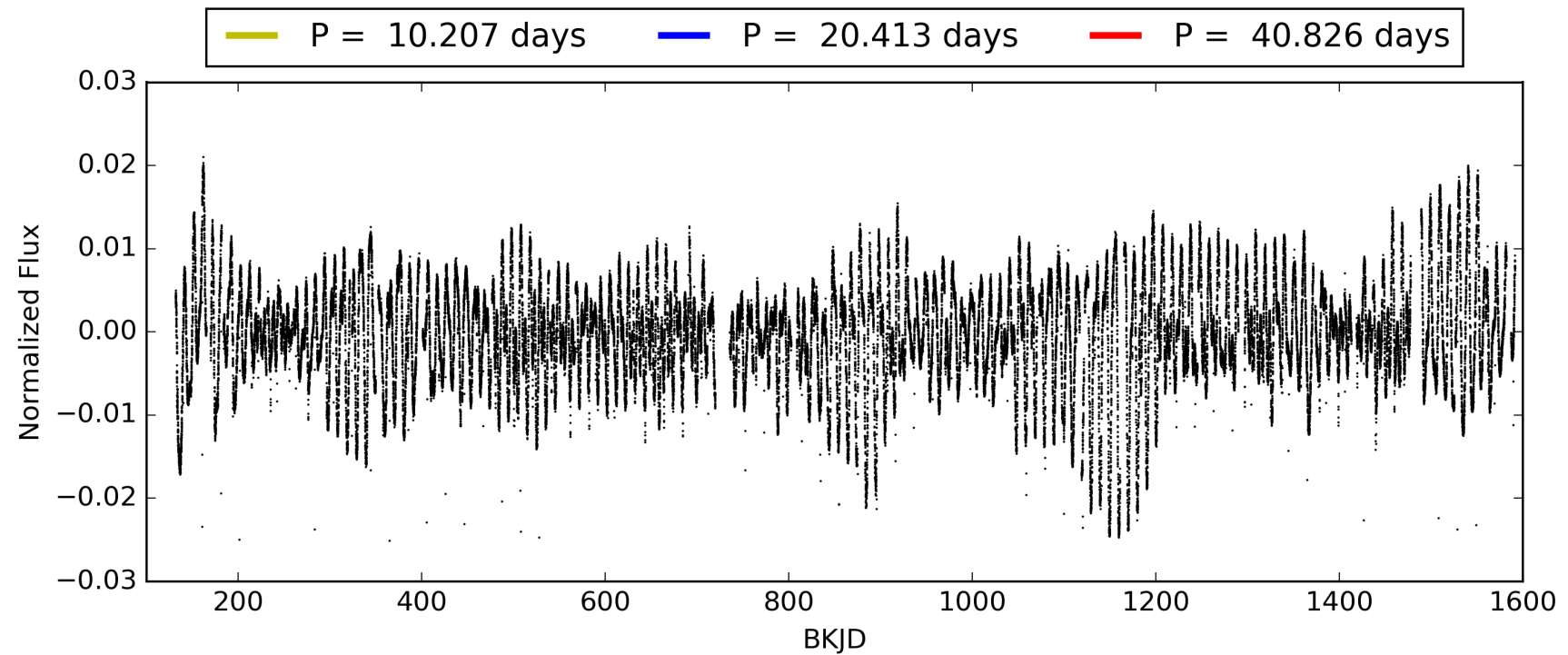
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [64/64]
GhostDiagnostic-chr: 3.058
Centroid-sig: 0.0%
Centroid-so: 0.073 arcsec [23.60σ]
OotOffset-rm: 0.002 arcsec [0.03σ]
KicOffset-rm: 0.038 arcsec [0.57σ]
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 011506235-01, PDC Light Curves

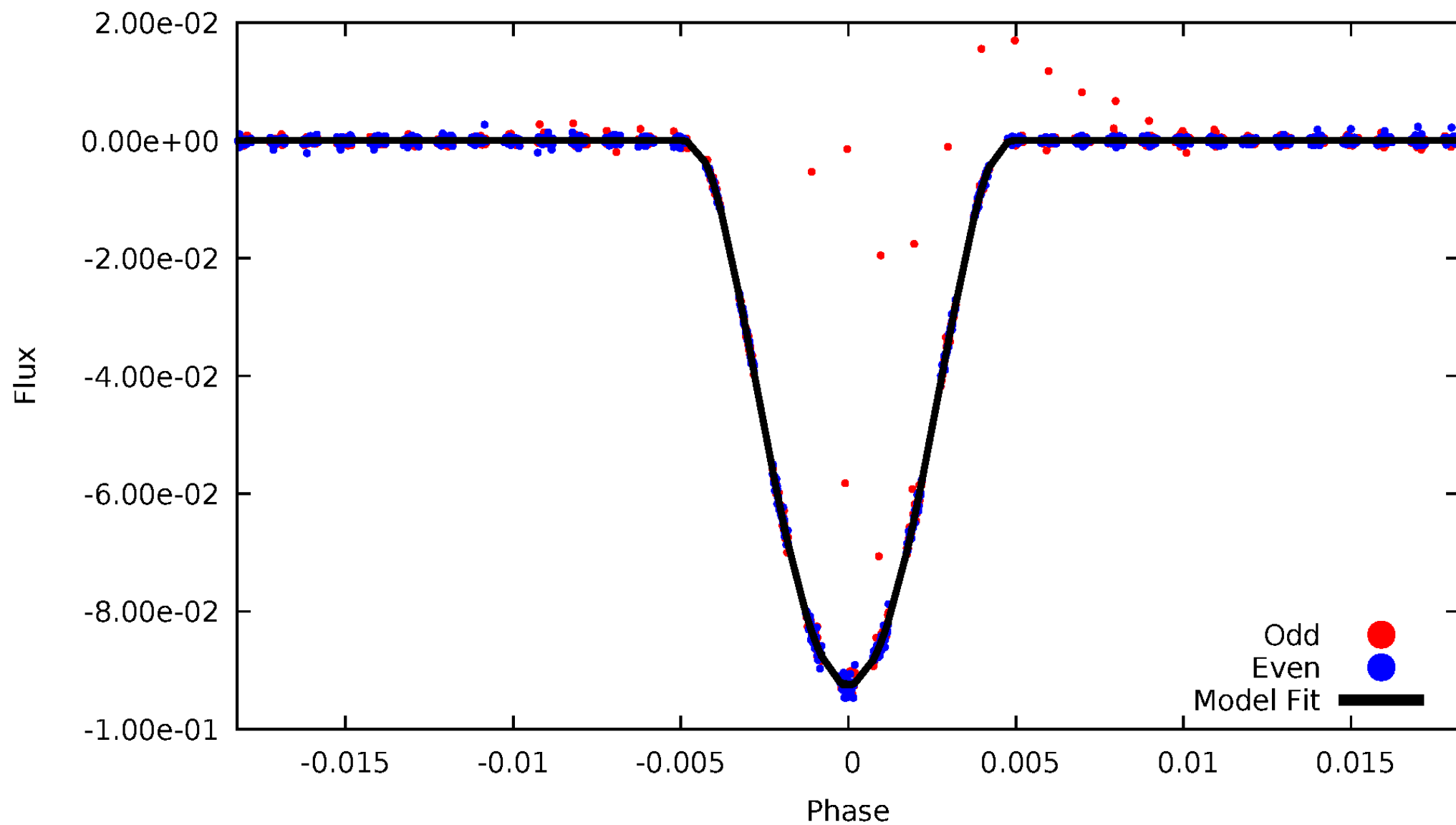


TCE 011506235-01



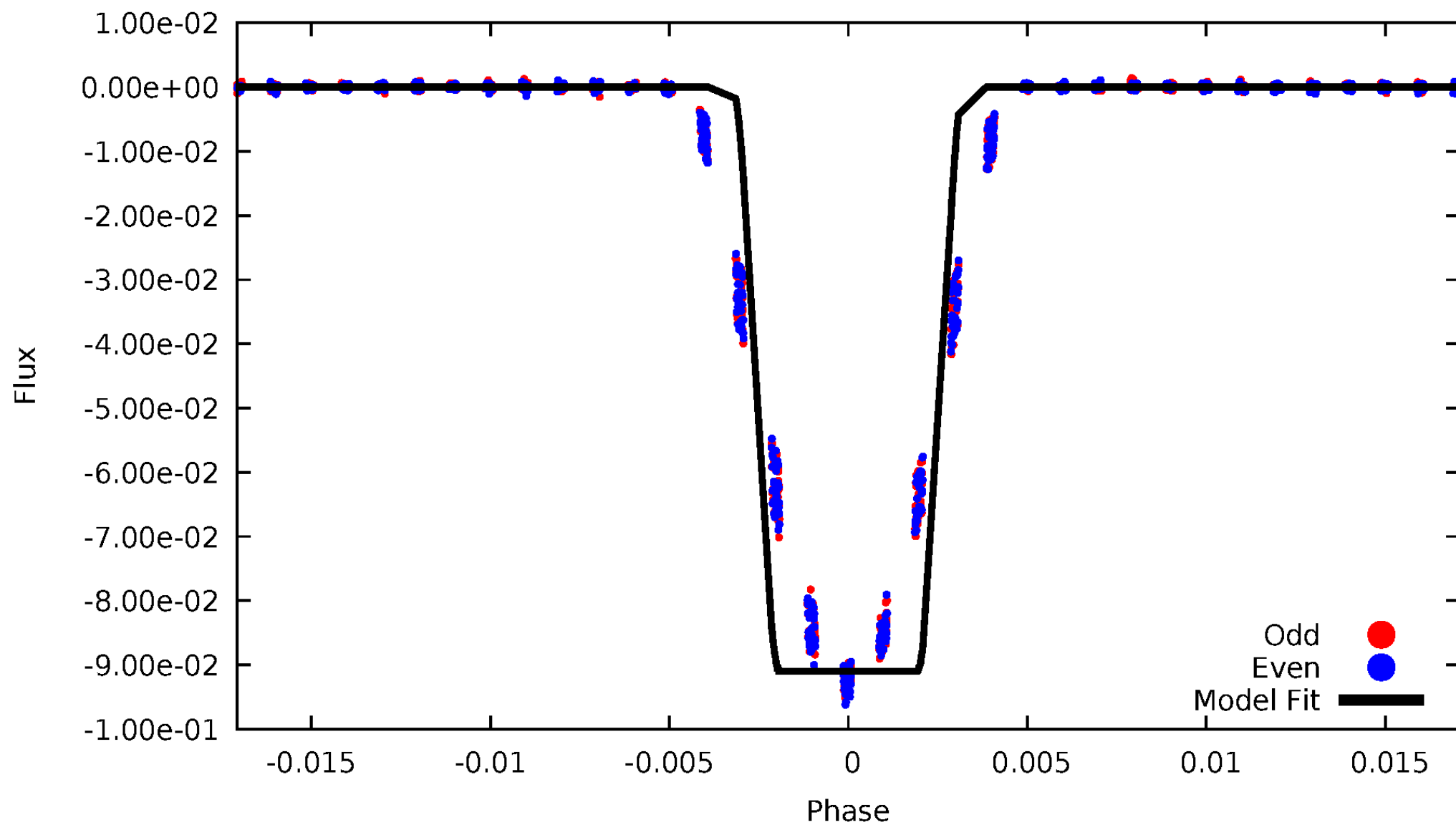
DV Odd/Even

TCE 011506235-01



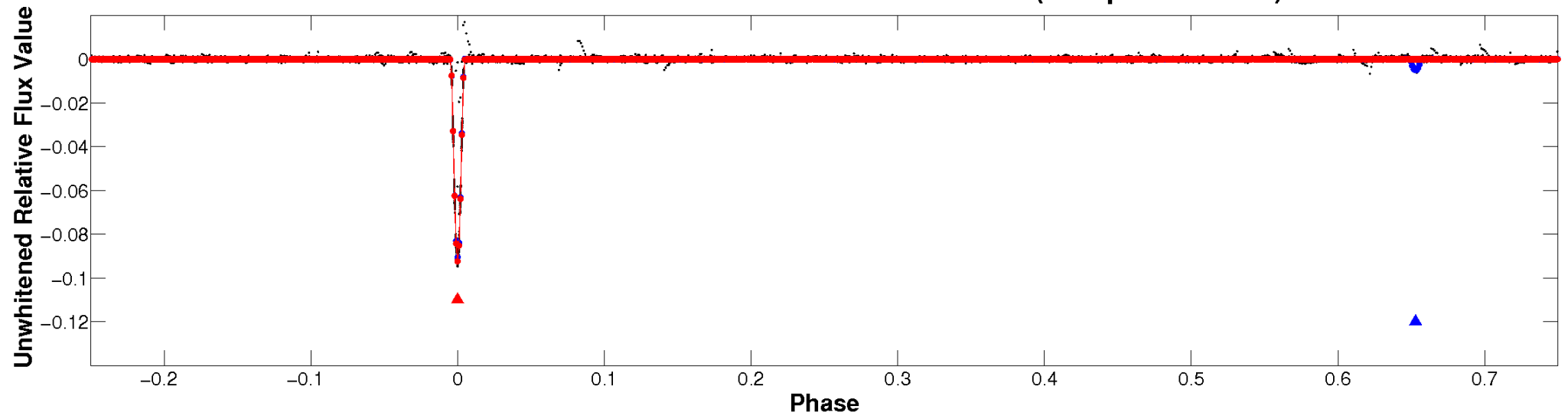
ALT Odd/Even

TCE 011506235-01

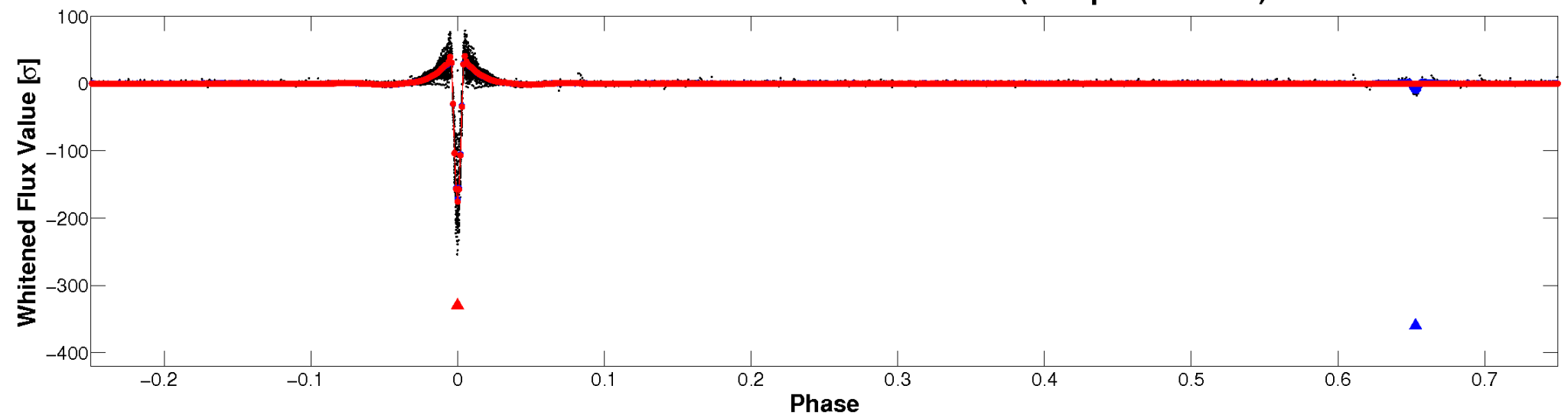


Non-Whitened Vs. Whitened Light Curve

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

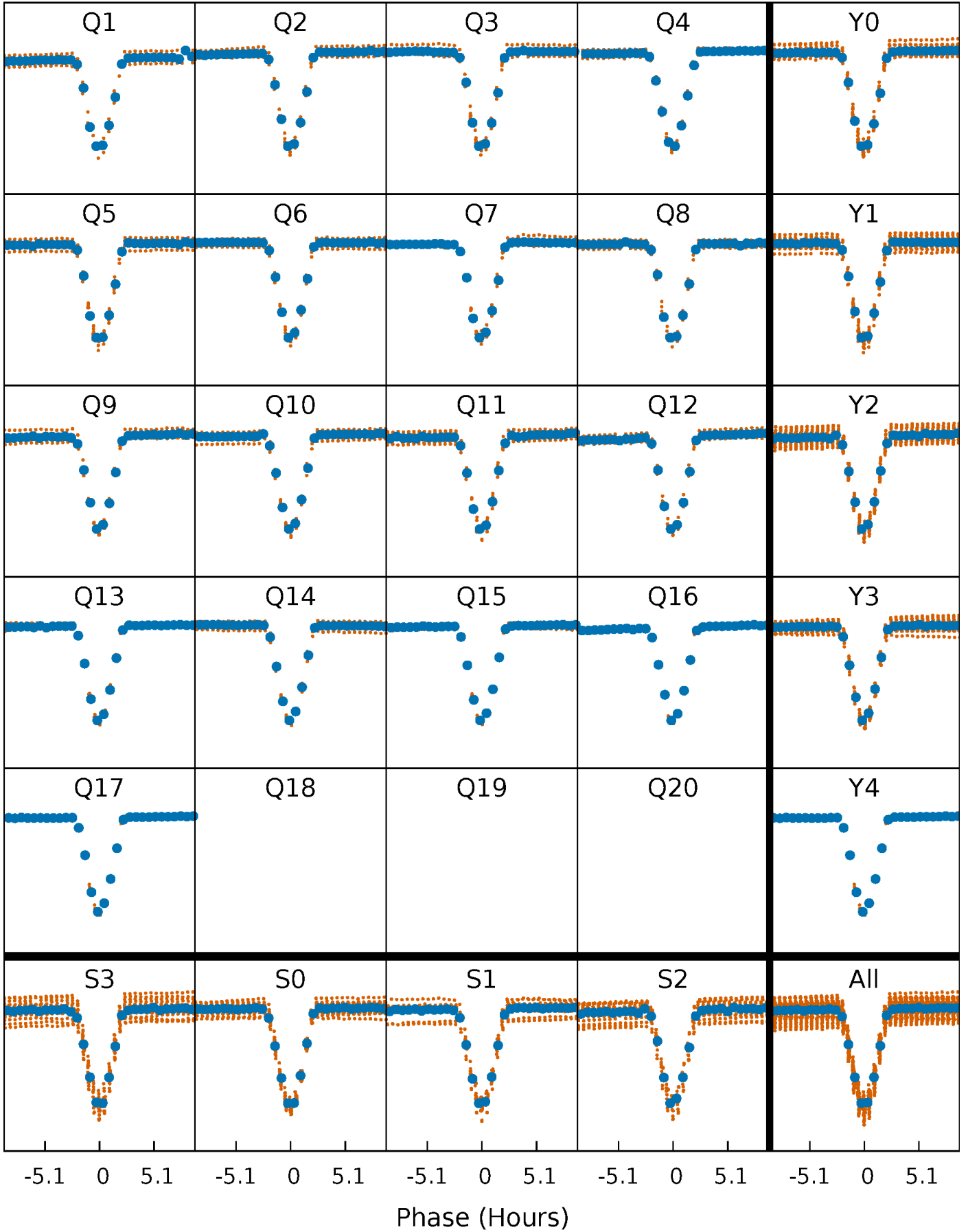


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



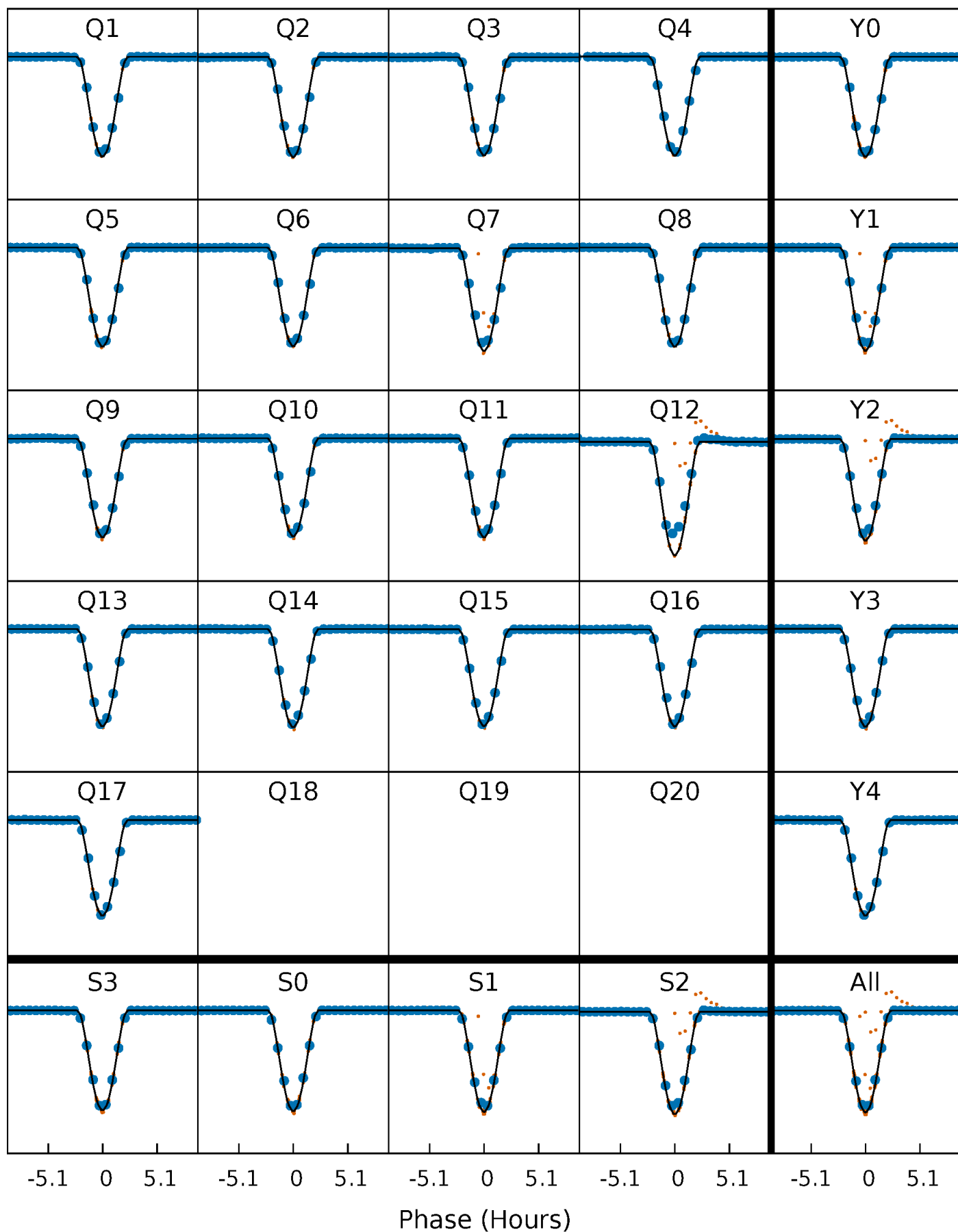
PDC Quarter-Phased Transit Curves

TCE 011506235-01 P= 20.413050 Days $T_0=140.016851$ (BKJD)



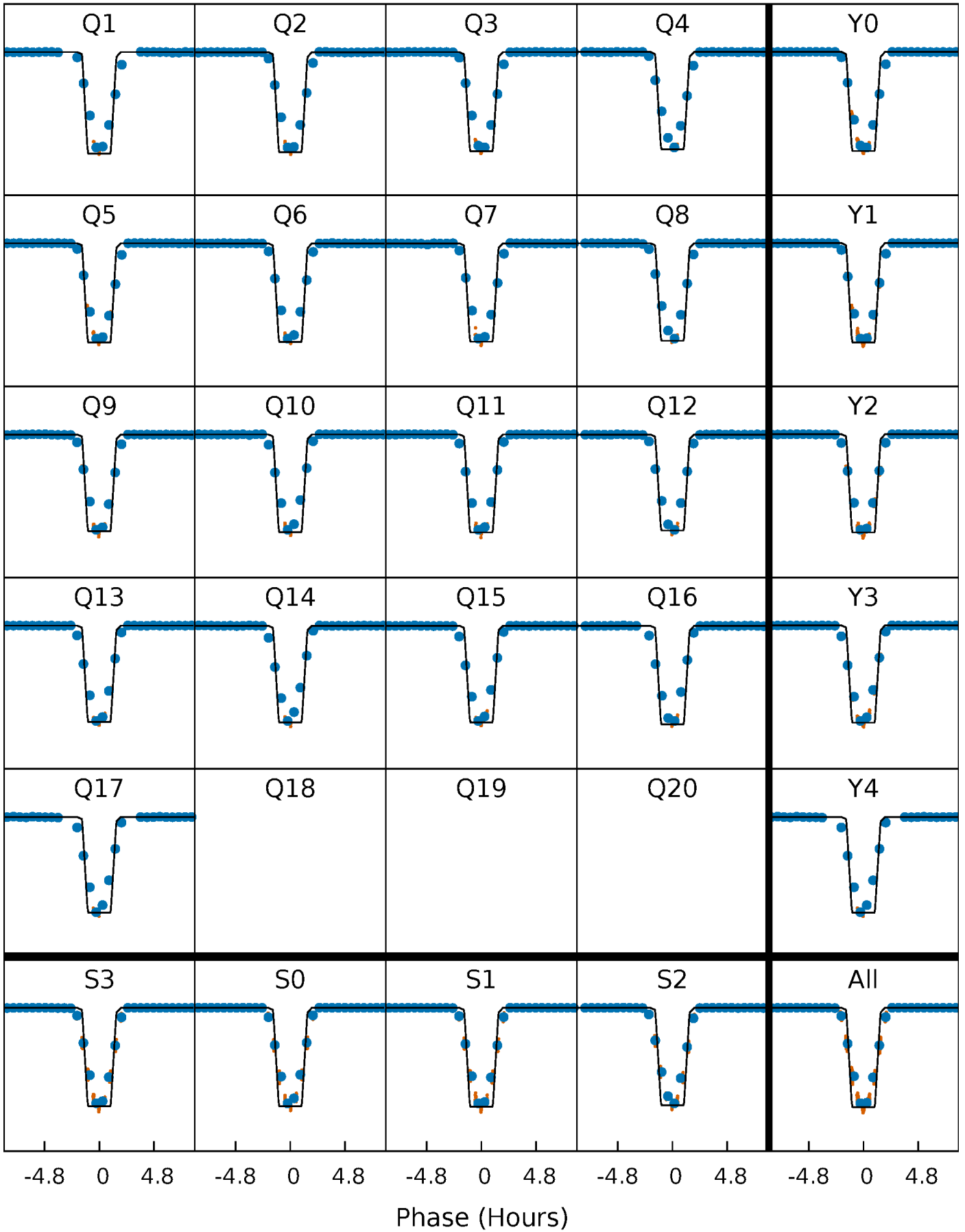
DV Quarter-Phased Transit Curves

TCE 011506235-01 P= 20.413050 Days $T_0=140.016851$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

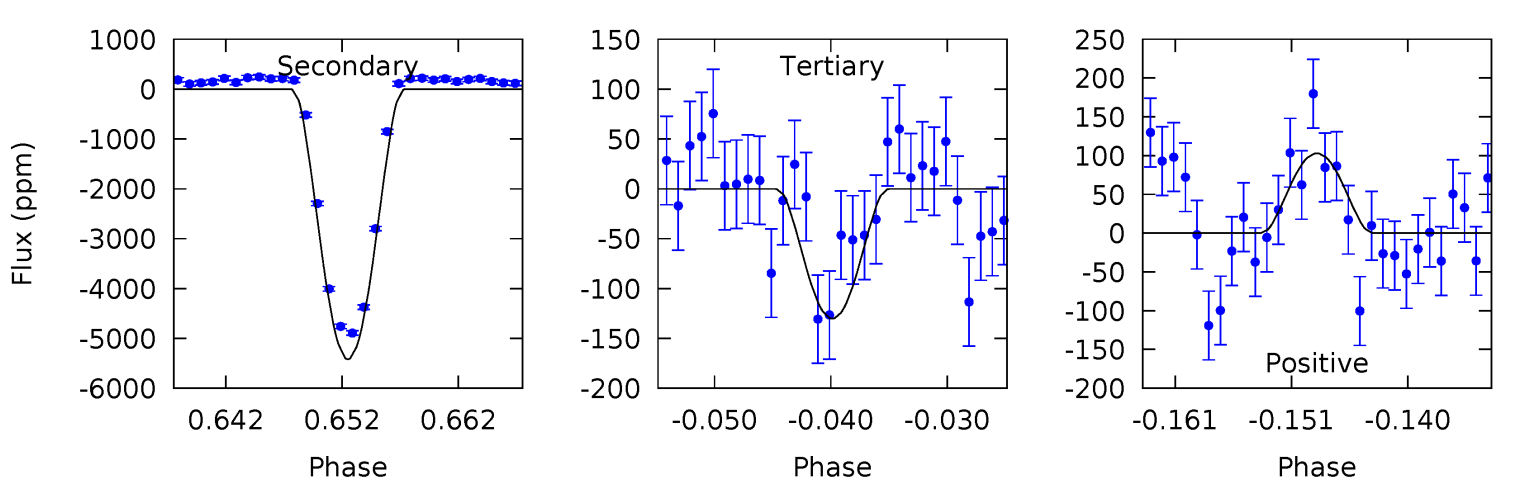
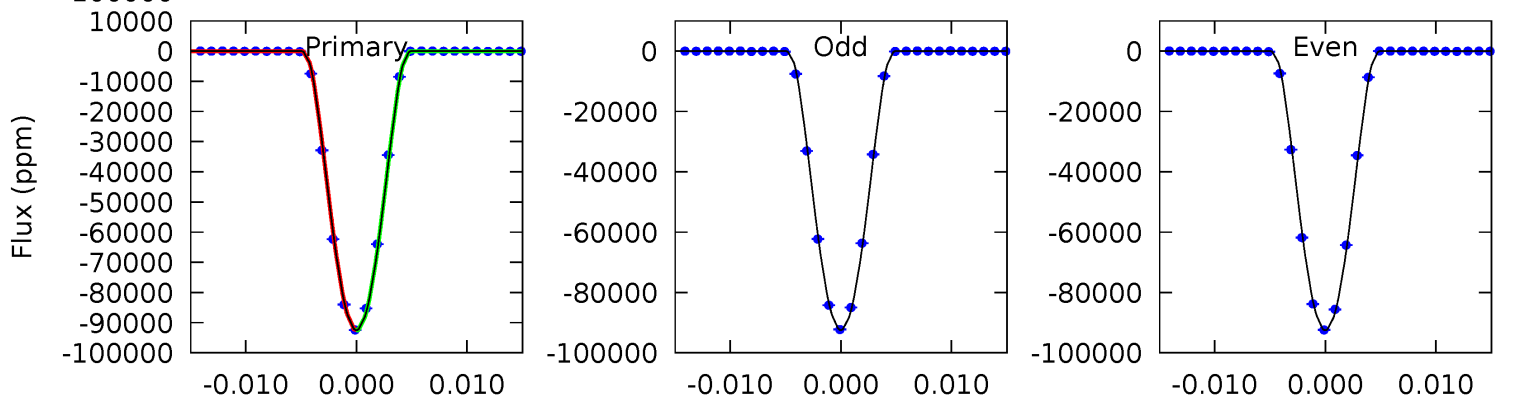
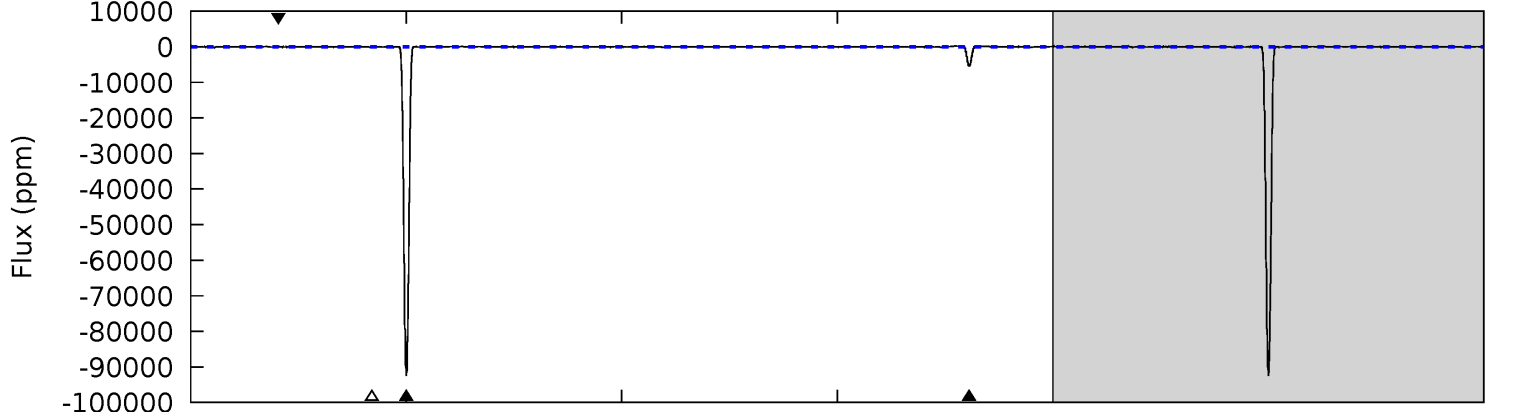
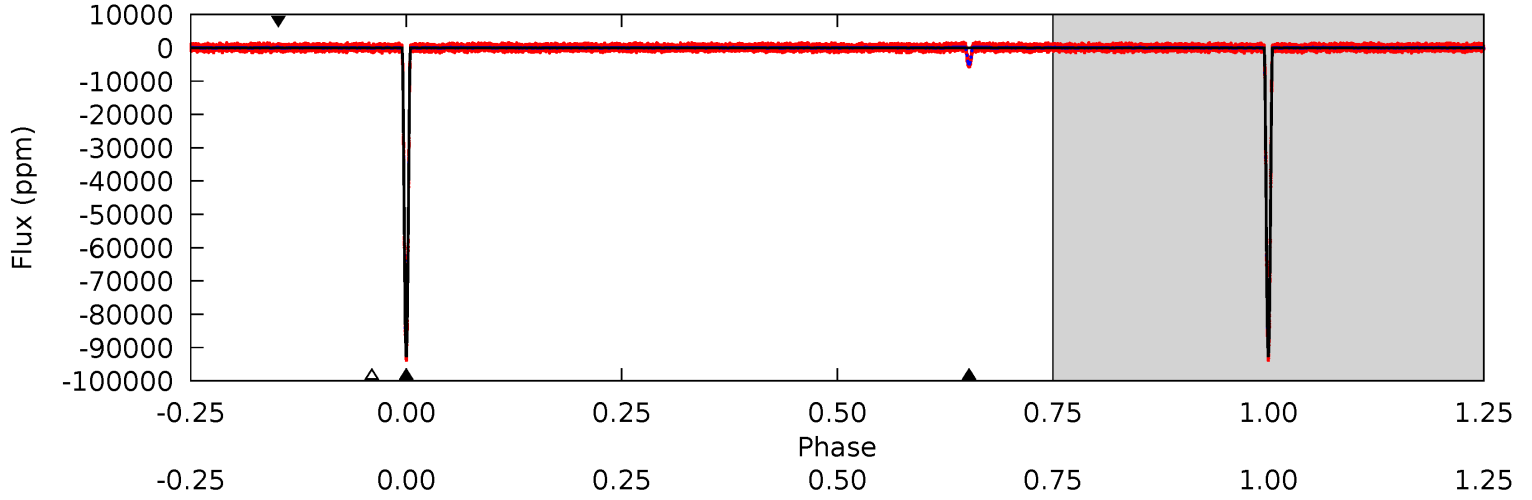
TCE 011506235-01 P= 20.413155 Days $T_0=140.013169$ (BKJD)



DV Model-Shift Uniqueness Test

011506235-01, P = 20.413050 Days, E = 119.603801 Days

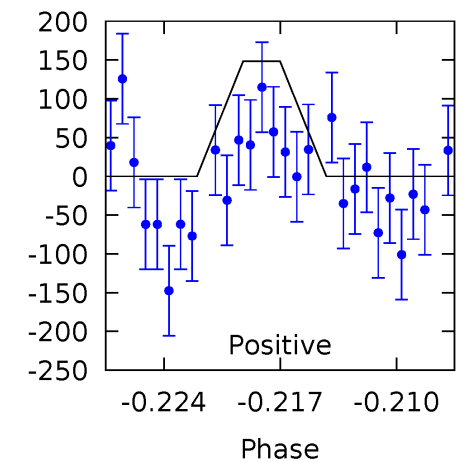
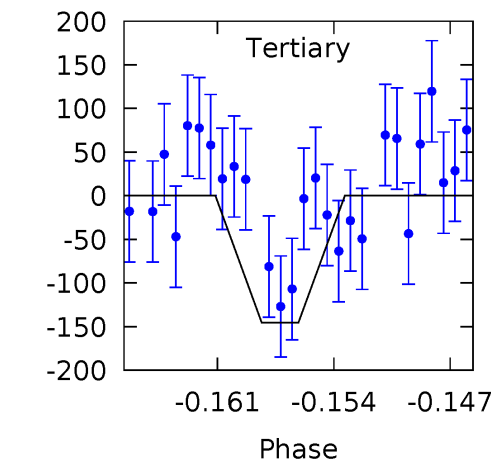
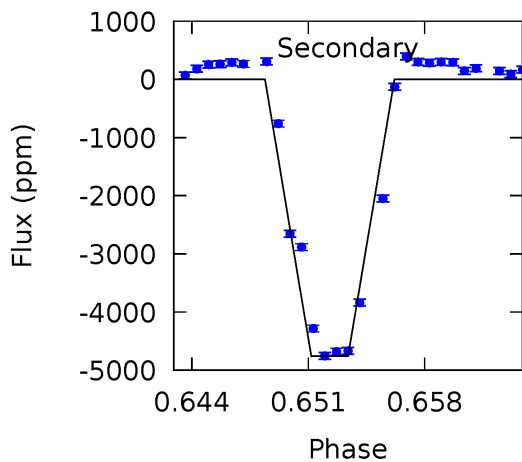
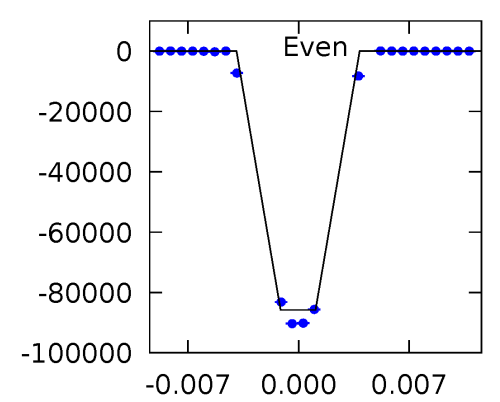
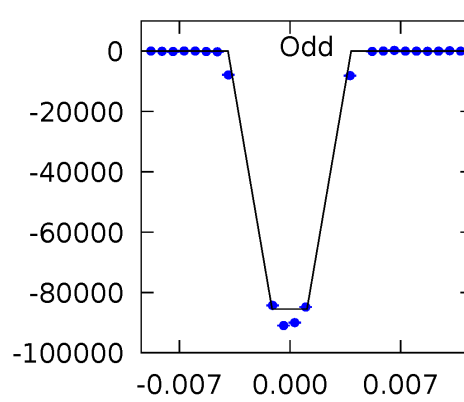
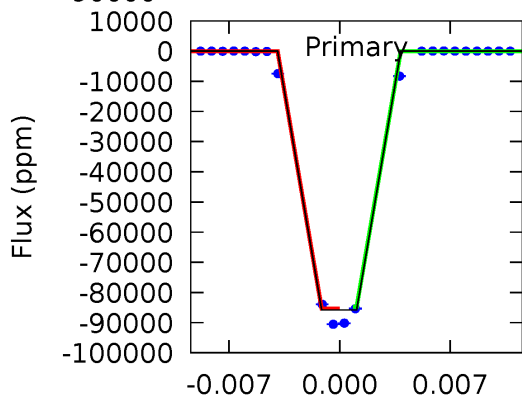
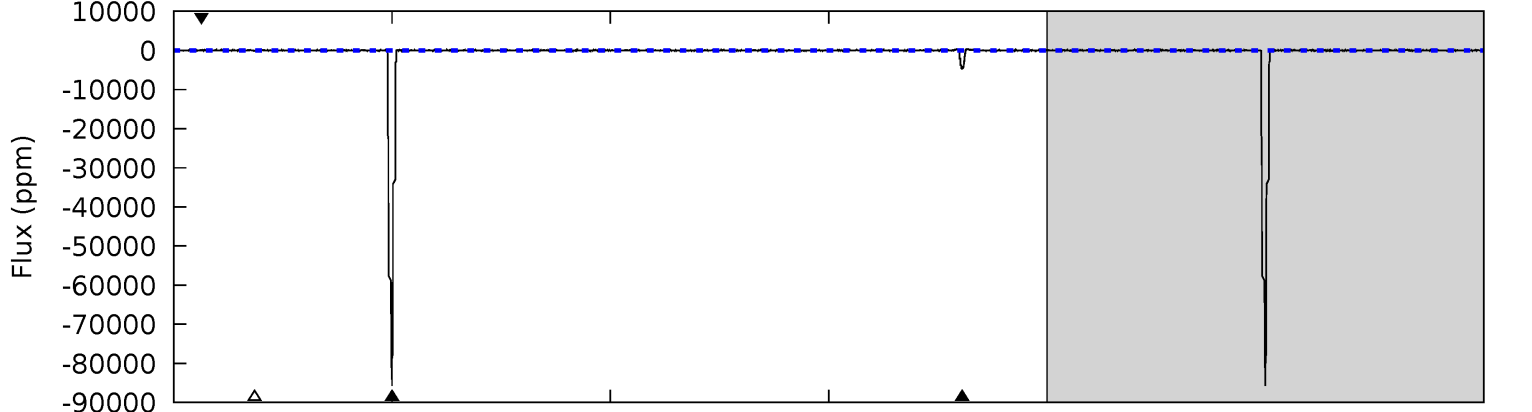
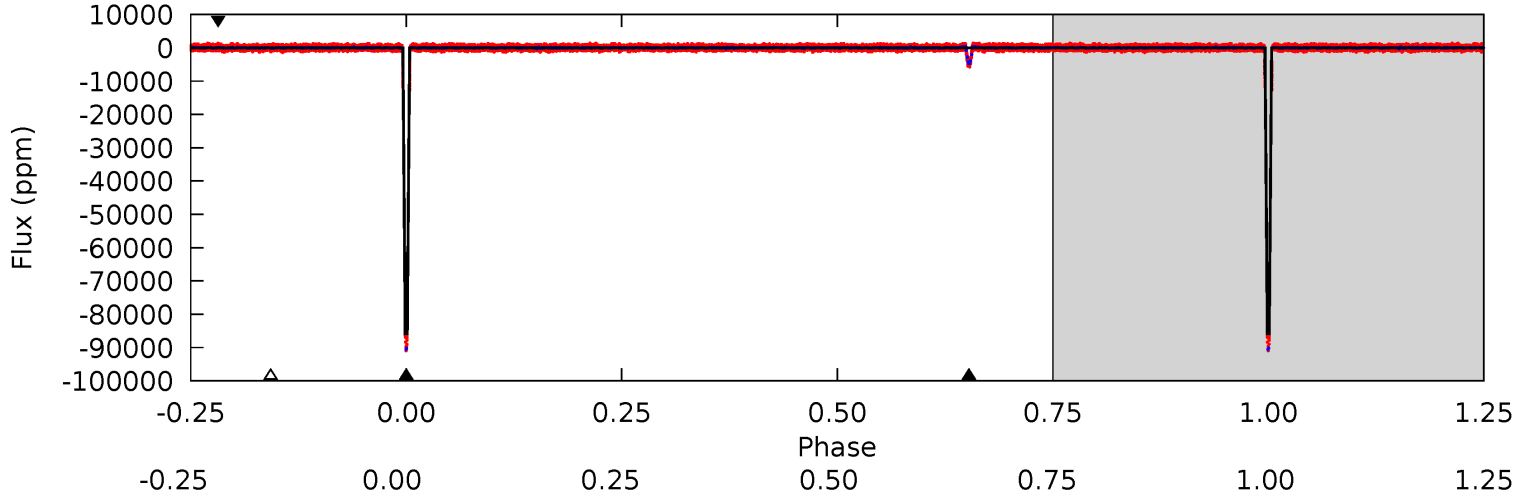
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5963	349.4	8.40	6.63	5.03	2.57	3.03	5954	5956	341.0	342.7	2.60	0.98	0.00	3.94



Alt Model-Shift Uniqueness Test

011506235-01, P = 20.413155 Days, E = 119.600014 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2165	120.0	3.67	3.75	5.09	2.70	1.08	2162	2162	116.4	116.3	3.65	1.00	0.00	0



Stellar Parameters For KIC 011506235

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5941^{+158}_{-193}	$4.487^{+0.054}_{-0.216}$	$-0.020^{+0.250}_{-0.300}$	$0.963^{+0.297}_{-0.099}$	$1.038^{+0.127}_{-0.140}$	$1.637^{+0.367}_{-0.916}$
	+3%/-3%	+1%/-5%	+1250%/-1500%	+31%/-10%	+12%/-13%	+22%/-56%
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 011506235-01 / KOI 7454.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5418 ± 16	$35.56^{+6.31}_{-2.47}$	952^{+69}_{-46}	3337^{+59}_{-74}	50^{+7}_{-12}
Alt.	-4757 ± 40	$32.81^{+5.41}_{-2.74}$	956^{+70}_{-49}	3368^{+60}_{-68}	53^{+8}_{-13}

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

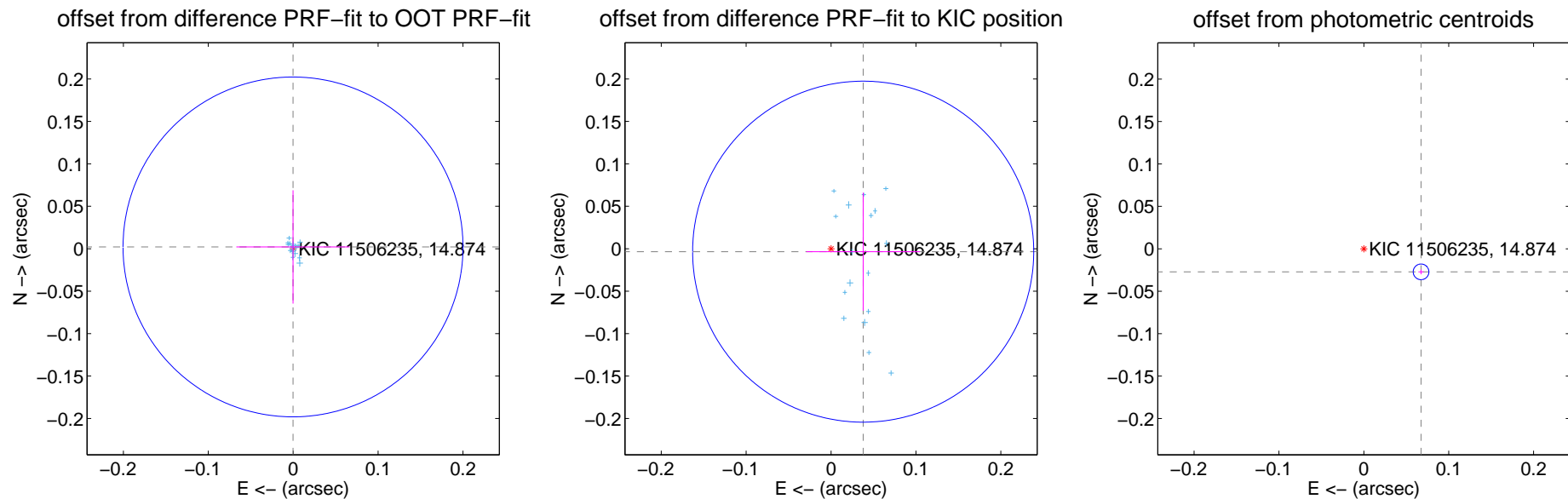
DV Centroid Data

Supplemental centroid analysis for 011506235-01. Kepler magnitude: 14.87. Transit SNR 2397.94

There are 17 quarters with good PRF difference image offsets

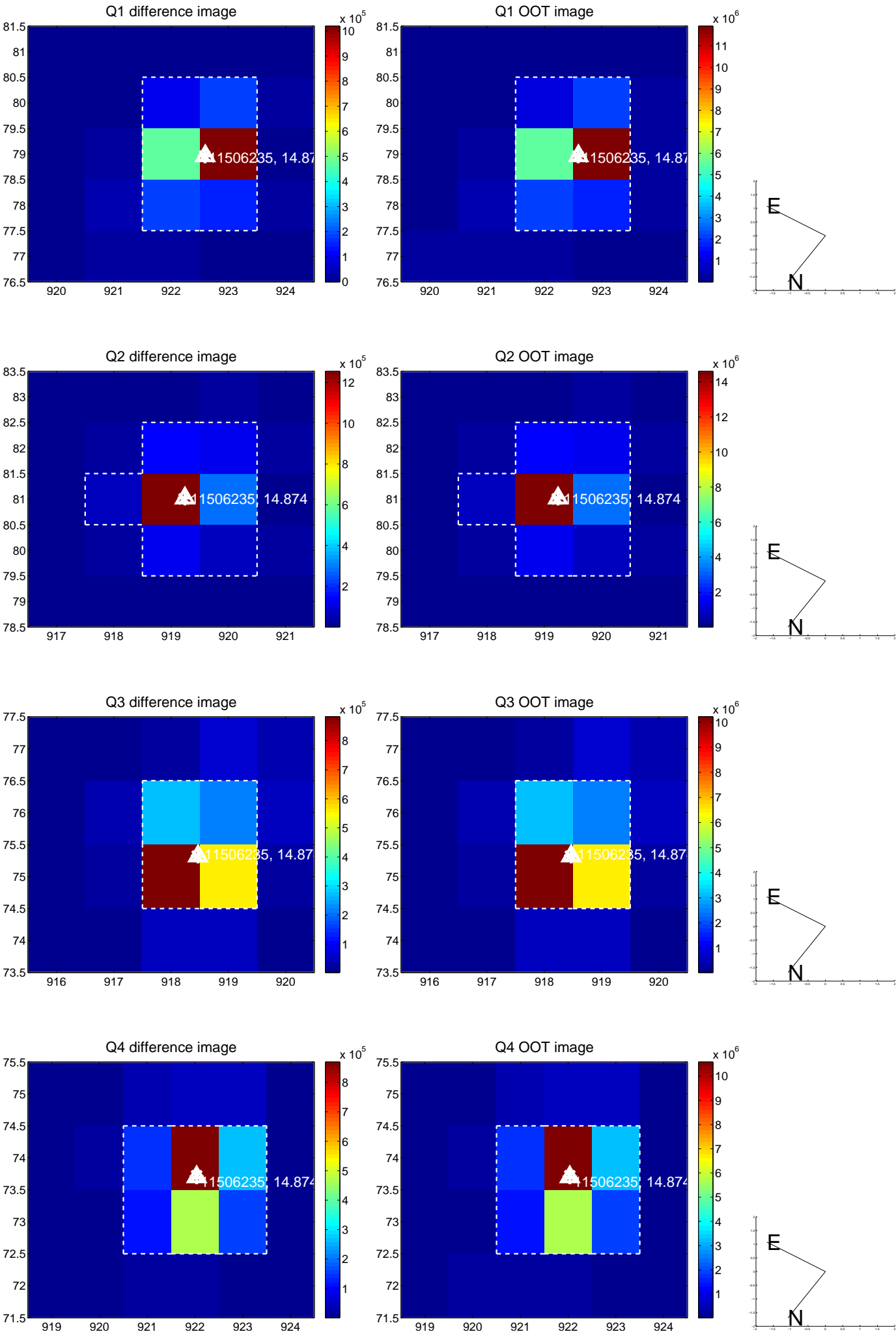
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.002 ± 0.067	0.03	0.000 ± 0.067	0.002 ± 0.067
PRF-fit source offset from KIC position	0.038 ± 0.067	0.57	-0.038 ± 0.067	-0.003 ± 0.069
photometric centroid source offset	0.07 ± 0.00	23.60	-0.07 ± 0.00	-0.03 ± 0.00

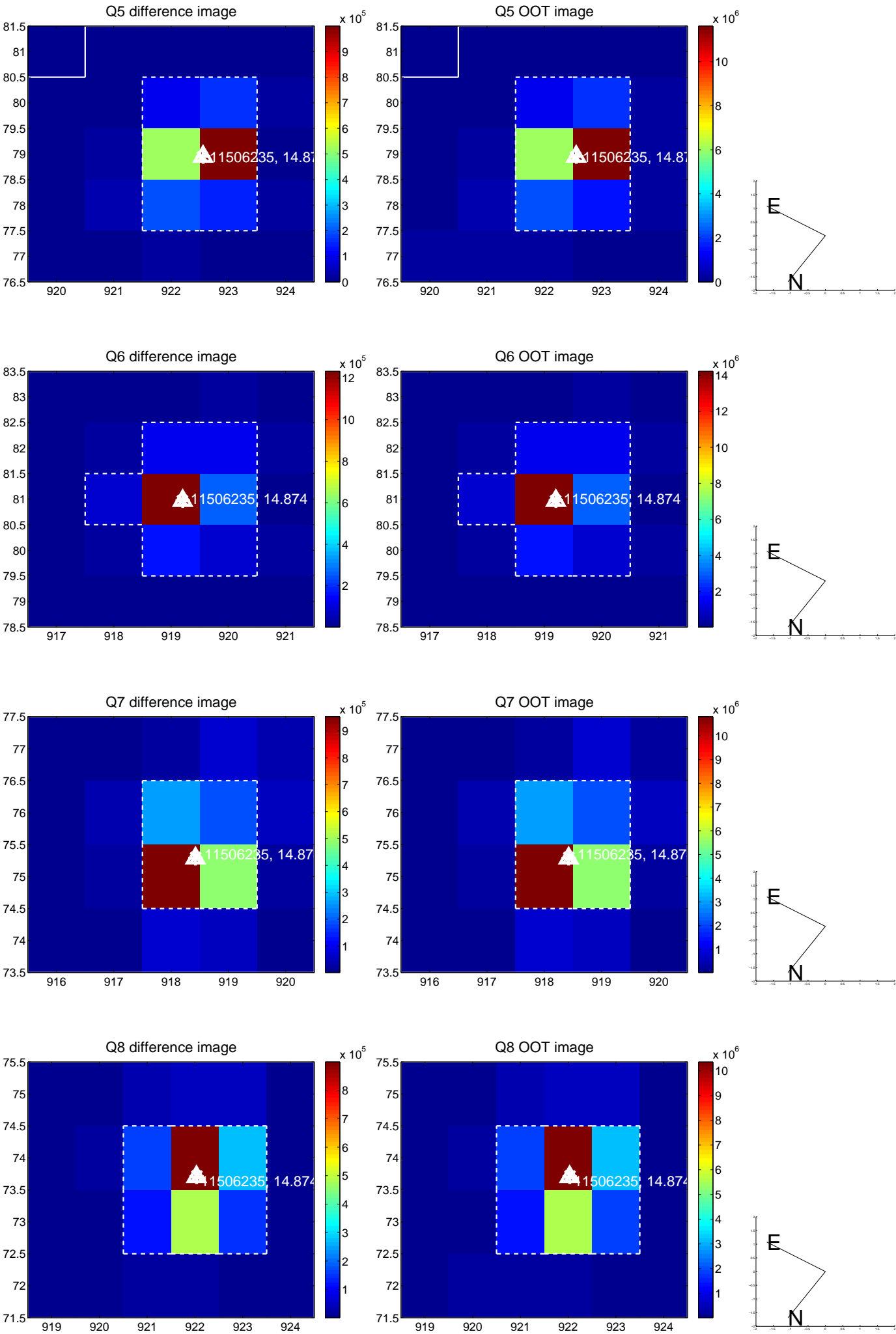


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

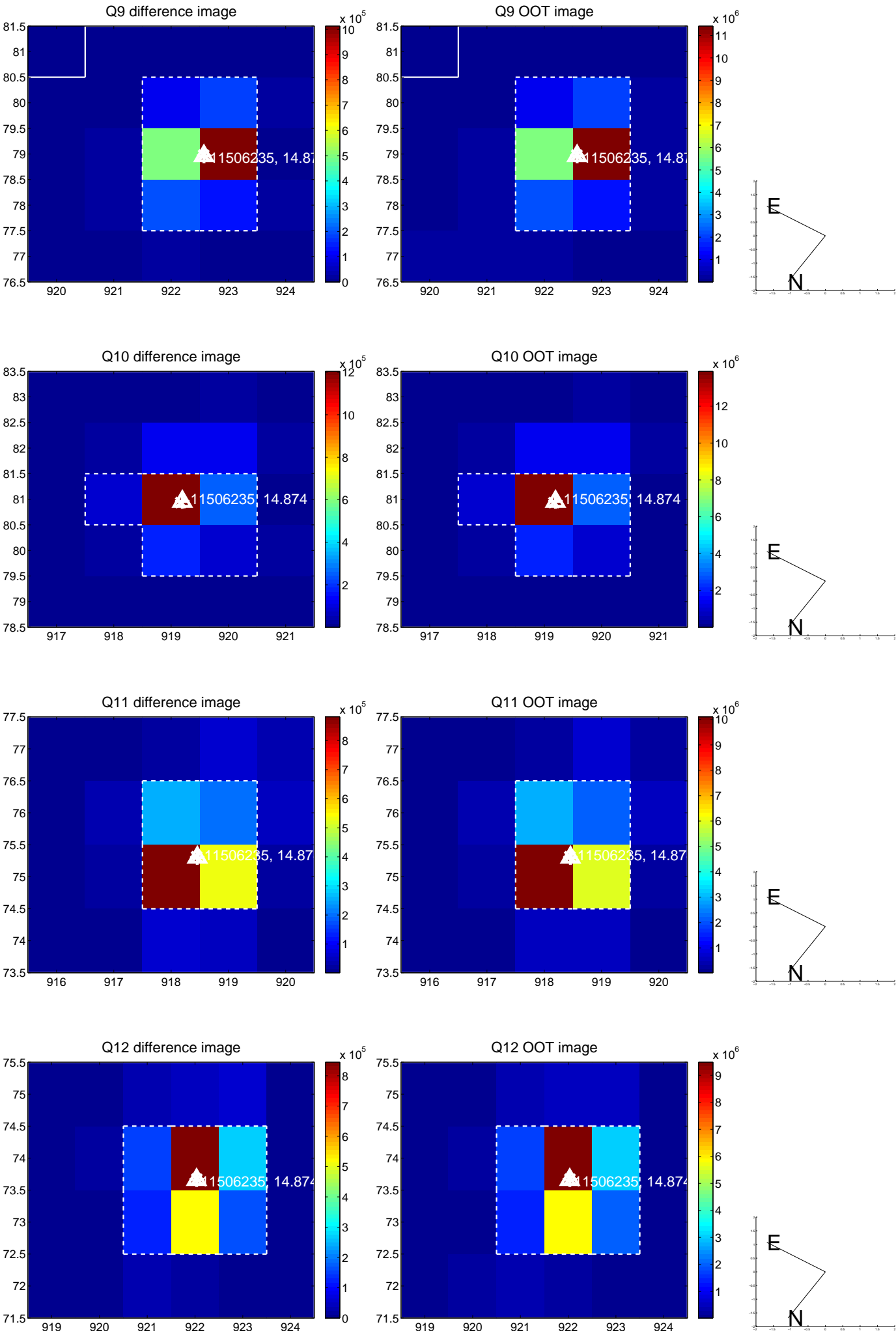
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



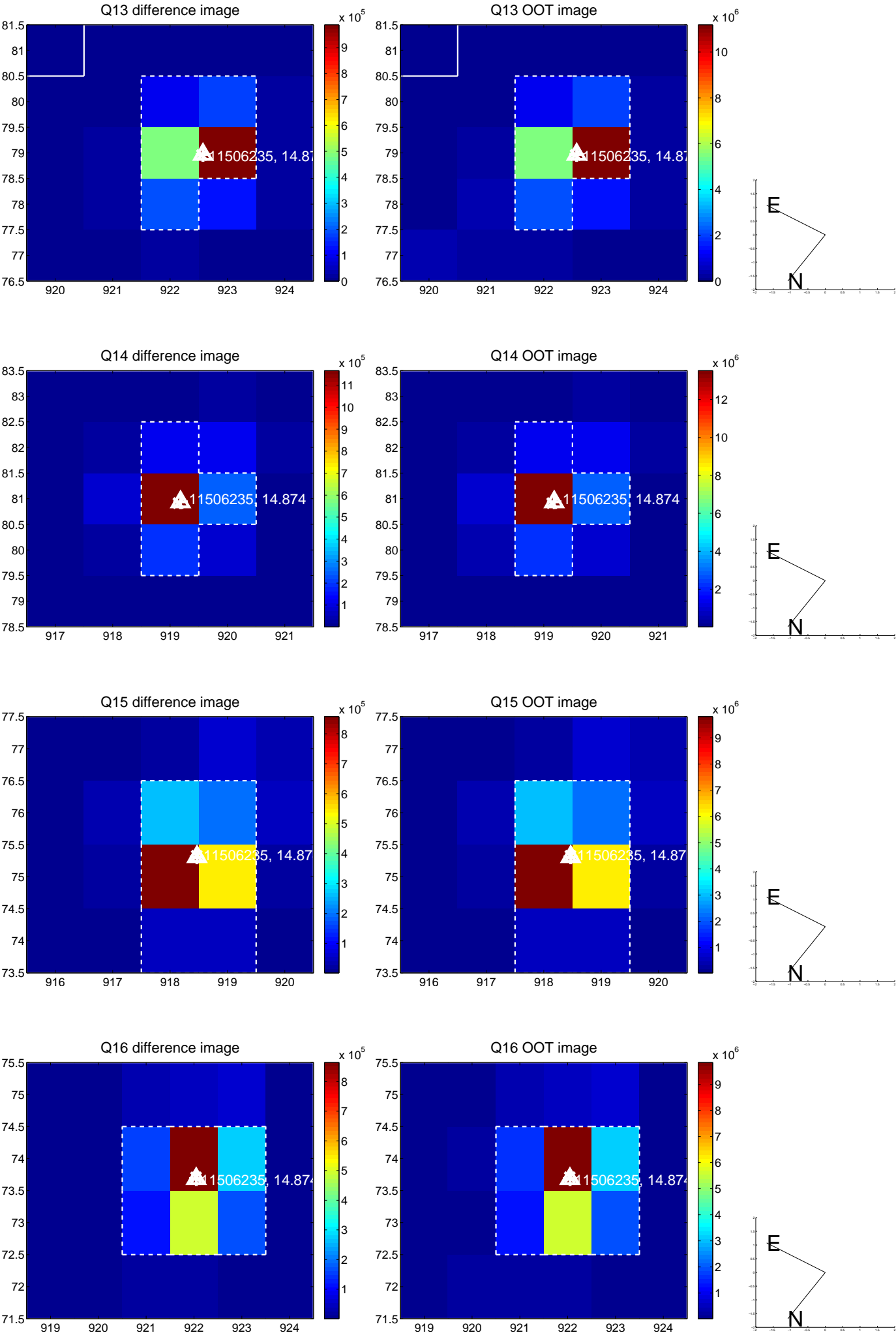
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



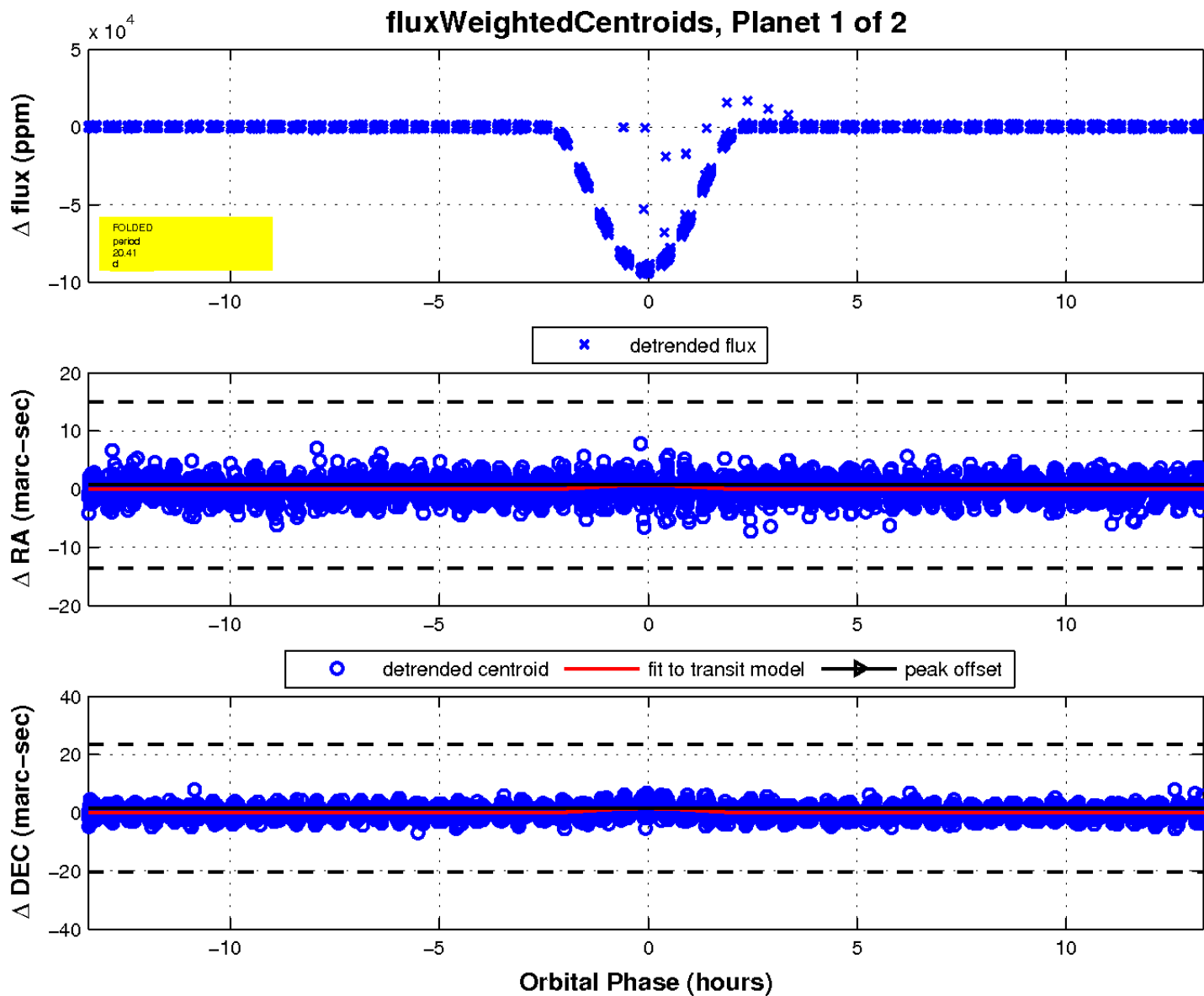
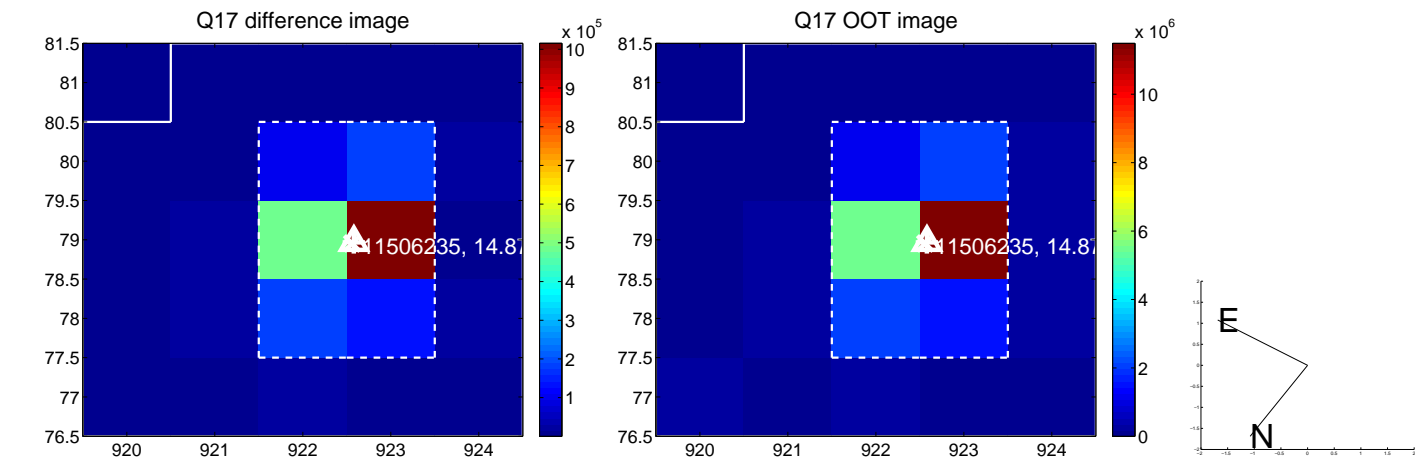
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

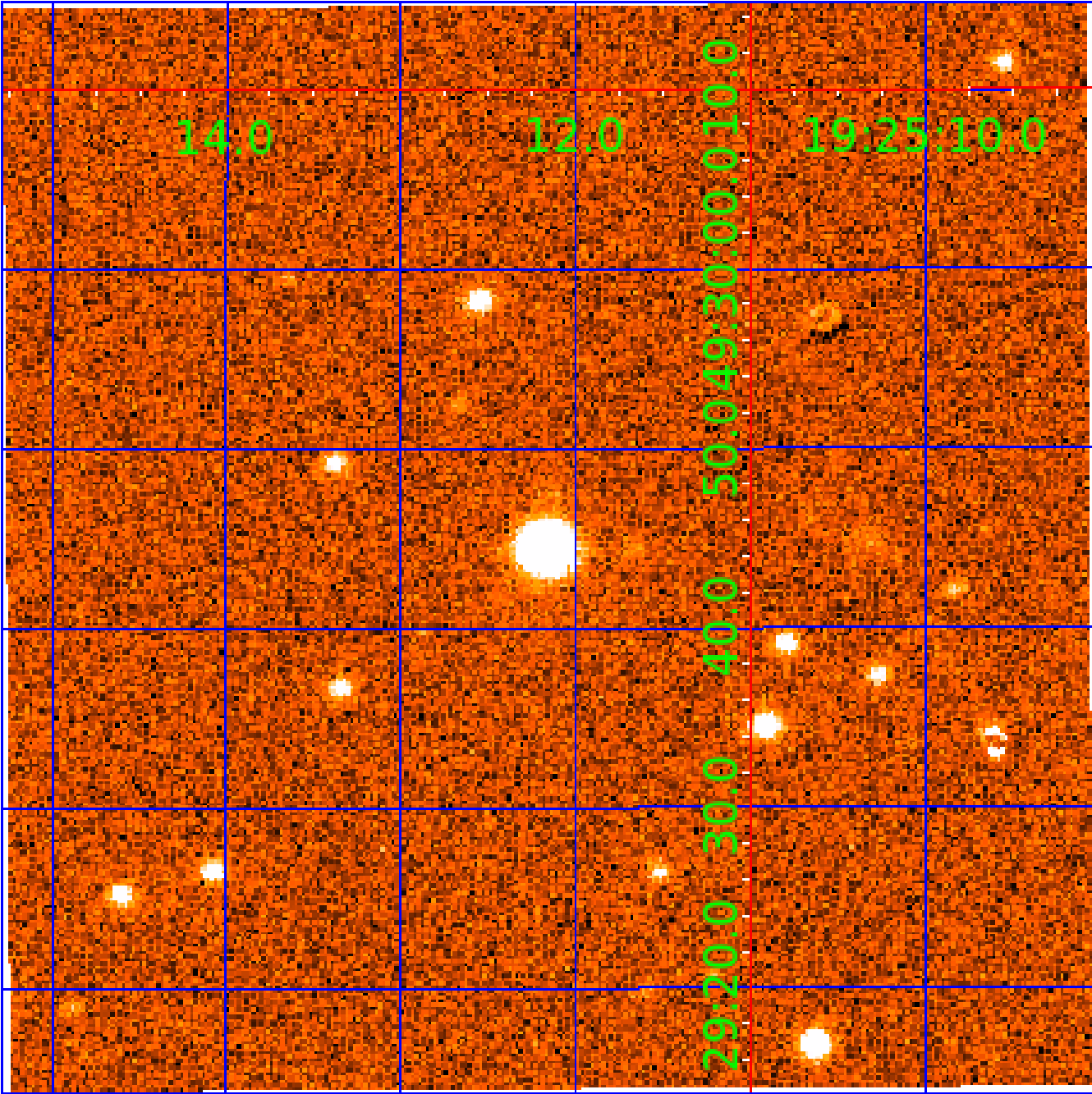


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011506235

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})
011506235-01	OBS	7454.01	20.413050	140.016851	92461.3	4.467	2878.1	2397.9	0.96	5941	34.99	47.23
011506235-02	OBS	No	20.413046	132.932384	5188.6	3.963	171.2	170.3	0.96	5941	8.44	47.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011506235-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011506235-02	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.

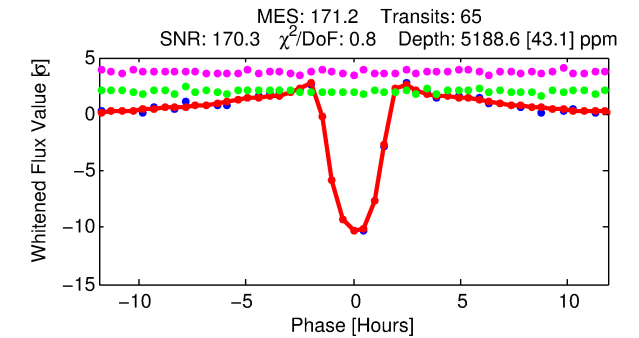
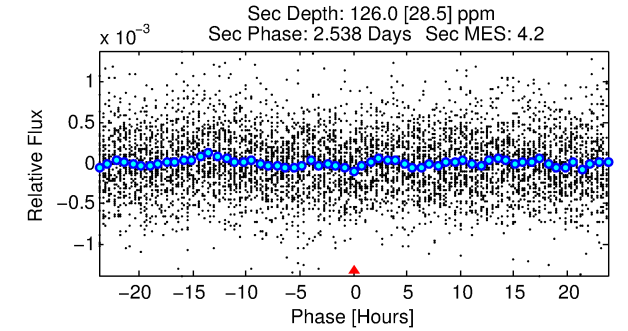
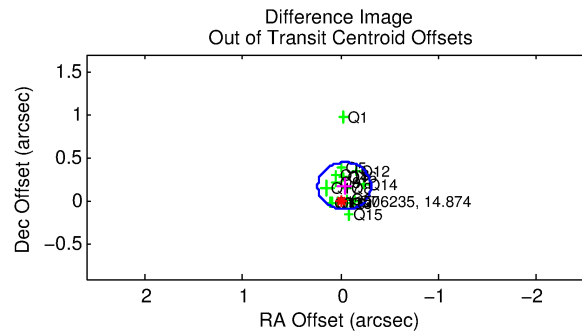
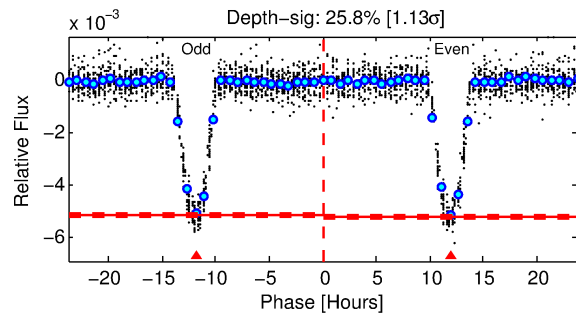
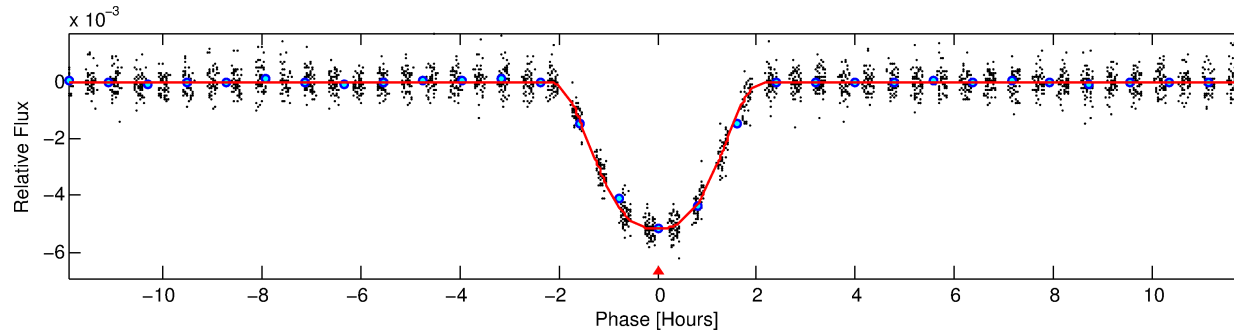
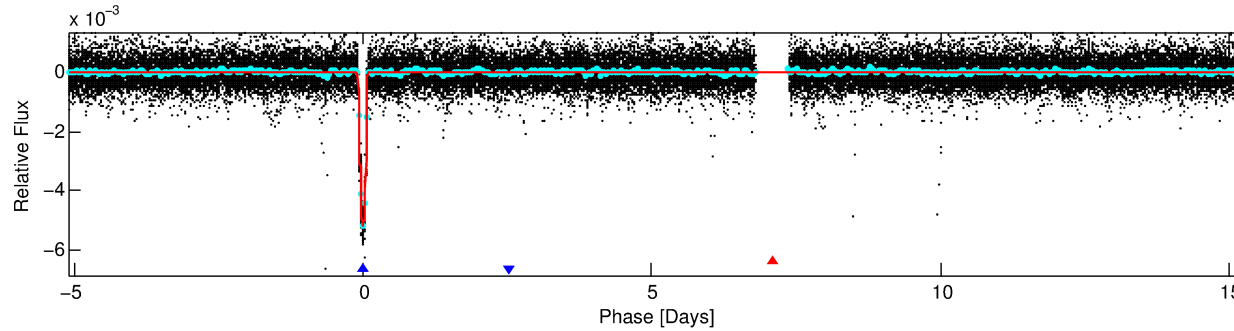
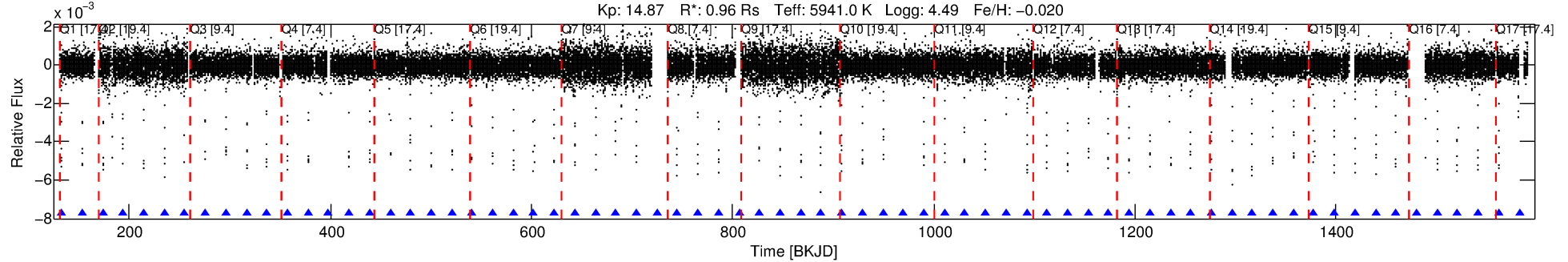
Ephemeris Match Information For 011506235-02

No Significant Match Found

DV One-Page Summary

KIC: 11506235 Candidate: 2 of 2 Period: 20.413 d
KOI: K07454 Corr: No Ephemeris Match

Kp: 14.87 R*: 0.96 Rs Teff: 5941.0 K Logg: 4.49 Fe/H: -0.020



DV Fit Results:

Period = 20.41305 [0.00001] d
Epoch = 132.9324 [0.0004] BKJD
Rp/R* = 0.0804 [0.0005]
a/R* = 22.54 [0.22]
b = 0.92 [0.00]
Seff = 47.23 [19.42]
Teq = 668 [69] K
Rp = 8.44 [2.60] Re
a = 0.1480 [0.0391] AU
Ag = 21.31 [9.61] [2.11σ]
Teffp = 2221 [145] K [9.67σ]

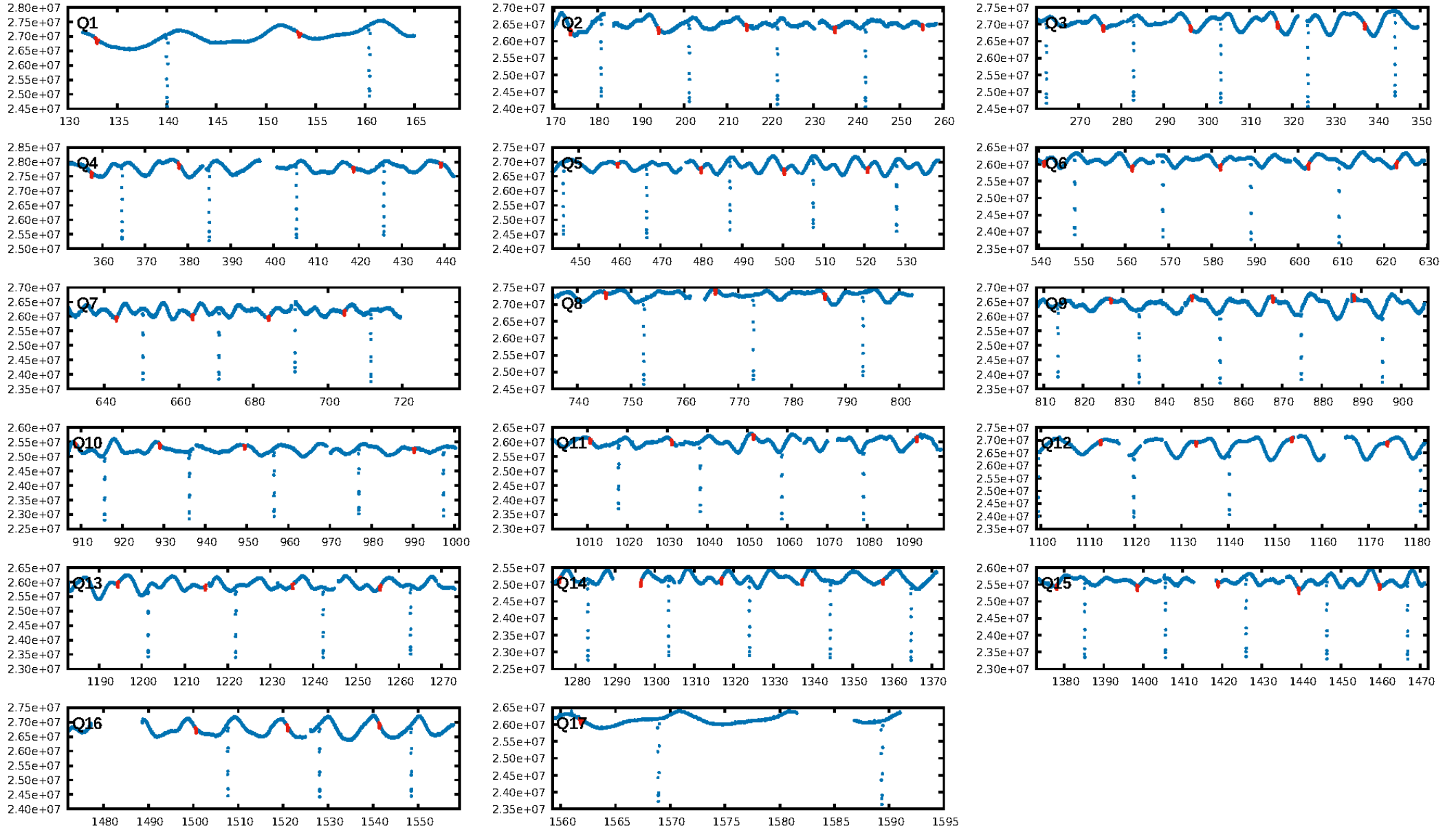
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 88.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [62/62]
GhostDiagnostic-chr: 2.645
Centroid-sig: 0.0%
Centroid-so: 0.182 arcsec [3.43σ]
OotOffset-rm: 0.181 arcsec [2.00σ]
KicOffset-rm: 0.186 arcsec [2.16σ]
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]

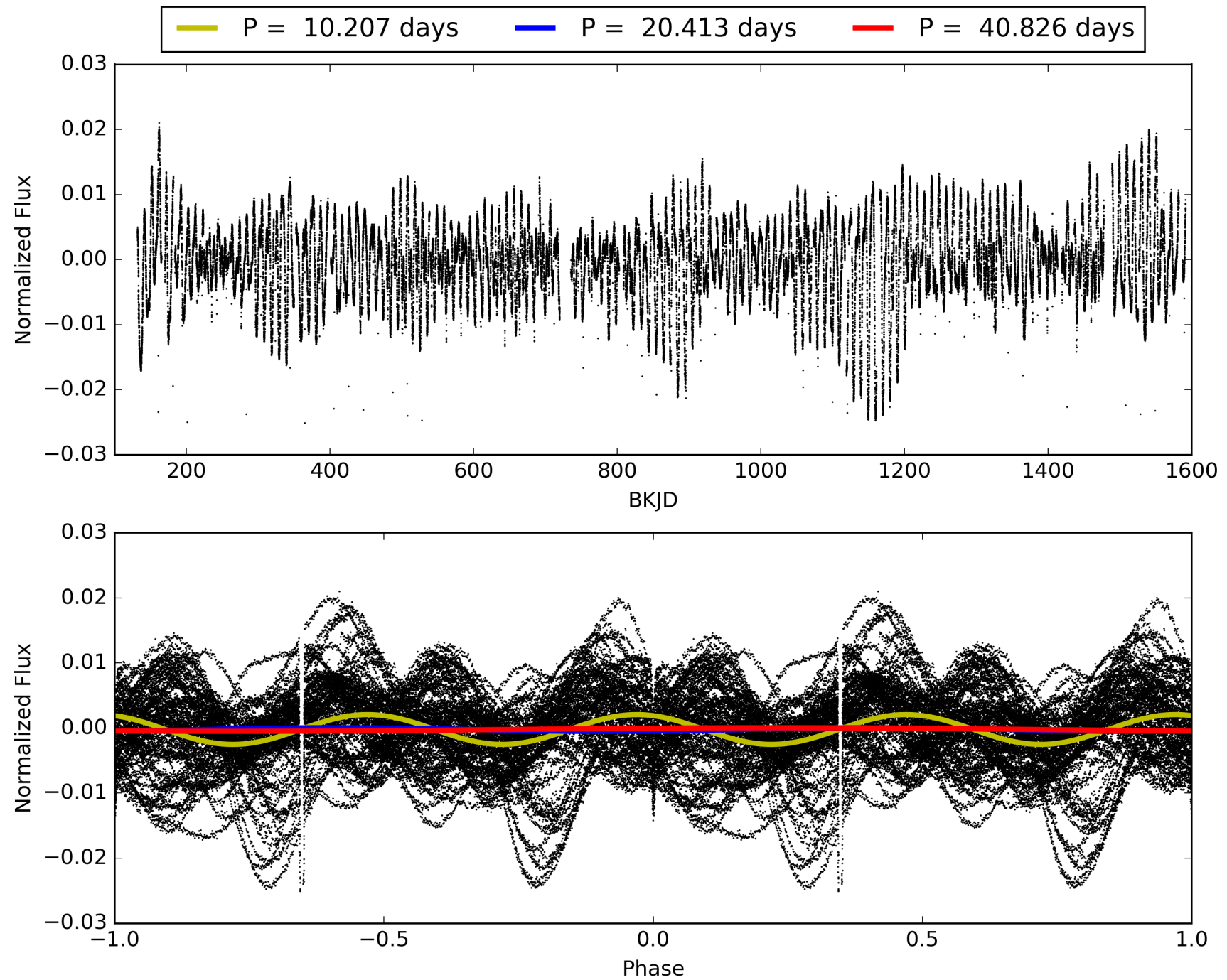
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:37:57 Z

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

TCE 011506235-02, PDC Light Curves

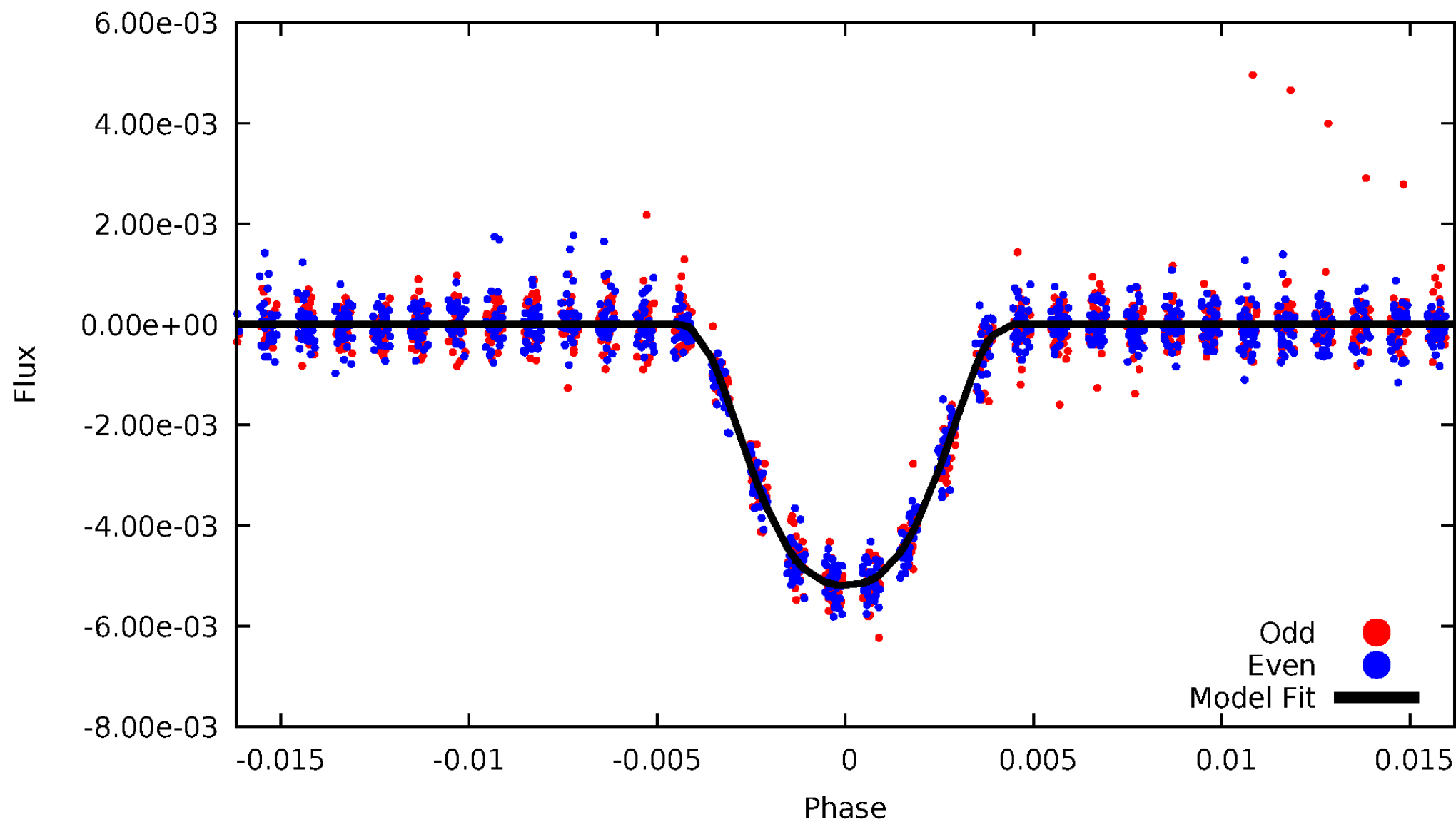


TCE 011506235-02



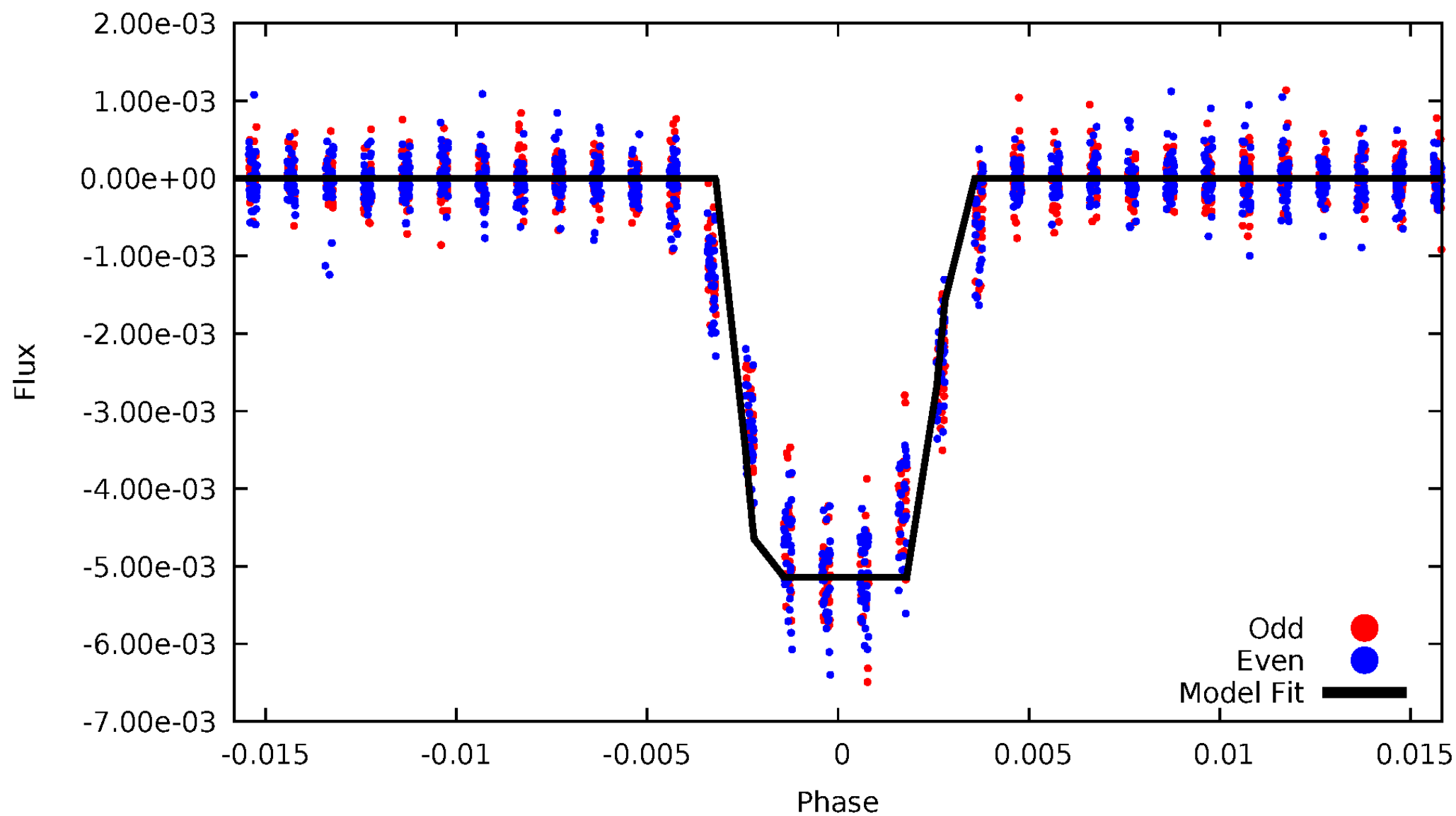
DV Odd/Even

TCE 011506235-02



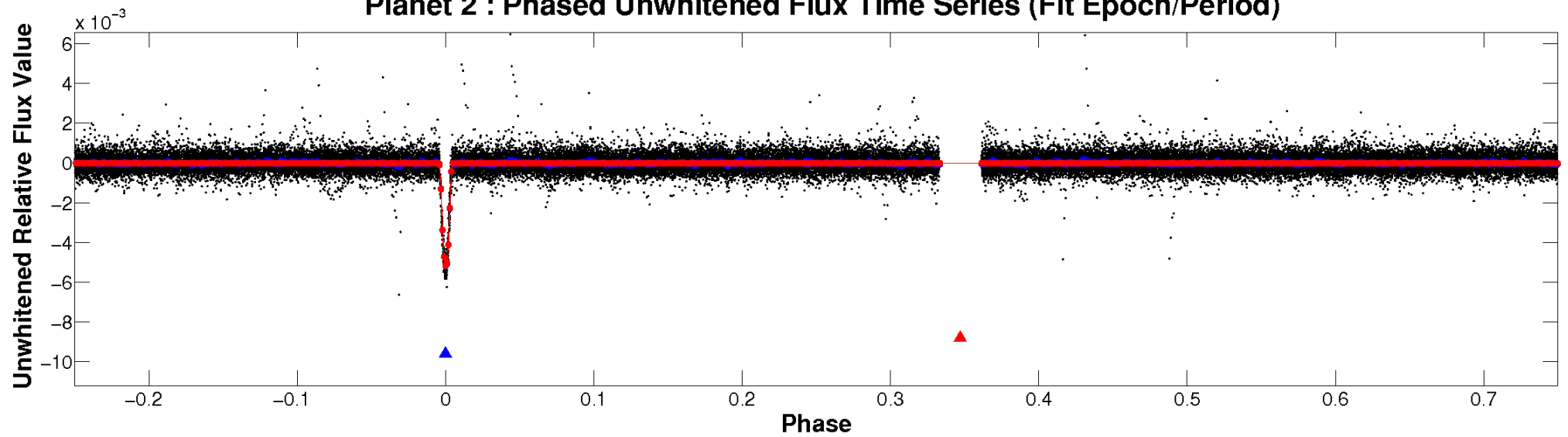
ALT Odd/Even

TCE 011506235-02

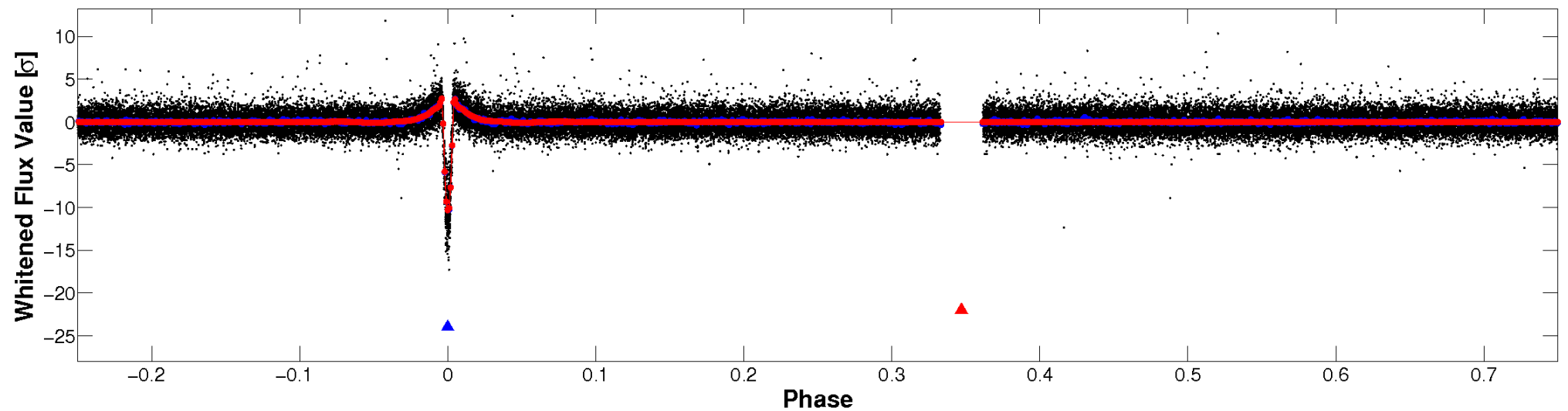


Non-Whitened Vs. Whitened Light Curve

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

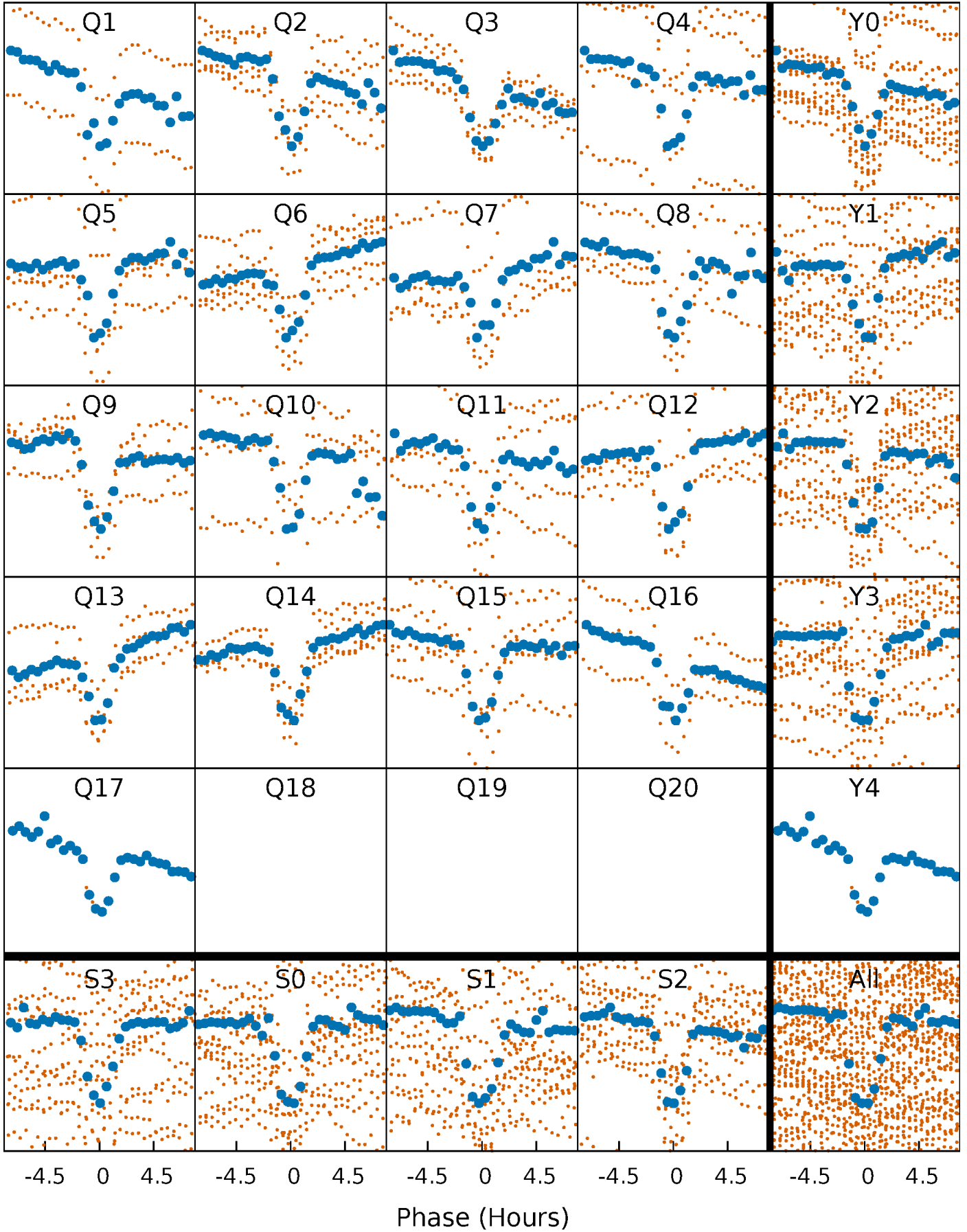


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



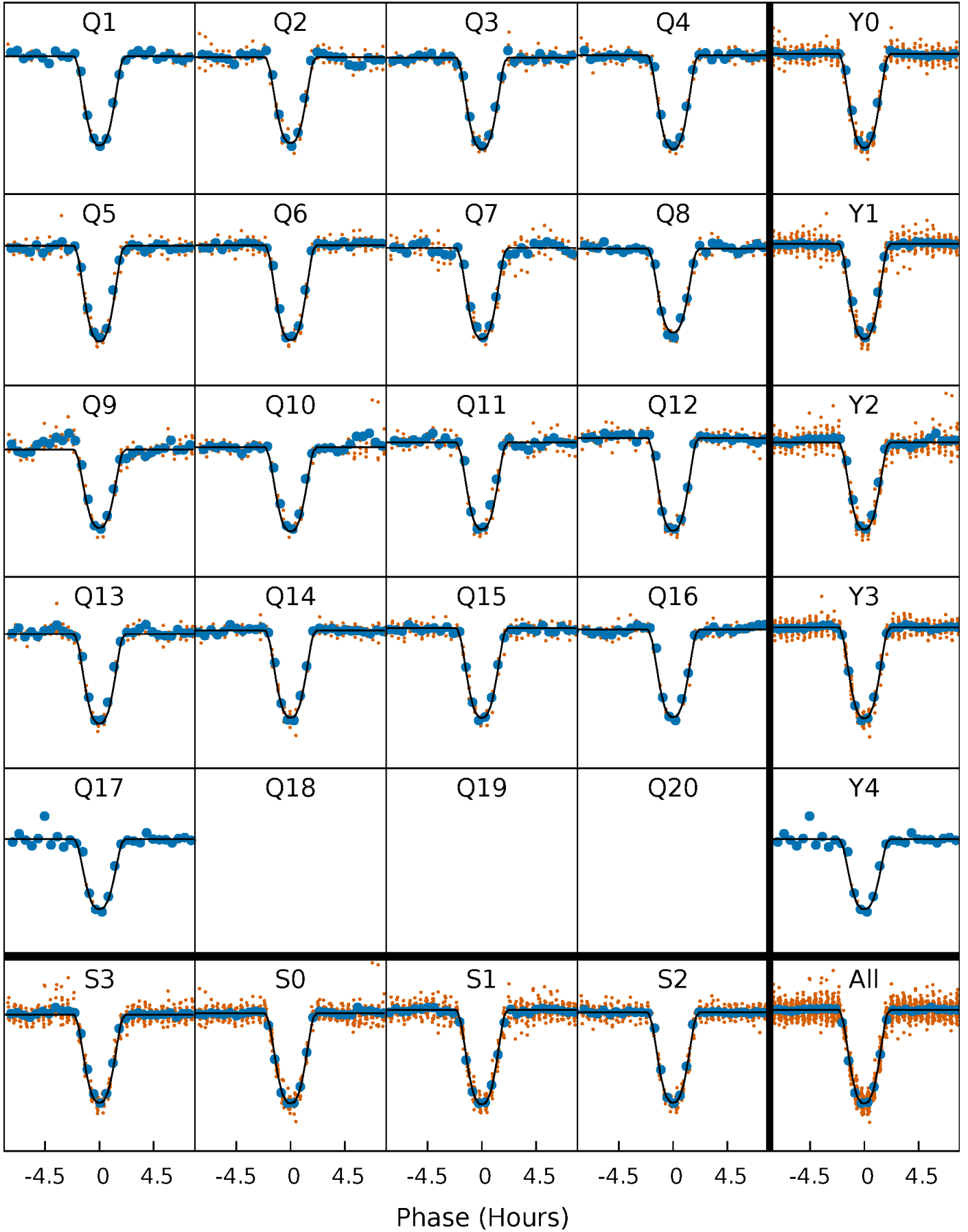
PDC Quarter-Phased Transit Curves

TCE 011506235-02 P= 20.413046 Days $T_0=132.932384$ (BKJD)



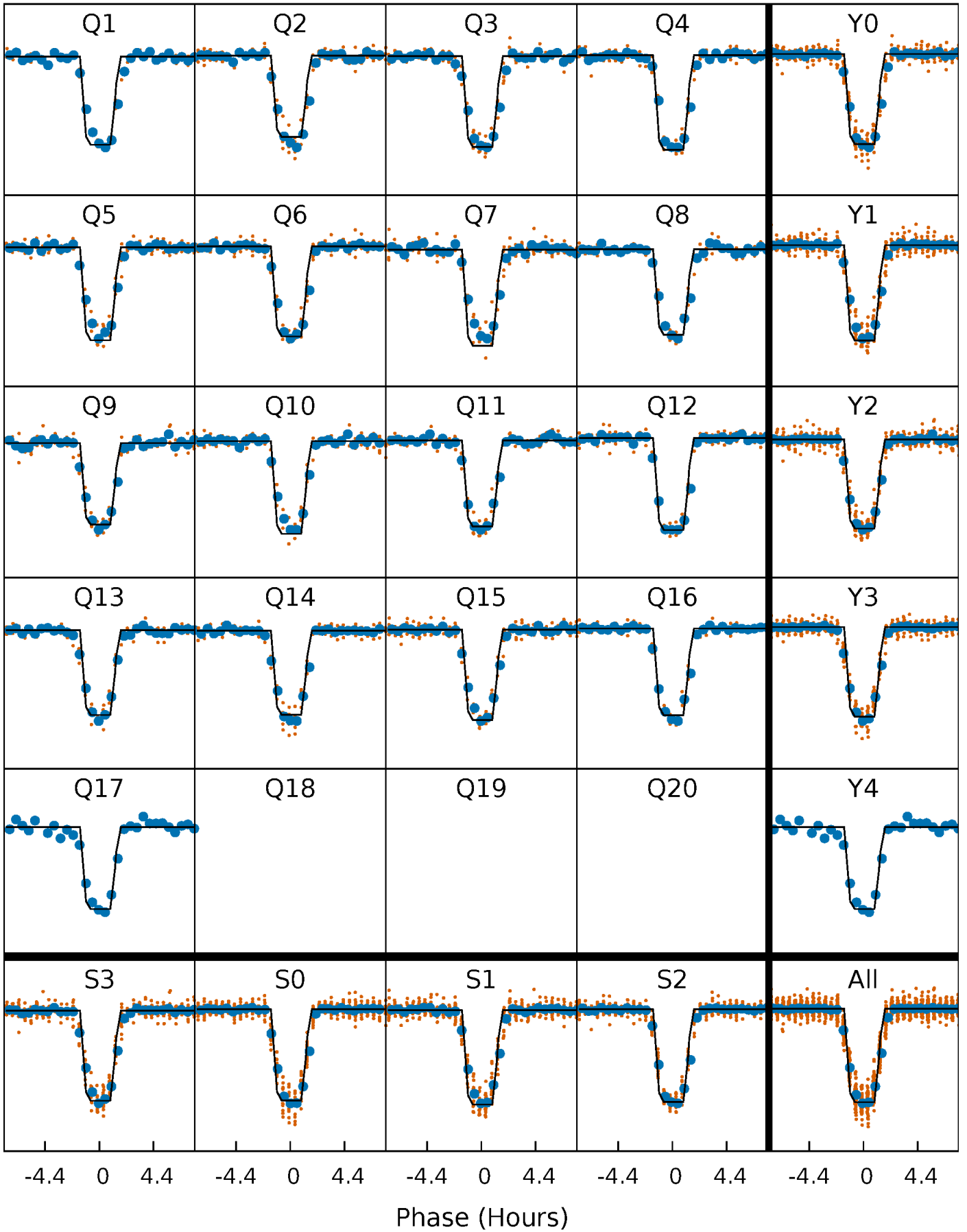
DV Quarter-Phased Transit Curves

TCE 011506235-02 P= 20.413046 Days $T_0=132.932384$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

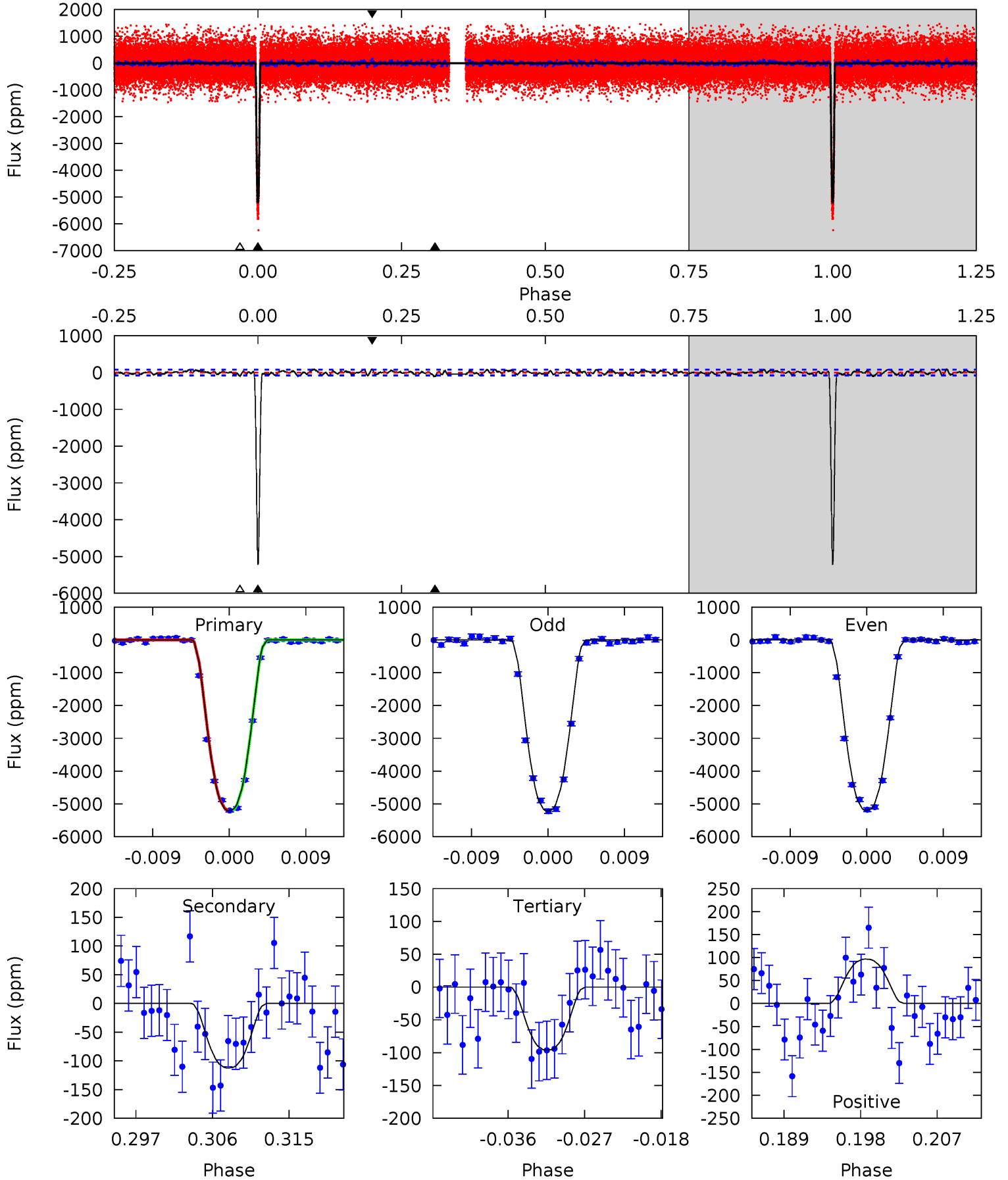
TCE 011506235-02 P= 20.413155 Days $T_0=132.928394$ (BKJD)



DV Model-Shift Uniqueness Test

011506235-02, P = 20.413046 Days, E = 112.519338 Days

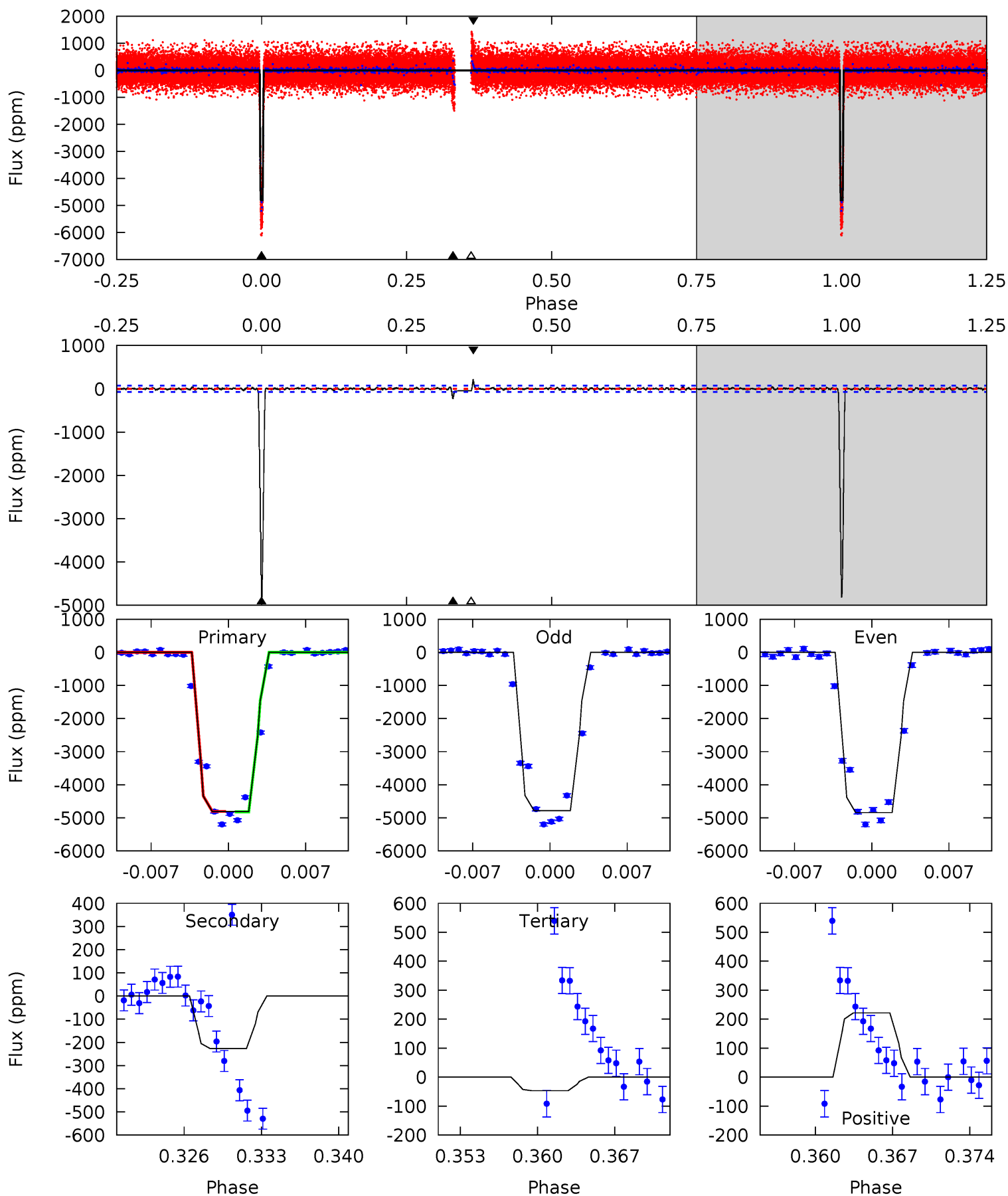
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
334.8	7.23	6.18	6.21	5.05	2.61	2.16	328.6	328.6	1.04	1.02	0.49	1.00	0.02	0.30



Alt Model-Shift Uniqueness Test

011506235-02, P = 20.413155 Days, E = 112.515239 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
331.2	15.6	3.22	15.3	5.10	2.71	1.06	327.9	315.9	12.4	0.33	2.19	1.00	0.04	0.59



Stellar Parameters For KIC 011506235

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5941^{+158}_{-193}	$4.487^{+0.054}_{-0.216}$	$-0.020^{+0.250}_{-0.300}$	$0.963^{+0.297}_{-0.099}$	$1.038^{+0.127}_{-0.140}$	$1.637^{+0.367}_{-0.916}$
	+3%/-3%	+1%/-5%	+1250%/-1500%	+31%/-10%	+12%/-13%	+22%/-56%
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 011506235-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-112 ± 16	$8.58^{+1.55}_{-0.58}$	954^{+64}_{-47}	2866^{+72}_{-75}	17^{+4}_{-4}
Alt.	-226 ± 15	$7.73^{+1.37}_{-0.62}$	950^{+75}_{-42}	3279^{+66}_{-76}	44^{+8}_{-11}

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 $A_{obs} \gg 1.0$

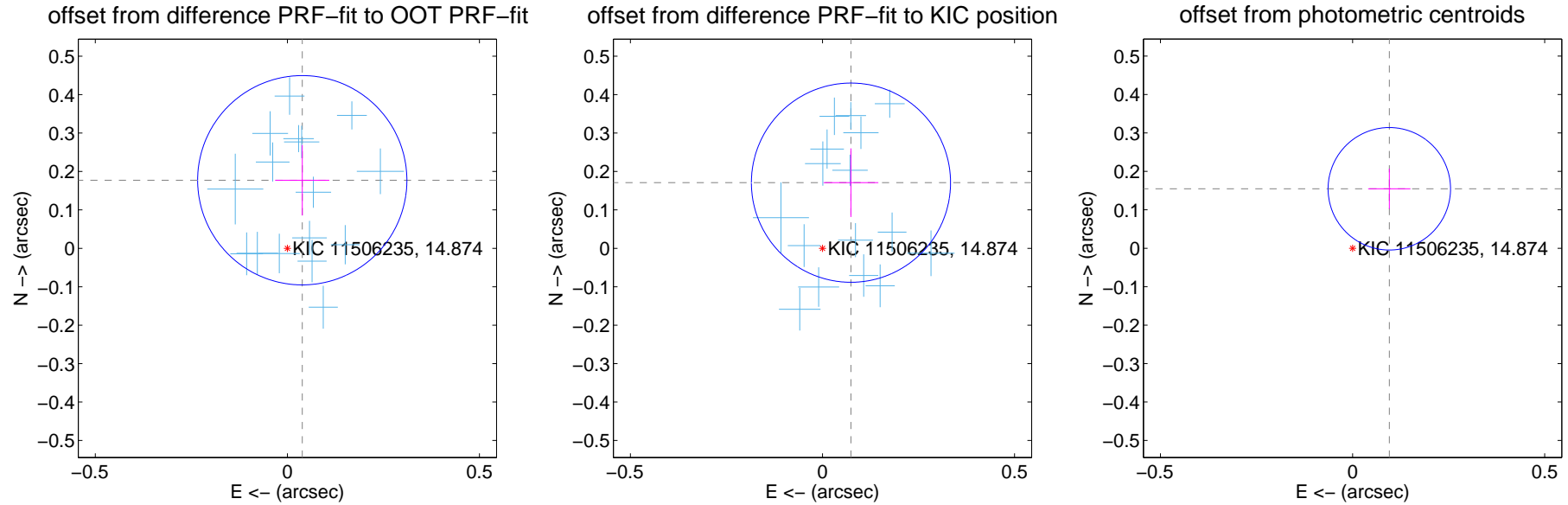
DV Centroid Data

Supplemental centroid analysis for 011506235-02. Kepler magnitude: 14.87. Transit SNR 170.30

There are 17 quarters with good PRF difference image offsets

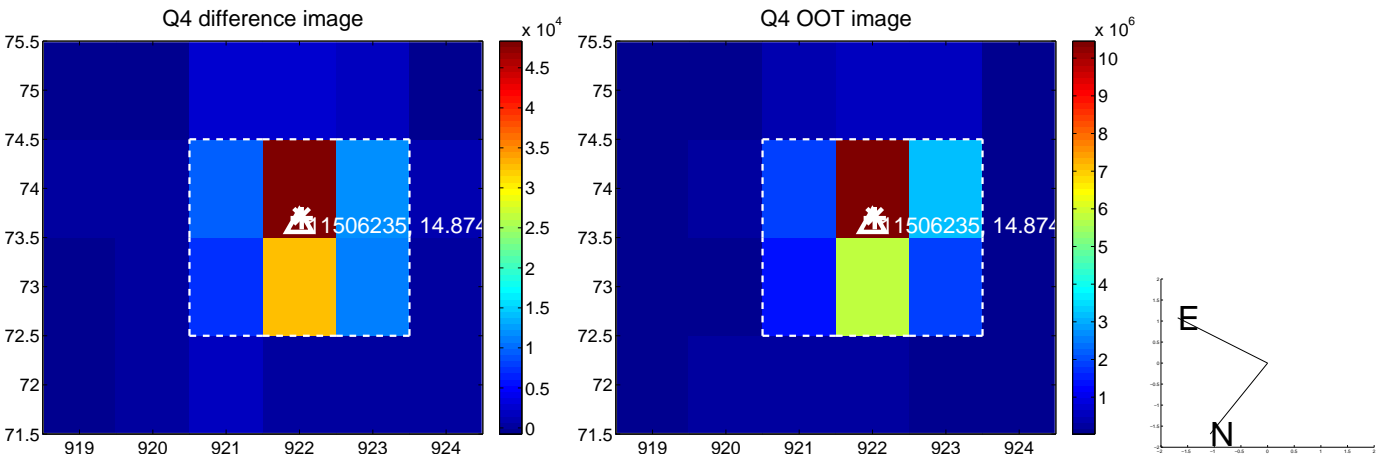
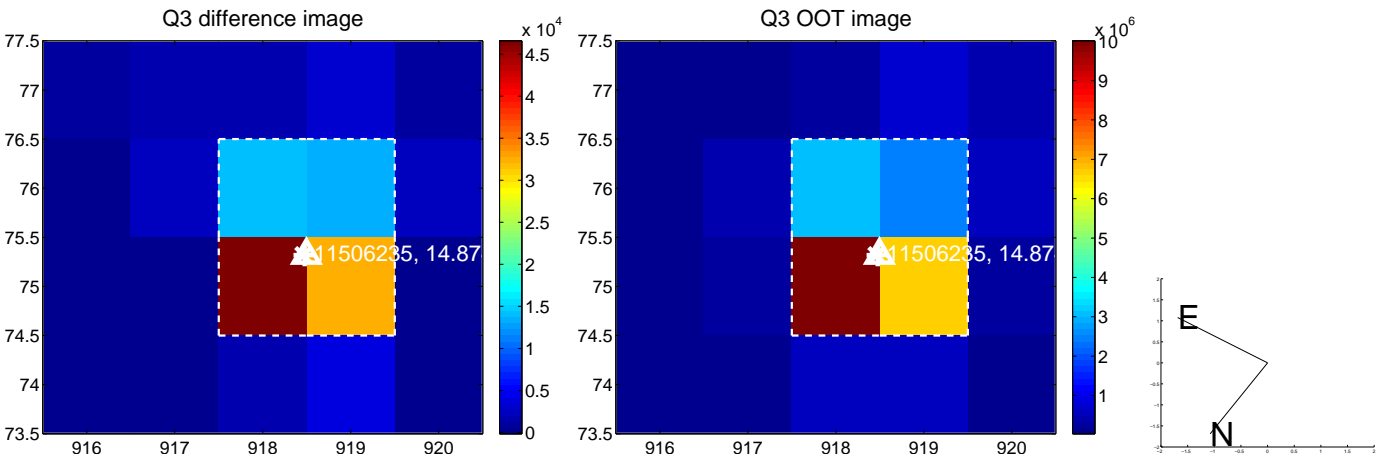
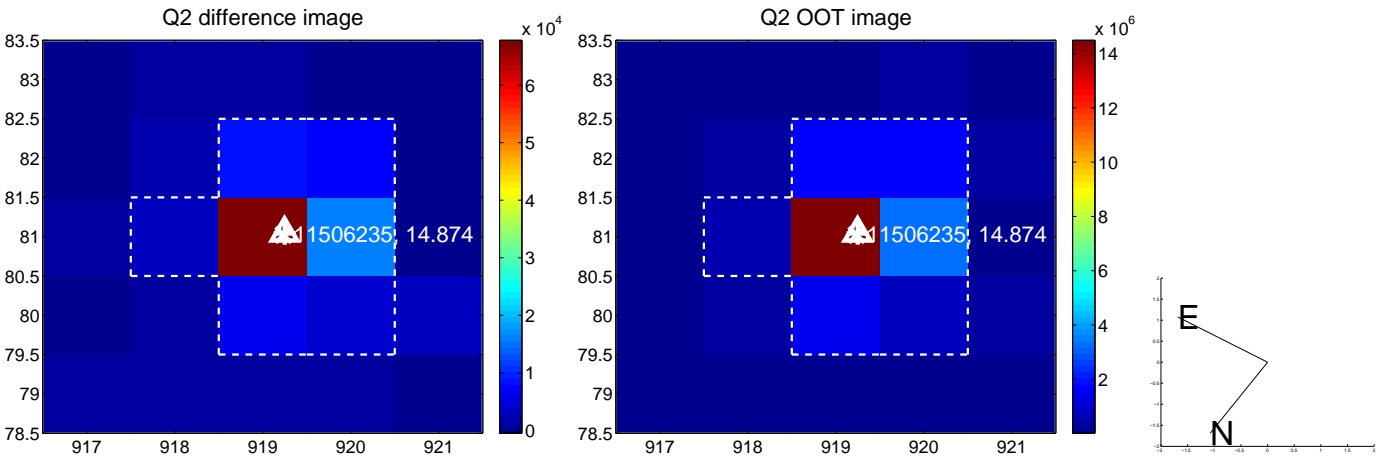
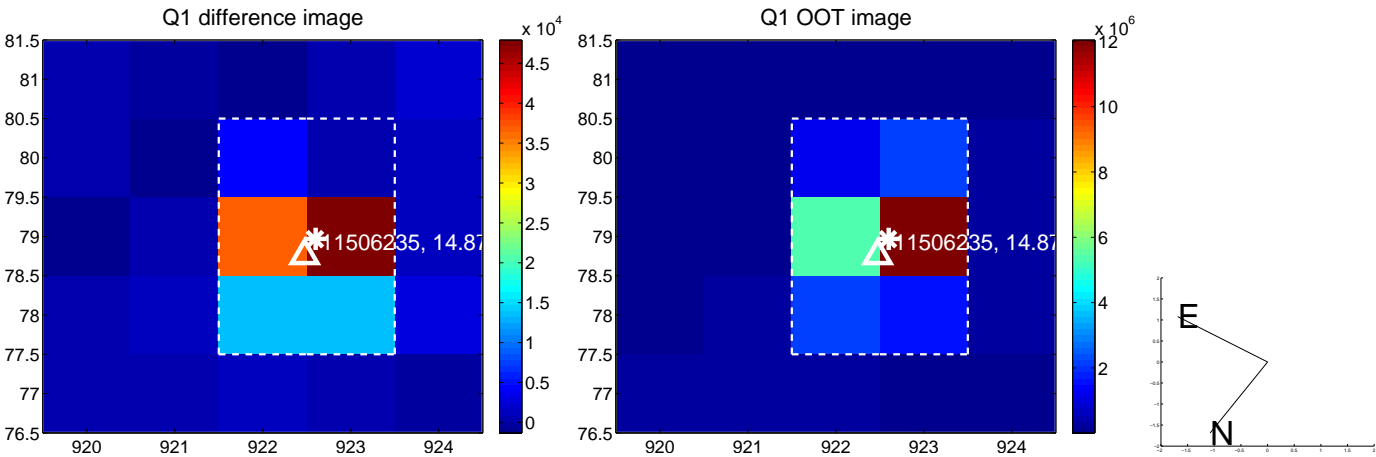
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.181 ± 0.091	2.00	-0.039 ± 0.070	0.177 ± 0.092
PRF-fit source offset from KIC position	0.186 ± 0.086	2.16	-0.074 ± 0.071	0.171 ± 0.089
photometric centroid source offset	0.18 ± 0.05	3.43	-0.10 ± 0.06	0.15 ± 0.05

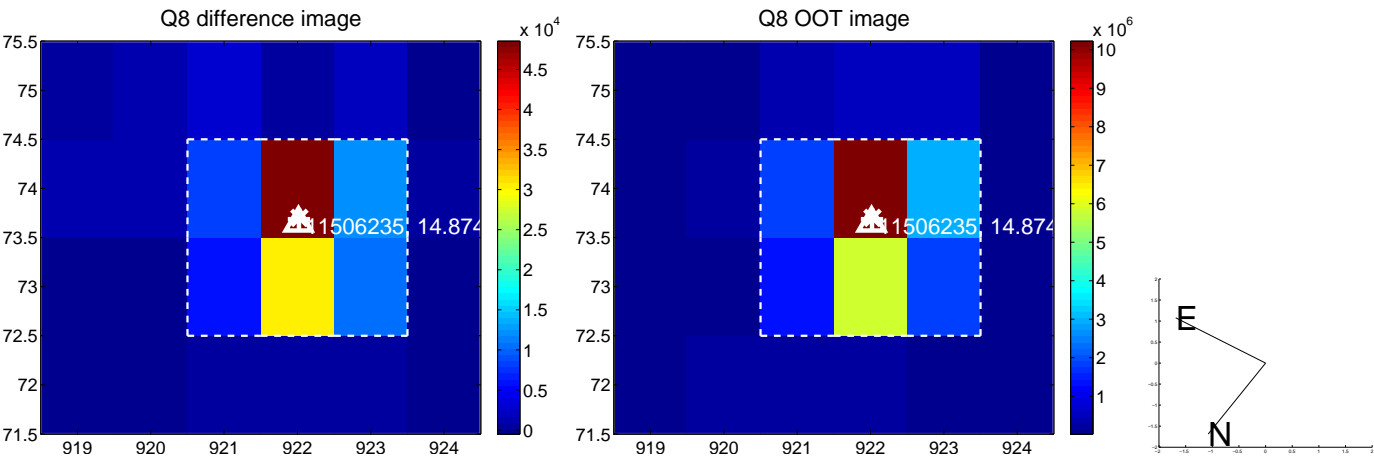
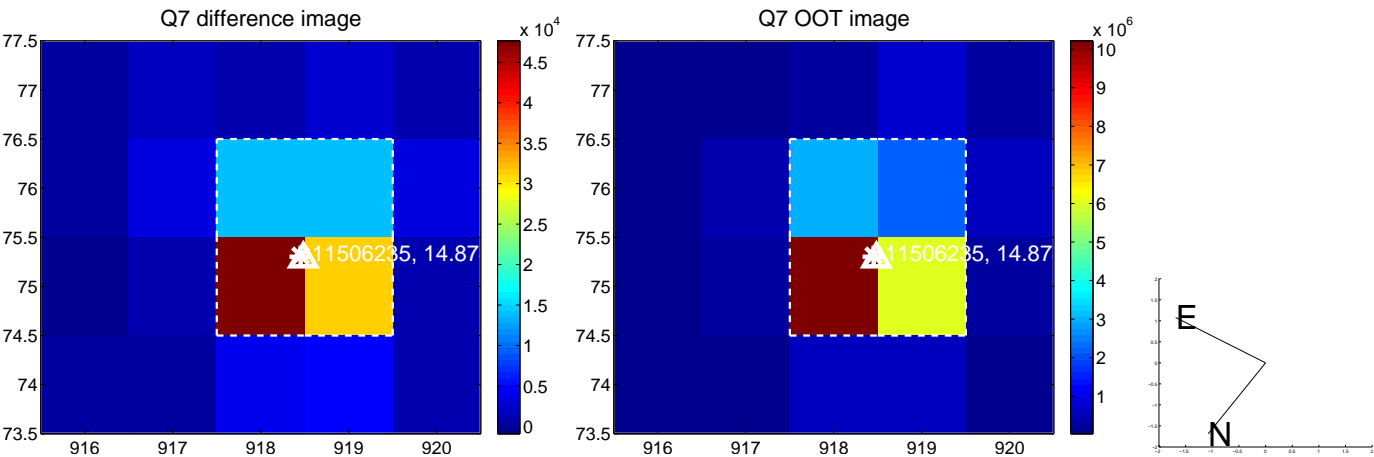
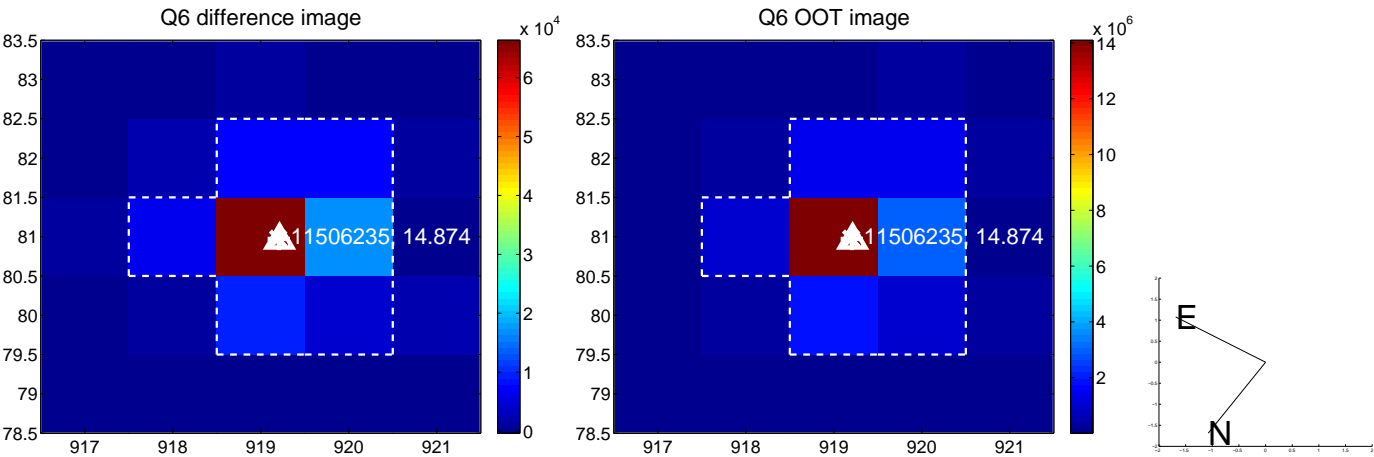
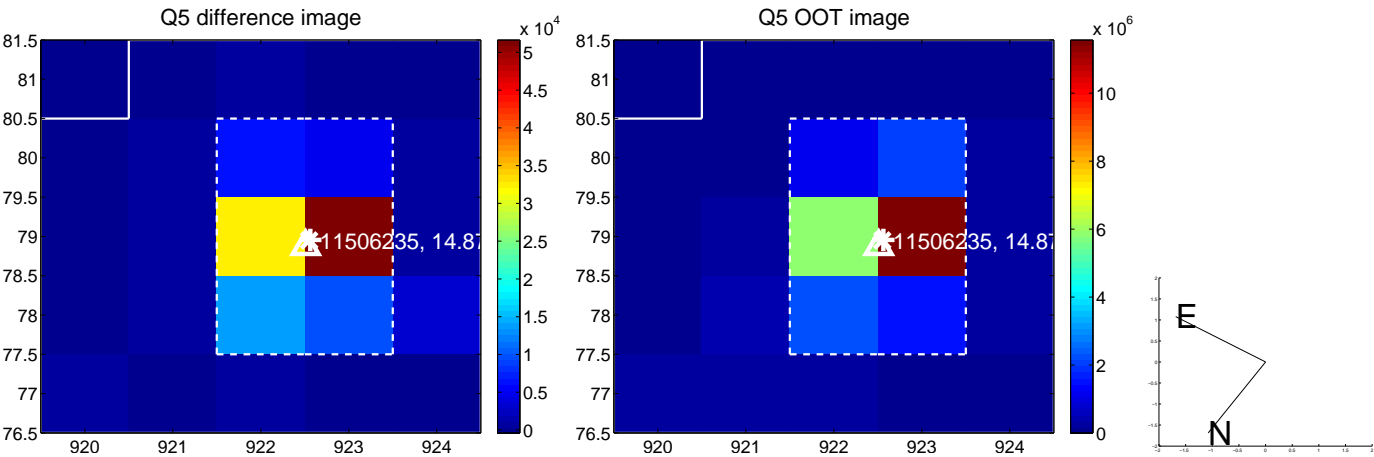


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

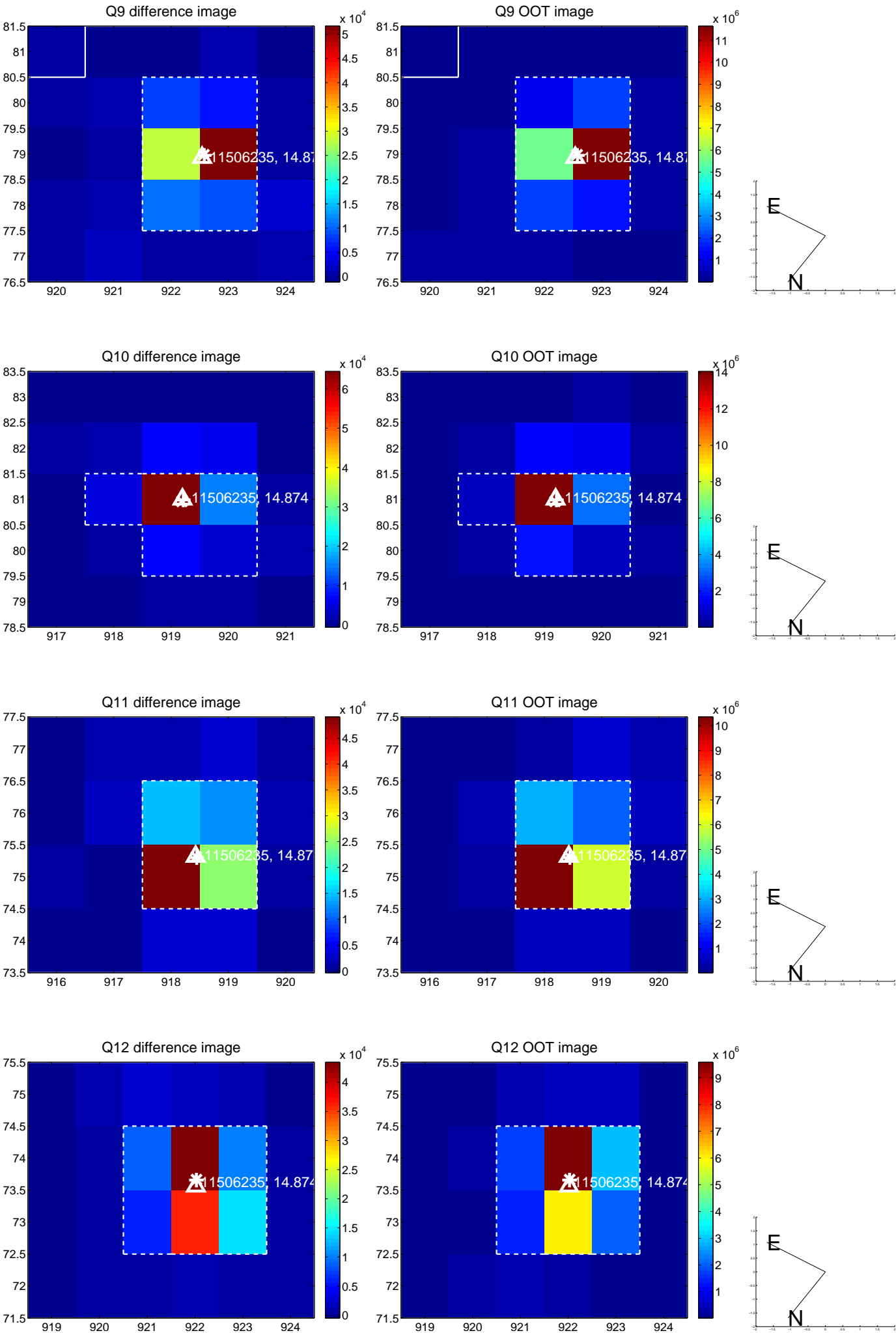
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



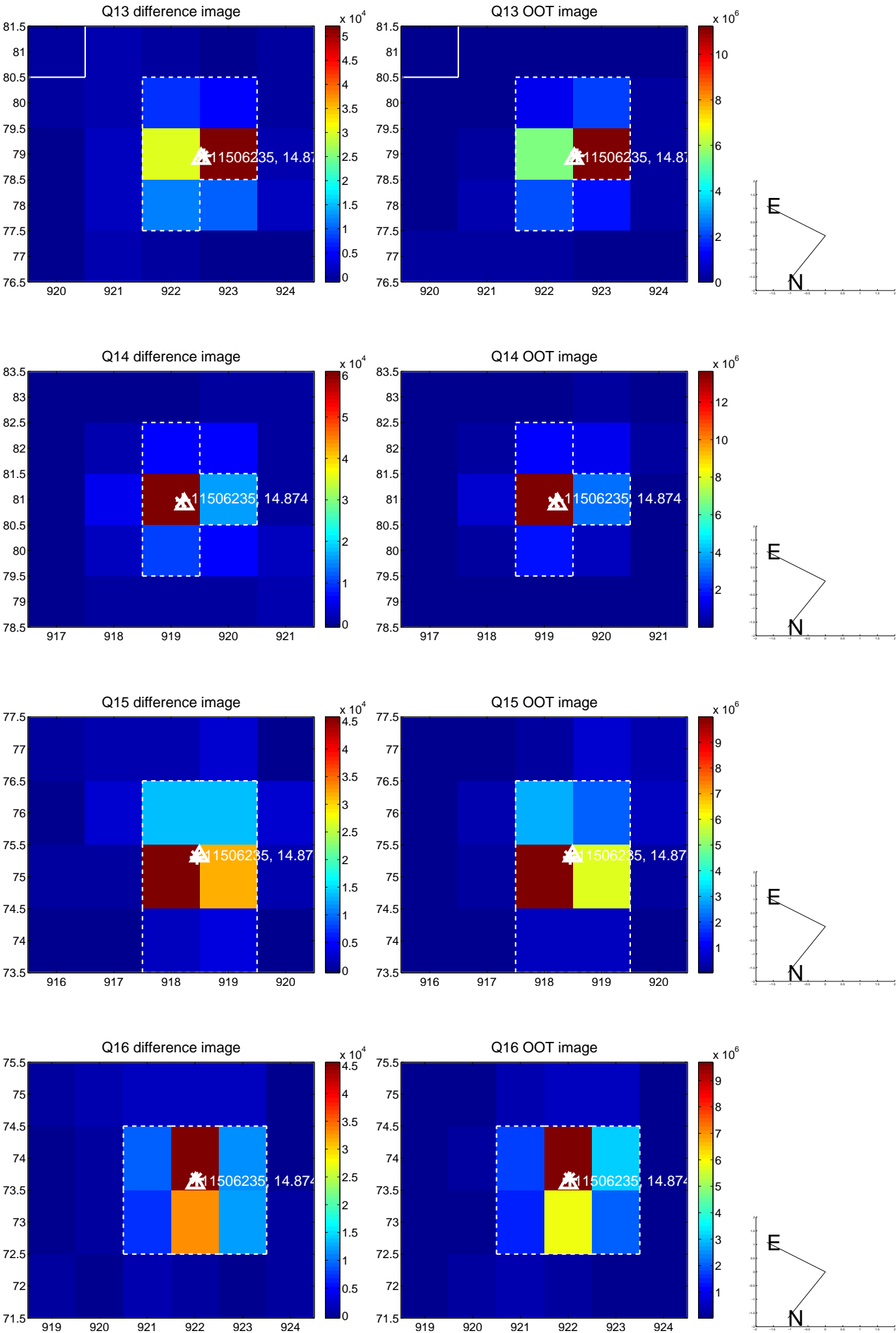
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



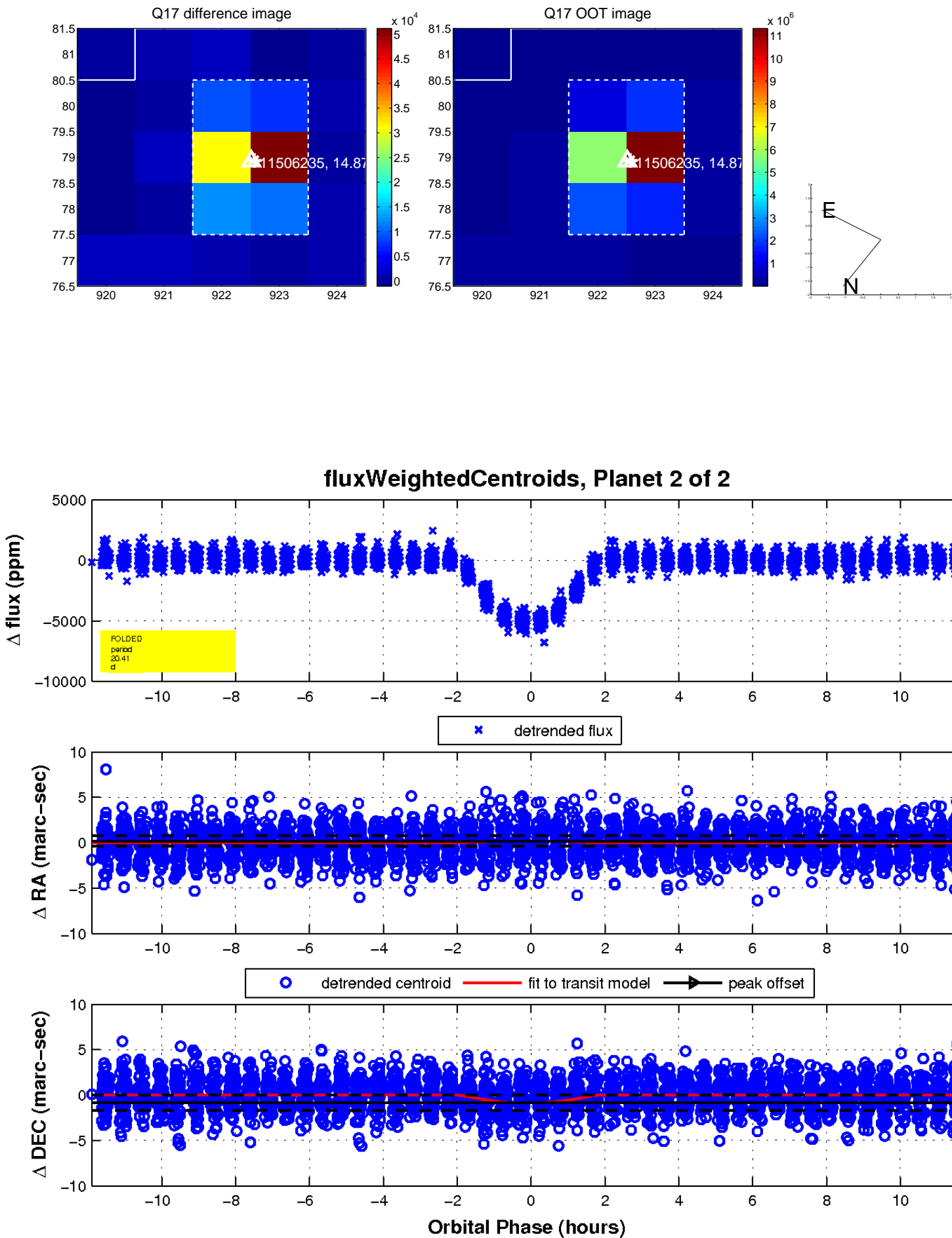
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

